

# APPENDIX E

## FIELD WATER QUALITY TABLES AND PROFILES & FIELD DATA SHEETS

# Summary Tables

## All Sites

Table E-1. RHMP 2013 Water Quality Measurements for Temperature (°C)

Dana Point Harbor				
	Deep	Marina		Shallow
Depth (m)	B13-8263	B13-8259	B13-8267	B13-8265
1	18.9	18.8	18.8	19.0
2	19.0	18.7	18.7	18.9
3	18.3	18.6	18.6	18.1
4	17.4	18.3		17.6
5	17.3			

Oceanside Harbor			
	Deep	Marina	
Depth (m)	B13-8236	B13-8239	B13-8233
1	20.4	20.4	20.4
2	20.3	20.2	20.3
3	19.9	20.0	19.9
4	19.5	19.4	19.6
5	19.0	19.0	
6	18.7	18.7	
7		18.5	
8		18.1	

Mission Bay									
	Deep		Freshwater-Influenced		Marina		Shallow		
Depth (m)	B13-8145	B13-8152	B13-8160	B13-8163	B13-8146	B13-8151	B13-8156	B13-8157	B13-8159
1	20.9	20.7	24.5	24.4	21.1	21.2	22.0	22.8	24.8
2	20.9	20.7	24.4	24.5			20.9	21.1	21.8
3	20.8	20.6	24.3		20.7	20.4	20.5	22.9	24.5
4	20.3	20.6			20.4				24.5
5	20.1	20.4			20.2				
6	20.0	20.3			20.2				
7	19.9				20.0				
8	19.9				19.7				

San Diego Bay - North																		
	Deep							Marina							Shallow			
Depth (m)	B13-8085	B13-8108	B13-8109	B13-8111	B13-8112	B13-8118	B13-8122	B13-8102	B13-8106	B13-8113	B13-8116	B13-8117	B13-8121	B13-8127	B13-8105	B13-8123	B13-8124	B13-8128
1	20.4	21.2	22.2	21.7	21.9	21.5	22.0	21.4	21.4	21.3	21.2	21.1	21.0	23.3	21.1	22.4	22.5	22.8
2	20.1	21.2	21.3	21.7	21.8	21.3	21.9	21.2	21.2	21.0	20.5	20.7	20.4	22.7	20.8	22.4	22.5	22.6
3	19.9	20.4	21.2	21.7	21.8	21.0	20.9	19.7	19.6	20.3	19.8	19.7	19.8	21.7	20.3	22.3	22.2	22.2
4	19.8	18.9	20.9	21.7	21.7	20.5	20.2	18.5	18.5	19.2		19.1		21.3		22.0	21.8	22.1
5	19.5	18.4	19.7	21.7	21.6	19.6	19.3	17.9	18.0			18.6				21.8		22.1
6	19.0		18.1	21.6	21.5	18.6		17.3				18.3						
7	17.8		17.3	21.6	21.4	17.8												
8	17.3		16.7	21.6	21.1	17.1												
9	17.2		16.0	21.4	20.5	16.6												
10	16.9		15.6	21.1	20.2	15.9												
11	16.8		15.4	20.7	20.2	15.3												
12	16.8		15.1		20.2													
13	16.3																	
14	15.8																	
15	15.7																	

	San Diego Bay - Central																											
	Deep				Freshwater-Influenced					Marina	Industrial/Port										Shallow							
Depth (m)	B13-8045	B13-8078	B13-8087	B13-8093	B13-8074	B13-8075	B13-8076	B13-8077	B13-8500	B13-8073	B13-8049	B13-8050	B13-8053	B13-8056	B13-8064	B13-8065	B13-8066	B13-8069	B13-8090	B13-8095	B13-8096	B13-8098	B13-8099	B13-8100	B13-8058	B13-8060	B13-8052	B13-8068
1	23.9	22.3	22.2	22.1	22.1	22.0	22.2	22.3	22.4	22.6	23.7	23.5	25.2	23.3	22.8	22.7	22.8	22.4	23.0	22.6	22.6	22.5	22.2	21.8	23.8	23.0	23.0	23.1
2	23.7	21.8	22.1	22.0	22.1	22.0	22.2	22.3	22.3	22.3	23.7	23.5	25.1	23.3	22.8	22.7	22.8	22.4	23.0	22.5	22.2	22.2	22.1	21.7	23.8	22.9	23.0	23.1
3	23.5	21.6	21.9	21.8	22.1	22.0	22.1	22.2	22.1	22.2	23.7	23.5	24.4	23.3	22.8	22.7	22.8	22.4	22.8	22.2	21.9	21.9	21.8	21.5	23.8	22.8	23.0	23.0
4	23.4	21.5	21.6	21.8	22.0	22.0	22.0	22.1	21.9	22.0	23.7	23.5	23.3	23.3	22.8	22.6	22.8	22.4	22.4	22.0	21.8	21.6	21.1	21.0	23.8	22.7	23.0	22.9
5	23.3	21.3	20.8	21.5	22.0	22.0	22.0	22.0	21.8	21.9	23.7	23.5	22.9	23.3	22.8	22.6	22.8	22.4	21.6	21.2	21.1	21.4	20.3	19.8	23.8			22.7
6	22.5	21.0	19.6	20.2	22.0	22.0	22.0	21.9			23.7	23.4		23.4	22.8	22.6	22.8	22.4	21.0	20.6	20.1	21.3	19.6	18.4				
7	22.1	20.3	18.2	17.6	21.9	22.0	21.9	21.9			23.7	23.4		23.4	22.8	22.6	22.8	22.3	20.7	18.6	19.4	20.5	18.9	17.8				
8	22.0	19.6	17.3	16.5	21.7	21.9	21.9	21.9			23.7	23.5		23.4	22.8		22.8	22.1	19.3	17.1	18.4	18.5	17.1	17.2				
9	21.7	18.8	16.3	16.1	21.3	21.7	21.9	21.8			23.8	23.6		23.4	22.9		22.8	22.0		16.6	17.5	16.9	16.3	16.6				
10	20.8	18.5	15.8	15.7	21.0	21.4	21.8	21.8			23.8	23.6		23.5	22.9		22.8	21.9		16.1	16.9	16.3	16.0					
11	19.8	18.3	15.7	15.4							23.8	23.7		23.5	22.9		22.8	21.7		15.7	16.2	16.0						
12	19.5	18.3	15.6	15.3							23.8	23.8			23.0		22.8	21.6		15.5	15.6	15.7						
13		18.3	15.6	15.3							23.8									15.5	15.5	15.5						
14				15.3																	15.5	15.4						

San Diego Bay - South													
	Freshwater-Influenced							Marina		Shallow			
Depth (m)	B13-8028	B13-8029	B13-8030	B13-8033	B13-8036	B13-8038	B13-8031	B13-8040	B13-8013	B13-8014	B13-8017	B13-8018	B13-8020
1	24.8	24.0	25.1	25.2	24.8	25.0	25.2	25.4	24.6	24.4	24.1	26.1	23.6
2	24.7	24.0	25.0	25.2	24.7	25.1	25.1	25.4	24.6	24.4	24.0		23.6
3	24.7	24.0	24.8	25.2	24.6	25.0	24.9	25.1	24.6	24.4	23.7		23.5
4	24.6	24.0	24.6	25.1	24.5	24.9	24.4	24.7					23.5
5	24.5	24.0	24.6	25.1	24.5	24.9	23.5						23.5
6	24.5	24.0	24.6	25.1	24.5	24.8	22.8						
7	24.5	23.9	24.5	24.9	24.5	24.8	22.6						
8	24.5		24.5	24.7	24.5	24.6	21.9						
9	24.5			24.7	24.5	24.5	21.3						
10	24.5				24.5	24.5	21.1						
11	24.5				24.5	24.4	20.6						
12					24.4	24.3	20.2						
13					24.1		20.1						

Notes:  
Ranges are based on binned depths (1-meter increments) at all stations. The number of data points available at each station varied from 1 to 15, depending on depth.  
°C = degrees Celsius.  
Field meters were calibrated on a daily basis.

Table E-2. RHMP 2013 Water Quality Measurements for Salinity (ppt)

Dana Point Harbor				
	Deep	Marina		Shallow
Depth (m)	B13-8263	B13-8259	B13-8267	B13-8265
1	33.6	33.5	33.5	33.5
2	33.5	33.5	33.5	33.6
3	33.6	33.5	33.6	33.6
4	33.6	33.5		33.6
5	33.6			

Oceanside Harbor			
	Deep	Marina	
Depth (m)	B13-8236	B13-8239	B13-8233
1	33.4	33.5	33.3
2	33.4	33.5	33.4
3	33.5	33.5	33.6
4	33.6	33.5	33.7
5	33.5	33.6	
6	33.6	33.6	
7		33.5	
8		33.6	

Mission Bay									
	Deep		Freshwater-Influenced		Marina		Shallow		
Depth (m)	B13-8145	B13-8152	B13-8160	B13-8163	B13-8146	B13-8151	B13-8156	B13-8157	B13-8159
1	33.7	33.7	35.0	34.7	33.7	33.7	33.7	34.1	35.1
2	33.7	33.7	35.0	34.7	33.7	33.6	33.7	34.1	35.1
3	33.7	33.7	35.0		33.6	33.6	33.6	34.1	35.1
4	33.6	33.7			33.6				28.4
5	33.6	33.6			33.6				
6	33.6	33.6			33.7				
7	33.6				33.6				
8	33.6				33.6				

San Diego Bay - North																		
	Deep							Marina						Shallow				
Depth (m)	B13-8085	B13-8108	B13-8109	B13-8111	B13-8112	B13-8118	B13-8122	B13-8102	B13-8106	B13-8113	B13-8116	B13-8117	B13-8121	B13-8127	B13-8105	B13-8123	B13-8124	B13-8128
1	33.7	33.7	34.0	33.9	33.9	34.0	34.0	33.7	33.7	33.6	33.6	33.7	33.8	33.8	33.8	33.9	33.9	33.9
2	33.7	33.7	34.0	33.9	33.9	33.9	33.9	33.7	33.7	33.6	33.6	33.5	33.8	33.9	33.8	33.9	33.9	34.0
3	33.7	33.5	34.0	33.9	33.9	33.9	33.8	33.5	33.5	33.5	33.6	33.5	33.7	34.3	33.7	33.9	33.9	33.9
4	33.7	33.5	33.9	33.9	33.9	33.9	33.8	33.6	33.6	33.5		33.6		34.6		33.9	33.9	33.9
5	33.7	33.6	33.7	33.9	33.9	33.7	33.7	33.5	33.6			33.5				33.9		33.9
6	33.5			33.7	33.9	33.9	33.7		33.5			33.6						
7	33.4			33.7	33.9	33.8	33.6											
8	33.5			33.6	33.9	33.8	33.7											
9	33.6			33.6	33.8	33.7	33.6											
10	33.5			33.6	33.8	33.7	33.5											
11	33.5			33.6	31.3	33.7	33.6											
12	33.5			33.6		33.7												
13	33.4																	
14	33.5																	
15	33.5																	

	San Diego Bay - Central																												
	Deep				Freshwater-Influenced					Marina	Industrial/Port										Shallow								
Depth (m)	B13-8045	B13-8078	B13-8087	B13-8093	B13-8074	B13-8075	B13-8076	B13-8077	B13-8500	B13-8073	B13-8049	B13-8050	B13-8053	B13-8056	B13-8064	B13-8065	B13-8066	B13-8069	B13-8090	B13-8095	B13-8096	B13-8098	B13-8099	B13-8100	B13-8058	B13-8060	B13-8052	B13-8068	
1	34.7	34.0	34.1	34.1	34.3	34.2	34.3	34.3	33.9	34.0	34.7	34.7	34.6	34.6	34.5	34.5	34.5	34.3	34.4	34.2	34.2	34.1	34.1	34.0	34.0	34.5	34.3	34.5	34.4
2	34.7	34.0	34.1	34.1	34.3	34.2	34.3	34.3	33.9	34.0	34.7	34.7	34.5	34.6	34.5	34.5	22.8	34.3	34.4	34.2	34.1	34.1	34.1	34.0	34.5	34.3	34.5	34.4	
3	34.7	34.0	34.0	34.1	34.3	34.2	34.2	34.3	34.0	34.0	34.7	34.7	34.3	34.6	34.5	34.5	34.5	34.3	34.4	34.1	34.1	34.1	34.0	33.9	34.5	34.3	34.4	34.4	
4	34.7	34.0	34.0	34.1	34.3	34.2	34.2	34.3	33.9	34.0	34.8	34.7	34.2	34.6	34.5	34.5	34.5	34.3	34.3	34.1	34.0	34.0	33.9	33.9	34.5	34.3	34.4	34.3	
5	34.6	34.0	33.8	34.0	34.3	34.2	34.2	34.3	33.9	34.0	34.8	34.7	34.3	34.7	34.5	34.5	34.5	34.4	34.1	33.9	33.9	34.0	33.8	33.7	34.5			34.3	
6	34.4	33.9	33.7	33.7	34.2	34.2	34.2	34.3			34.8	34.7		34.7	34.5	34.5	34.5	34.4	34.1	33.9	33.9	34.0	33.8	33.6					
7	34.4	33.8	33.5	33.4	34.2	34.2	34.2	34.3			34.8	34.7		34.8	34.5	34.5	34.5	34.3	34.1	33.4	33.8	33.9	33.7	33.7					
8	34.4	33.8	33.6	33.6	34.2	34.2	34.2	34.3			34.9	34.8		34.8	34.5		34.6	34.3	33.8	33.6	33.6	33.4	33.5	33.7					
9	34.3	33.7	33.5	33.6	34.1	34.2	34.2	34.3			35.1	34.9		34.8	34.6		34.6	34.3		33.6	33.7	33.6	33.6	33.5					
10	34.1	33.8	33.6	33.6	34.1	34.2	34.2	34.3			35.1	34.9		34.9	34.6		34.6	34.3		33.6	33.6	33.6	33.6						
11	33.9	33.8	33.6	33.6							35.1	35.1		31.9	34.8		34.6	34.2		33.5	33.6	33.6							
12	34.0	33.8	33.6	33.6							35.1	35.2			33.8		34.0	34.2		33.6	33.6	33.6							
13		33.8	33.6	33.6							35.1									33.6	33.6	33.6							
14				33.6																	33.6								

San Diego Bay - South													
	Freshwater-Influenced							Marina		Shallow			
Depth (m)	B13-8028	B13-8029	B13-8030	B13-8033	B13-8036	B13-8038	B13-8031	B13-8040	B13-8013	B13-8014	B13-8017	B13-8018	B13-8020
1	35.0	35.2	35.1	34.8	35.0	35.1	34.9	35.1	35.4	35.3	35.1	35.3	34.9
2	35.0	35.2	35.0	34.9	35.0	35.1	35.0	35.1	35.4	35.3	35.1		34.9
3	35.0	35.2	35.0	34.9	35.0	35.0	35.0	35.0	35.4	35.3	35.2		34.9
4	35.0	35.2	35.1	34.9	35.0	35.0	35.0	35.0					34.9
5	35.0	35.2	35.1	35.0	35.0	35.0	34.7						34.9
6	35.1	35.2	35.1	35.0	35.1	35.0	34.6						
7	35.1	35.2	35.1	35.1	35.1	35.0	34.6						
8	35.1		35.1	35.2	35.1	35.0	34.3						
9	35.1			35.3	35.1	35.1	34.3						
10	35.1				35.1	35.1	34.2						
11	35.1				35.1	35.1	34.1						
12					35.1	35.1	34.1						
13					35.0		34.1						

Notes:  
Ranges are based on binned depths (1-meter increments) at all stations. The number of data points available at each station varied from 1 to 15, depending on depth.  
ppt = parts per trillion  
Field meters were calibrated on a daily basis.



Table E-3. RHMP 2013 Water Quality Measurements for pH

Dana Point Harbor				
	Deep	Marina		Shallow
Depth (m)	B13-8263	B13-8259	B13-8267	B13-8265
1	7.75	6.67	7.22	7.45
2	7.75	6.68	7.23	7.46
3	7.76	6.69	7.24	7.47
4	7.77	6.70		7.48
5	7.78			

Oceanside Harbor			
	Deep	Marina	
Depth (m)	B13-8236	B13-8239	B13-8233
1	7.34	7.62	6.83
2	7.34	7.62	6.83
3	7.35	7.63	6.84
4	7.36	7.64	6.85
5	7.37	7.65	
6	7.38	7.65	
7		7.66	
8		7.67	

Mission Bay									
	Deep		Freshwater-Influenced		Marina		Shallow		
Depth (m)	B13-8145	B13-8152	B13-8160	B13-8163	B13-8146	B13-8151	B13-8156	B13-8157	B13-8159
1	6.91	7.71	7.38	7.63	7.37	7.84	7.87	7.06	7.68
2	6.91	7.71	7.38	7.63	7.37	7.84	7.87	7.07	7.68
3	6.92	7.72	7.39		7.38	7.85	7.89	7.07	7.69
4	6.92	7.72			7.39				7.69
5	6.93	7.72			7.39				
6	6.94	7.73			7.39				
7	6.95				7.40				
8	6.96				7.40				

San Diego Bay - North																		
	Deep							Marina							Shallow			
Depth (m)	B13-8085	B13-8108	B13-8109	B13-8111	B13-8112	B13-8118	B13-8122	B13-8102	B13-8106	B13-8113	B13-8116	B13-8117	B13-8121	B13-8127	B13-8105	B13-8123	B13-8124	B13-8128
1	7.05	7.83	7.18	7.10	7.40	7.57	7.76	7.94	7.94	7.72	7.72	7.57	7.88	7.85	7.35	7.70	7.75	7.76
2	7.05	7.84	7.19	7.11	7.41	7.57	7.76	7.95	7.95	7.72	7.73	7.57	7.89	7.86	7.35	7.70	7.75	7.76
3	7.06	7.84	7.19	7.11	7.41	7.57	7.77	7.96	7.96	7.73	7.74	7.58	7.91	7.87	7.36	7.71	7.75	7.76
4	7.06	7.87	7.19	7.11	7.41	7.58	7.78	7.98	7.98	7.73		7.59		7.87		7.71	7.76	7.77
5	7.07	7.87	7.20	7.12	7.41	7.59	7.79	7.99	7.99			7.57				7.71		7.77
6	7.07		7.22	7.12	7.42	7.60		8.00				7.56						
7	7.09		7.23	7.12	7.42	7.61												
8	7.10		7.25	7.12	7.42	7.62												
9	7.10		7.26	7.13	7.43	7.63												
10	7.11		7.26	7.13	7.44	7.64												
11	7.11		7.27	7.14	7.44	7.65												
12	7.12		7.28		7.45													
13	7.12																	
14	7.13																	
15	7.13																	

San Diego Bay - Central																												
	Deep				Freshwater-Influenced					Marina	Industrial/Port										Shallow							
Depth (m)	B13-8045	B13-8078	B13-8087	B13-8093	B13-8074	B13-8075	B13-8076	B13-8077	B13-8500	B13-8073	B13-8049	B13-8050	B13-8053	B13-8056	B13-8064	B13-8065	B13-8066	B13-8069	B13-8090	B13-8095	B13-8096	B13-8098	B13-8099	B13-8100	B13-8058	B13-8060	B13-8052	B13-8068
1	7.67	7.85	7.94	7.30	7.27	6.96	7.54	7.67	7.61	7.95	7.89	7.84	7.44	7.72	7.24	6.86	7.50	7.61	7.62	7.90	7.83	7.77	7.68	7.53	7.08	7.61	7.30	7.42
2	7.67	7.85	7.95	7.30	7.27	6.96	7.54	7.67	7.61	7.95	7.89	7.84	7.44	7.72	7.24	6.86	22.78	7.61	7.62	7.90	7.83	7.78	7.68	7.53	7.08	7.61	7.30	7.42
3	7.68	7.86	7.95	7.30	7.28	6.97	7.54	7.67	7.61	7.94	7.89	7.84	7.45	7.72	7.25	6.86	7.50	7.61	7.62	7.90	7.84	7.79	7.69	7.53	7.08	7.61	7.30	7.42
4	7.68	7.86	7.95	7.30	7.28	6.97	7.54	7.68	7.62	7.94	7.89	7.84	7.46	7.72	7.25	6.87	7.50	7.61	7.63	7.91	7.84	7.79	7.70	7.54	7.09	7.61	7.30	7.42
5	7.68	7.86	7.95	7.31	7.28	6.97	7.54	7.68	7.62	7.93	7.89	7.84	7.47	7.72	7.25	6.87	7.50	7.61	7.64	7.91	7.85	7.79	7.70	7.55	7.09			7.43
6	7.68	7.87	7.97	7.32	7.29	6.98	7.55	7.68			7.89	7.84		7.72	7.25	6.88	7.50	7.61	7.65	7.92	7.86	7.80	7.72	7.56				
7	7.69	7.88	7.98	7.34	7.29	6.98	7.55	7.68			7.89	7.84		7.72	7.25	6.88	7.50	7.61	7.65	7.94	7.86	7.80	7.72	7.57				
8	7.69	7.88	8.00	7.36	7.29	6.99	7.55	7.68			7.89	7.84		7.72	7.25		7.50	7.62	7.66	7.96	7.87	7.82	7.74	7.58				
9	7.70	7.89	8.01	7.37	7.30	6.99	7.55	7.68			7.88	7.84		7.72	7.25		7.51	7.62		7.97	7.89	7.85	7.76	7.59				
10	7.71	7.90	8.02	7.38	7.30	7.00	7.55	7.69			7.88	7.84		7.72	7.25		7.51	7.62		7.98	7.90	7.86	7.76					
11	7.72	7.90	8.02	7.38							7.88	7.84		7.72	7.26		7.51	7.62		7.98	7.91	7.86						
12	7.72	7.90	8.02	7.39							7.88	7.83			7.26		7.51	7.63		7.99	7.92	7.87						
13		7.90	8.03	7.39							7.88									7.99	7.92	7.87						
14				7.39																	7.93	7.87						

San Diego Bay - South													
	Freshwater-Influenced							Marina		Shallow			
Depth (m)	B13-8028	B13-8029	B13-8030	B13-8033	B13-8036	B13-8038	B13-8031	B13-8040	B13-8013	B13-8014	B13-8017	B13-8018	B13-8020
1	7.61	6.89	7.73	7.84	7.80	7.82	7.80	7.86	7.07	7.40	7.61	6.80	7.39
2	7.61	6.89	7.74	7.84	7.80	7.82	7.81	7.86	7.08	7.40	7.61		7.39
3	7.61	6.90	7.74	7.84	7.81	7.82	7.81	7.86	7.08	7.40	7.61		7.39
4	7.61	6.91	7.74	7.84	7.81	7.82	7.81	7.87					7.39
5	7.61	6.91	7.74	7.84	7.81	7.82	7.82						7.40
6	7.61	6.92	7.74	7.84	7.81	7.82	7.83						
7	7.61	6.93	7.74	7.84	7.81	7.82	7.83						
8	7.62		7.74	7.84	7.81	7.82	7.84						
9	7.62			7.84	7.81	7.82	7.84						
10	7.62				7.81	7.82	7.85						
11	7.62				7.81	7.83	7.85						
12					7.81	7.82	7.86						
13					7.81		7.86						

Notes:  
Ranges are based on binned depths (1-meter increments) at all stations. The number of data points available at each station varied from 1 to 15, depending on depth.  
Field meters were calibrated on a daily basis.

Table E-4. RHMP 2013 Water Quality Measurements for Dissolved Oxygen (mg/L)

Dana Point Harbor				
	Deep	Marina		Shallow
Depth (m)	B13-8263	B13-8259	B13-8267	B13-8265
1	7.2	7.0	6.2	7.3
2	6.6	6.7	6.0	6.8
3	7.3	7.5	5.4	7.4
4	7.8	7.1		7.9
5	8.3			

Oceanside Harbor			
	Deep	Marina	
Depth (m)	B13-8236	B13-8239	B13-8233
1	5.8	6.1	5.7
2	5.6	7.0	5.9
3	6.9	7.4	5.7
4	7.5	7.7	5.4
5	7.3	7.8	
6	7.3	7.8	
7		7.6	
8		7.2	

Mission Bay									
	Deep		Freshwater-Influenced		Marina		Shallow		
Depth (m)	B13-8145	B13-8152	B13-8160	B13-8163	B13-8146	B13-8151	B13-8156	B13-8157	B13-8159
1	7.6	8.2	5.6	6.1	7.6	7.6	8.2	6.6	6.1
2	7.6	8.3	5.3	6.2	7.7	8.7	8.7	6.5	5.8
3	7.7	8.3	5.1		7.7	10.3	10.1	6.4	5.3
4	7.6	8.3			7.6				3.6
5	7.4	8.5			7.6				
6	7.1	8.6			7.5				
7	7.1				6.3				
8	7.0				4.9				

San Diego Bay - North																		
	Deep							Marina							Shallow			
Depth (m)	B13-8085	B13-8108	B13-8109	B13-8111	B13-8112	B13-8118	B13-8122	B13-8102	B13-8106	B13-8113	B13-8116	B13-8117	B13-8121	B13-8127	B13-8105	B13-8123	B13-8124	B13-8128
1	7.1	7.1	7.4	5.4	5.6	7.7	7.7	7.0	7.1	6.8	6.5	6.9	5.5	6.1	6.4	5.9	5.5	5.1
2	7.0	7.1	7.4	5.1	5.4	7.7	7.7	7.0	7.0	6.8	6.0	6.1	6.0	6.0	6.6	5.9	5.7	5.1
3	7.0	7.2	7.3	5.3	5.2	7.5	7.7	7.1	7.3	5.8	3.4	6.4	6.5	5.6	6.6	6.1	6.0	5.1
4	7.0	7.2	7.3	5.6	5.9	7.3	7.2	7.3	7.2	3.9		2.9		5.0		6.2	5.8	5.7
5	6.9	6.3	7.0	5.7	6.0	7.1	6.8	7.4	6.7			1.0				6.0		5.7
6	6.8		7.1	5.7	6.0	7.2		7.1				0.8						
7	7.2		7.0	5.8	6.0	7.2												
8	7.2		6.8	5.9	6.2	7.1												
9	7.2		7.0	5.8	6.5	6.7												
10	7.3		7.1	5.7	6.5	6.8												
11	7.3		7.2	4.6	6.4	6.8												
12	7.2		7.2		6.5													
13	7.3																	
14	7.3																	
15	7.3																	

	San Diego Bay - Central																											
	Deep				Freshwater-Influenced					Marina	Industrial/Port										Shallow							
Depth (m)	B13-8045	B13-8078	B13-8087	B13-8093	B13-8074	B13-8075	B13-8076	B13-8077	B13-8500	B13-8073	B13-8049	B13-8050	B13-8053	B13-8056	B13-8064	B13-8065	B13-8066	B13-8069	B13-8090	B13-8095	B13-8096	B13-8098	B13-8099	B13-8100	B13-8058	B13-8060	B13-8052	B13-8068
1	6.1	7.5	8.0	7.0	6.2	5.8	5.5	6.0	5.9	8.5	6.2	6.2	6.4	6.4	5.9	5.7	5.8	6.2	5.1	7.5	7.5	7.4	6.9	7.4	5.9	6.6	6.3	6.4
2	5.9	7.9	8.1	7.3	5.5	5.5	5.8	5.7	5.4	6.6	5.9	5.9	6.0	5.8	5.9	5.5	22.8	6.1	4.9	7.7	7.7	7.5	7.0	7.4	5.8	6.5	6.3	6.2
3	5.7	7.9	8.2	7.1	6.1	5.9	6.1	5.5	5.5	5.2	6.2	6.0	5.8	6.1	6.1	5.8	5.9	6.2	5.0	7.8	7.8	7.6	7.0	7.3	6.0	6.3	6.3	6.2
4	6.1	7.9	7.7	7.0	6.3	6.2	6.2	5.8	6.0	4.4	6.6	6.6	5.8	6.6	6.4	6.1	6.2	6.3	6.1	7.3	7.5	7.6	7.1	7.2	6.4	6.3	6.3	6.7
5	6.1	8.0	7.2	6.8	6.3	6.3	6.2	5.7	5.9	4.7	6.6	6.6	5.9	6.5	6.4	6.1	6.2	6.2	6.6	6.9	6.7	7.4	6.7	7.0	6.3			6.4
6	5.8	7.5	7.2	7.0	6.3	6.3	6.2	5.5			6.6	6.6		6.4	6.4	6.1	6.2	6.1	6.4	6.4	6.5	7.0	6.4	6.8				
7	5.9	7.0	7.1	6.4	6.2	6.2	6.2	5.6			6.7	6.6		6.3	6.4	6.0	6.2	5.9	6.2	6.3	6.7	6.9	6.3	6.8				
8	6.0	6.9	7.0	6.7	6.1	6.1	6.2	5.5			6.4	6.5		6.4	6.3		6.3	5.9	5.7	6.3	6.9	6.7	6.5	6.6				
9	5.8	6.7	6.8	6.7	5.9	5.9	6.2	5.5			6.3	6.3		6.2	6.2		6.2	5.9		6.3	6.9	6.8	6.5	6.4				
10	5.5	6.7	6.8	6.8	5.7	5.8	6.0	5.1			6.3	6.3		6.1	6.0		6.2	6.0		6.4	6.7	6.6	6.5					
11	5.5	6.6	6.7	6.9							6.2	6.2		4.3	5.8		6.2	6.0		6.7	6.6	6.6						
12	5.5	6.5	6.7	6.9							6.2	6.2			4.8		5.5	6.0		6.7	6.8	6.7						
13		6.5	6.7	6.9							6.2									6.4	6.7	6.8						
14				6.9																	6.7	6.7						

San Diego Bay - South													
	Freshwater-Influenced								Marina		Shallow		
Depth (m)	B13-8028	B13-8029	B13-8030	B13-8033	B13-8036	B13-8038	B13-8031	B13-8040	B13-8013	B13-8014	B13-8017	B13-8018	B13-8020
1	6.6	6.2	7.0	7.4	6.8	7.2	6.4	6.9	5.6	5.8	6.5	5.5	6.5
2	6.6	6.2	6.9	7.3	6.7	7.1	6.1	6.7	5.6	5.9	6.3		6.5
3	6.6	6.2	6.6	7.2	6.6	7.1	6.4	6.4	5.6	5.9	6.2		6.5
4	6.5	6.2	6.4	7.2	6.4	7.0	6.1	6.2					6.5
5	6.4	6.2	6.4	6.9	6.3	6.9	5.7						6.4
6	6.4	6.2	6.4	6.0	6.2	6.8	5.8						
7	6.4	6.2	6.2	5.7	6.2	6.6	5.8						
8	6.4		6.2	5.6	6.2	6.2	5.8						
9	6.4			5.5	6.2	6.1	5.8						
10	6.3				6.1	6.1	5.7						
11	6.2				6.0	5.8	5.6						
12					5.5	5.9	5.6						
13					5.2		5.6						

Notes:  
Ranges are based on binned depths (1-meter increments) at all stations. The number of data points available at each station varied from 1 to 15, depending on depth.  
mg/L = milligrams per liter  
Field meters were calibrated on a daily basis.

Table E-5. RHMP 2013 Water Quality Measurements for Transmissivity (%)

Dana Point Harbor				
	Deep	Marina		Shallow
Depth (m)	B13-8263	B13-8259	B13-8267	B13-8265
1	66.6	70.7	52.8	72.0
2	67.1	68.1	52.0	72.0
3	59.8	49.6	46.2	61.1
4	57.7	34.8		43.0
5	51.2			

	Deep		Marina
Depth (m)	B13-8236	B13-8239	B13-8233
1	76.4	70.0	79.6
2	69.1	69.8	74.8
3	67.2	70.4	61.3
4	69.6	71.9	50.5
5	66.7	72.6	
6	46.8	67.0	
7		59.3	
8		51.9	

Mission Bay									
	Deep		Freshwater-Influenced		Marina		Shallow		
Depth (m)	B13-8145	B13-8152	B13-8160	B13-8163	B13-8146	B13-8151	B13-8156	B13-8157	B13-8159
1	77.9	73.1	31.7	84.3	82.7	73.9	69.4	66.9	33.0
2	78.7	74.4	28.9	84.2	81.8	74.2	69.1	67.8	32.9
3	77.6	74.6	22.7		79.2	74.0	65.0	68.7	33.4
4	76.4	74.8			76.3				36.0
5	75.7	75.2			73.4				
6	71.5	75.9			73.5				
7	69.1				72.1				
8	69.0				66.1				

San Diego Bay - North																		
	Deep							Marina						Shallow				
Depth (m)	B13-8085	B13-8108	B13-8109	B13-8111	B13-8112	B13-8118	B13-8122	B13-8102	B13-8106	B13-8113	B13-8116	B13-8117	B13-8121	B13-8127	B13-8105	B13-8123	B13-8124	B13-8128
1	71.1	71.3	76.7	71.9	68.0	73.2	70.3	77.0	73.4	77.4	74.9	74.5	55.7	74.2	58.2	65.5	59.5	66.5
2	69.3	72.4	76.9	72.3	69.0	75.0	71.0	78.2	74.7	78.2	66.2	73.8	49.5	67.8	57.4	64.6	59.0	65.4
3	68.6	71.4	76.9	72.7	69.1	74.8	68.4	74.3	71.1	73.0	57.5	68.2	49.5	54.2	53.8	63.8	55.7	60.4
4	70.9	59.4	76.9	72.5	66.1	73.6	62.9	62.8	59.0	53.7		61.8		27.8		60.3	50.2	56.3
5	73.5	46.1	77.0	72.6	62.7	72.8	53.2	66.7	51.1			35.6				55.6		54.2
6	73.0		76.9	72.6	60.0	70.4		62.2				28.1						
7	72.4		76.2	72.2	57.6	72.1												
8	75.7		73.7	70.4	55.0	74.0												
9	77.0		71.4	66.3	46.9	75.1												
10	77.6		69.7	57.7	40.7	70.4												
11	78.3		69.8	38.2	37.5	59.7												
12	78.5		69.7		38.4													
13	78.9																	
14	79.3																	
15	79.5																	

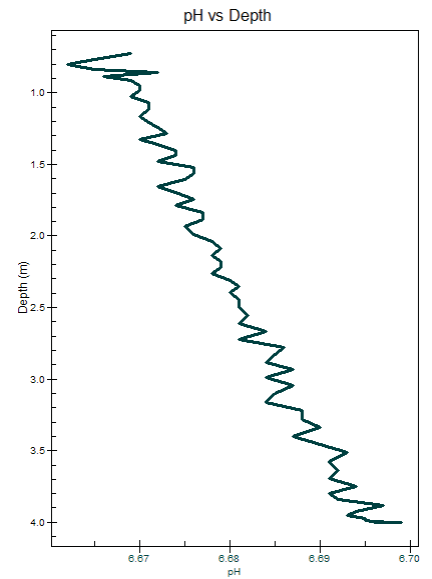
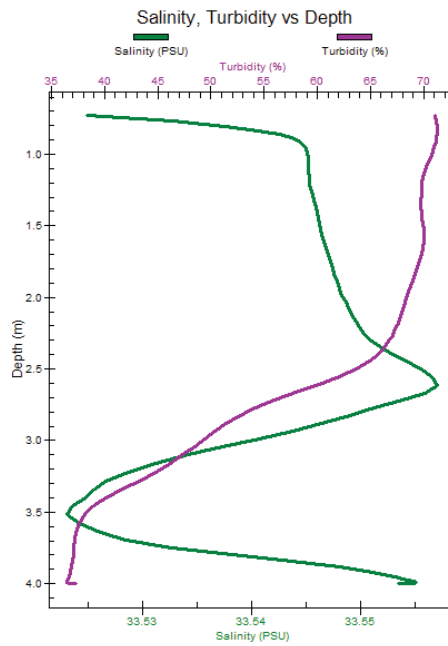
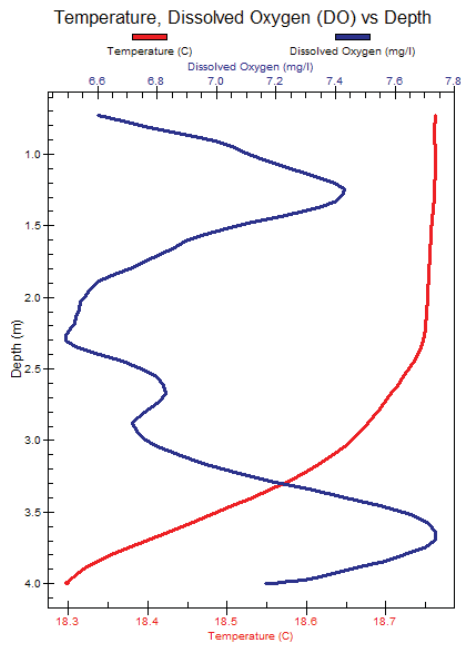
San Diego Bay - Central																												
	Deep				Freshwater-Influenced					Marina	Industrial/Port										Shallow							
Depth (m)	B13-8045	B13-8078	B13-8087	B13-8093	B13-8074	B13-8075	B13-8076	B13-8077	B13-8500	B13-8073	B13-8049	B13-8050	B13-8053	B13-8056	B13-8064	B13-8065	B13-8066	B13-8069	B13-8090	B13-8095	B13-8096	B13-8098	B13-8099	B13-8100	B13-8058	B13-8060	B13-8052	B13-8068
1	67.2	72.5	65.6	61.2	76.9	77.0	78.7	75.7	64.9	43.4	66.1	65.6	71.2	64.4	77.4	78.4	67.8	71.3	79.9	68.0	69.6	71.5	74.2	74.9	43.7	53.9	44.9	59.9
2	67.4	71.5	65.1	62.5	77.7	77.4	78.6	75.7	65.1	52.5	66.4	65.7	72.0	66.7	77.6	76.6	22.8	69.9	79.1	68.6	69.4	71.6	74.8	75.2	43.9	52.2	45.2	60.5
3	67.3	68.8	63.7	66.7	77.2	77.4	79.1	75.2	62.6	56.2	66.9	65.9	73.3	66.9	77.4	76.1	67.3	70.8	73.9	67.1	68.2	71.3	74.1	75.5	44.3	44.2	45.6	61.2
4	67.1	66.4	61.6	65.9	77.4	77.4	75.1	74.6	60.8	49.0	67.7	65.9	70.8	66.7	77.2	75.7	66.7	70.3	69.9	65.1	68.3	71.0	73.7	75.8	44.4	29.8	46.9	58.1
5	67.3	64.9	62.4	65.9	78.0	77.6	72.4	75.2	59.3	44.8	69.0	65.8	66.9	67.1	76.9	75.7	66.3	69.7	69.0	68.9	68.8	71.2	72.4	75.7	44.8			49.2
6	67.9	66.4	69.5	69.5	78.4	77.6	72.0	75.6			70.6	66.2		67.9	76.5	75.5	66.2	69.6	69.3	71.7	71.8	72.9	69.8	74.8				
7	66.7	69.3	73.0	69.1	78.6	77.8	71.9	75.2			71.0	66.5		68.5	76.1	75.6	66.8	68.5	69.9	74.6	72.3	74.5	66.6	74.4				
8	65.6	71.8	75.1	60.4	76.0	77.2	72.1	74.8			71.2	66.7		68.0	75.9		66.8	65.3	66.1	76.1	73.2	75.6	68.2	73.9				
9	65.0	73.8	76.3	60.9	69.0	75.6	72.9	74.0			70.1	69.0		66.0	75.3		65.6	61.1		76.5	74.4	76.3	71.3	70.9				
10	65.7	74.5	77.2	68.0	53.1	71.8	73.2	71.6			69.9	70.5		63.4	71.6		61.9	58.5		75.0	75.4	74.7	71.2	70.9				
11	72.9	74.0	77.2	71.4							65.8	69.6		60.6	61.5		61.0	60.3		73.4	74.1	72.4						
12	76.4	72.2	76.8	69.3							61.6	65.9			57.0		59.8	59.8		73.3	74.2	72.3						
13		71.0	76.5	68.5							60.8									73.9	75.7	73.4						
14				69.5																	75.7	75.6						

San Diego Bay - South													
	Freshwater-Influenced							Marina		Shallow			
Depth (m)	B13-8028	B13-8029	B13-8030	B13-8033	B13-8036	B13-8038	B13-8031	B13-8040	B13-8013	B13-8014	B13-8017	B13-8018	B13-8020
1	72.0	66.6	68.8	62.0	67.2	68.1	64.0	69.6	22.8	65.1	48.9	68.9	49.3
2	71.9	66.6	69.0	62.1	66.9	68.3	64.7	70.8	22.9	64.3	48.1		48.9
3	70.9	66.6	69.7	61.8	66.6	68.3	65.5	69.7	22.5	61.2	44.4		47.9
4	69.7	66.0	69.2	62.7	67.2	68.0	68.5	64.8					47.1
5	69.7	65.8	69.3	64.9	68.8	67.8	70.3						46.0
6	69.1	65.3	69.3	71.8	69.8	68.1	70.0						
7	66.7	63.1	69.4	77.4	70.3	68.4	69.5						
8	66.4		68.8	71.4	70.1	67.9	66.1						
9	66.8			57.4	69.4	63.7	66.6						
10	67.1				66.2	63.1	68.2						
11	67.1				60.7	63.0	70.4						
12					56.7	58.4	70.5						
13					49.8		69.3						

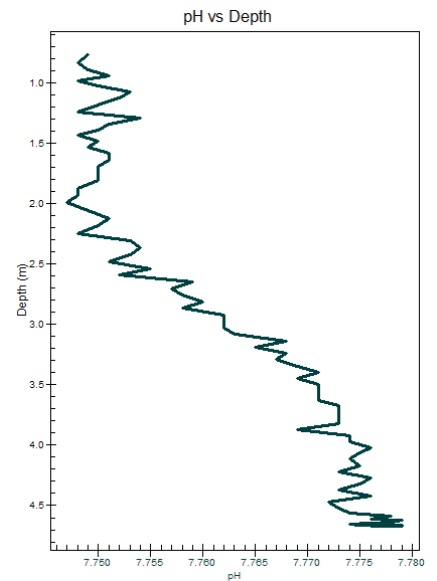
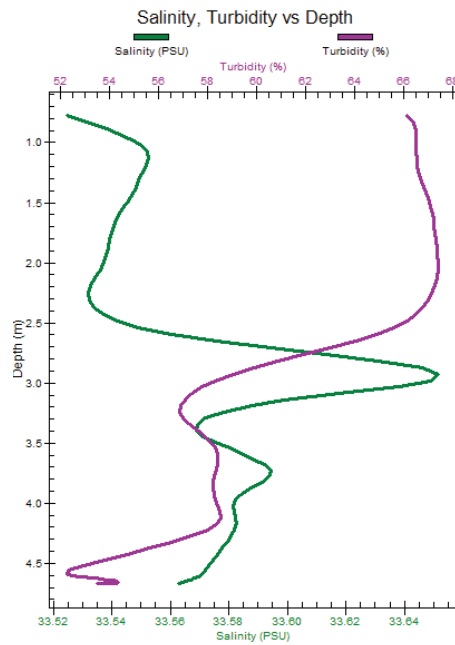
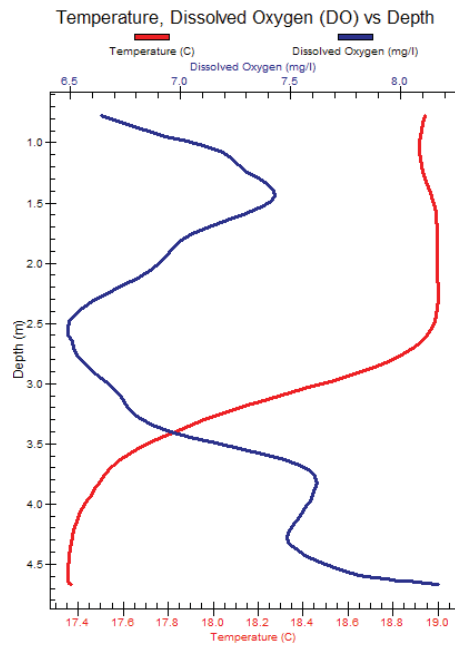
Notes:  
Ranges are based on binned depths (1-meter increments) at all stations. The number of data points available at each station varied from 1 to 15, depending on depth.  
% = percent  
Field meters were calibrated on a daily basis.

# CTD Profiles

### Dana Point Harbor, B13-8259



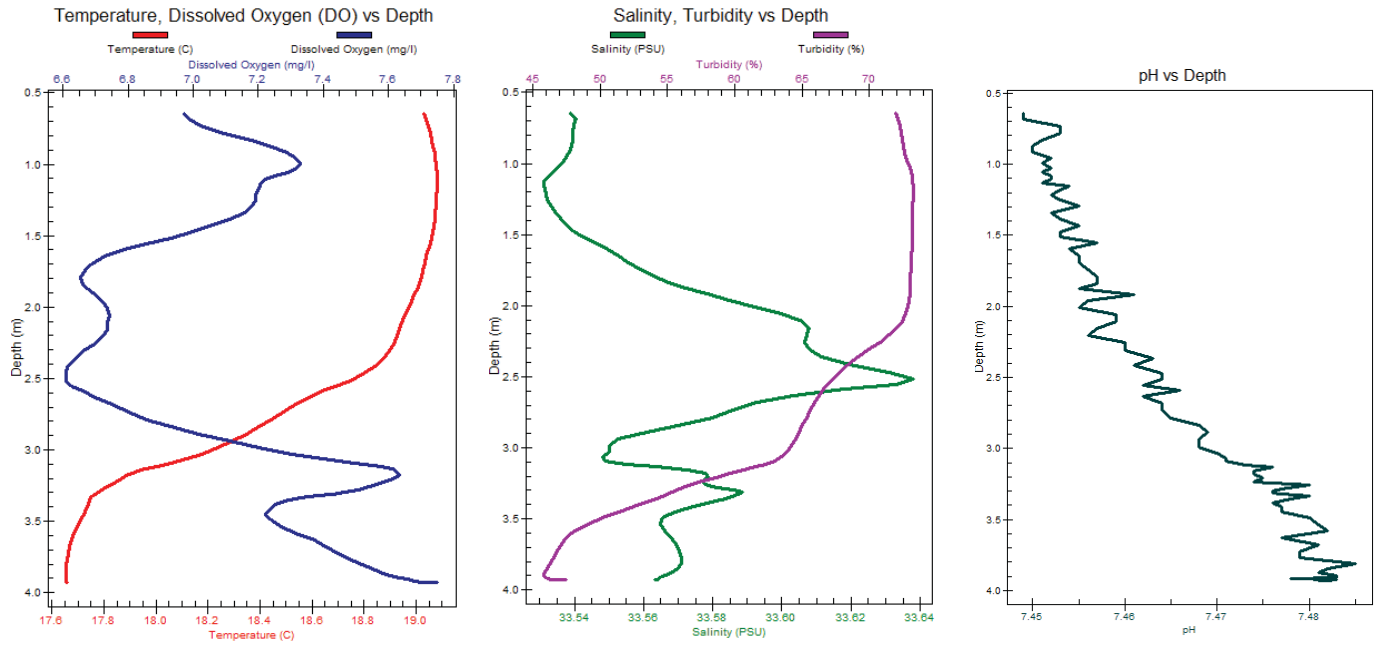
### Dana Point Harbor, B13-8263



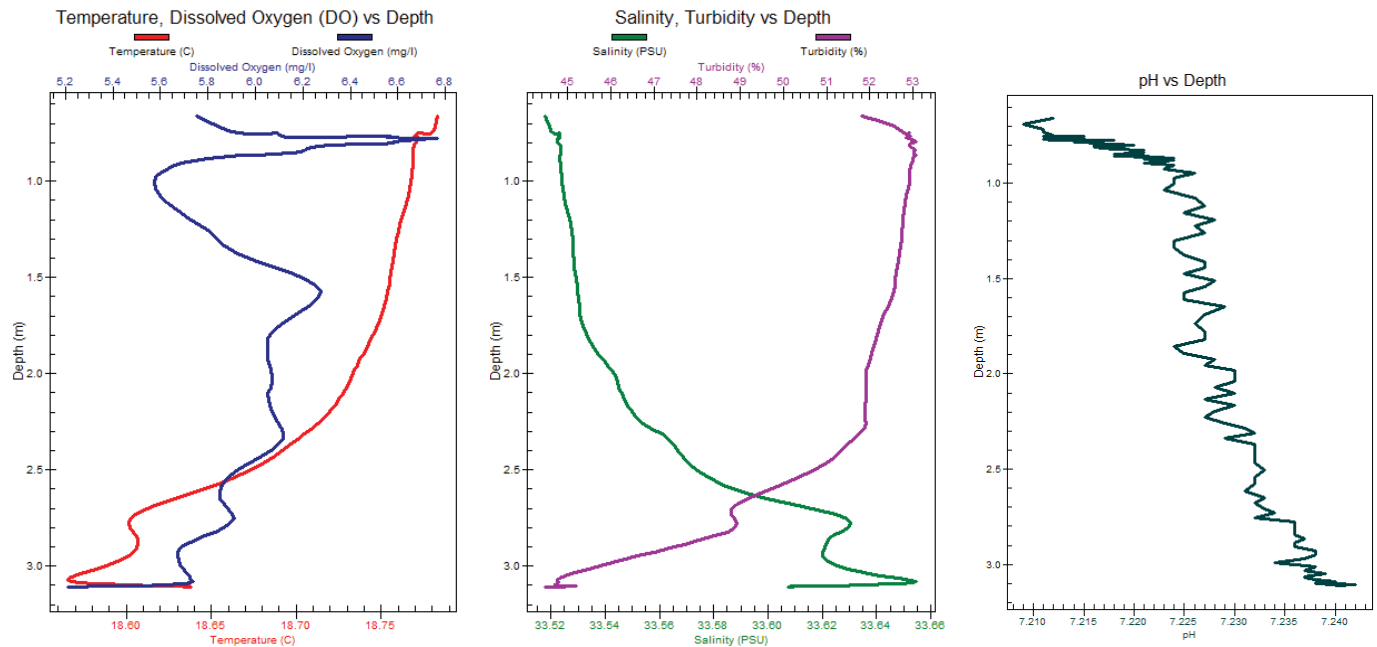
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



### Dana Point Harbor, B13-8265



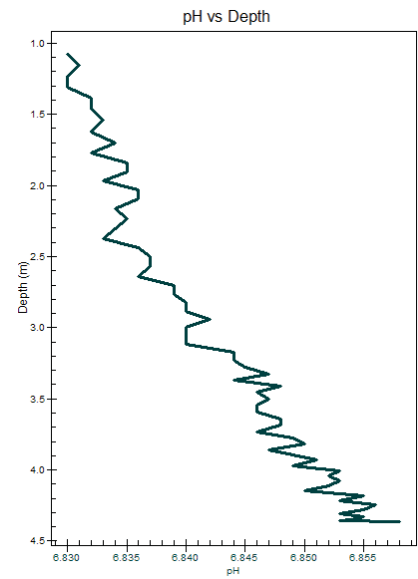
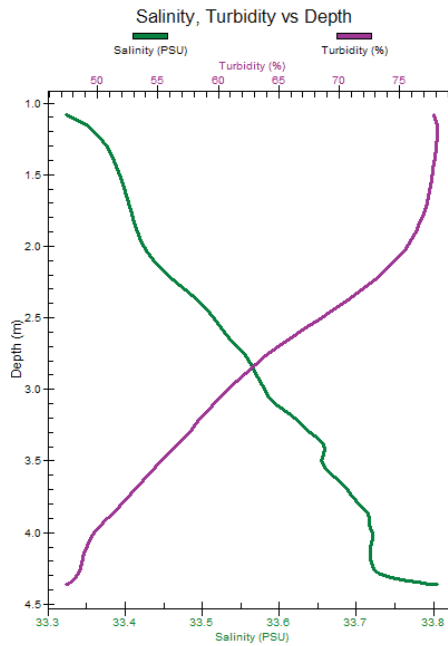
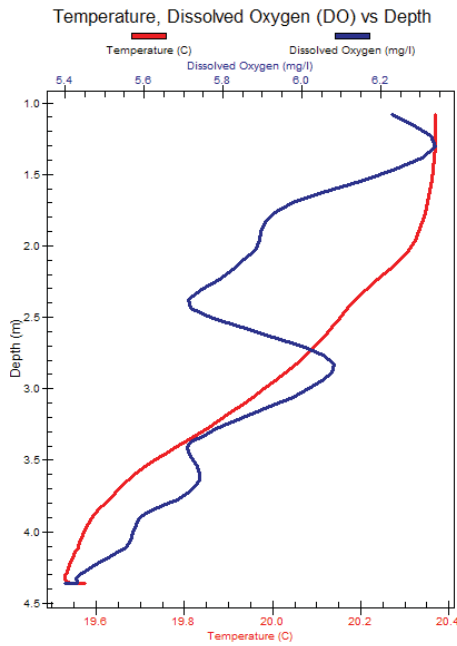
### Dana Point Harbor, B13-8267



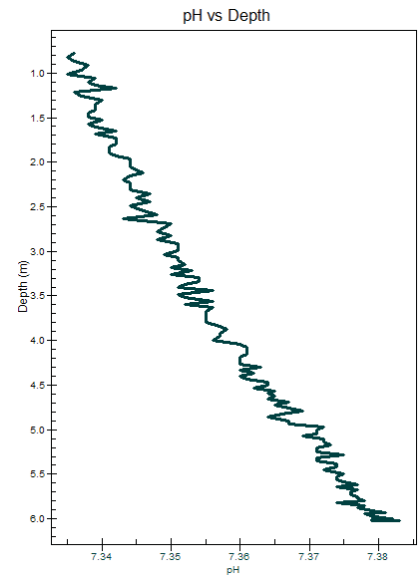
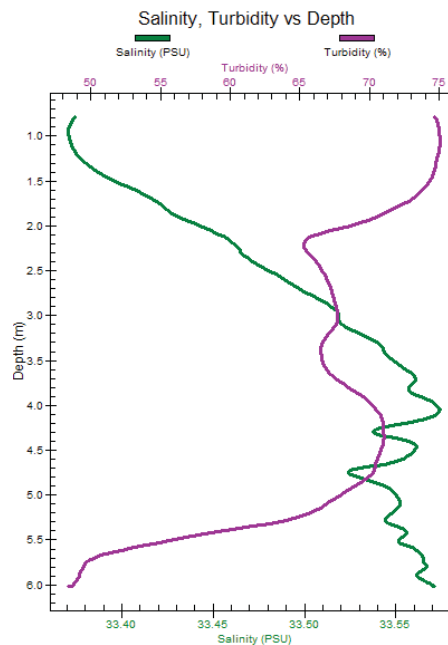
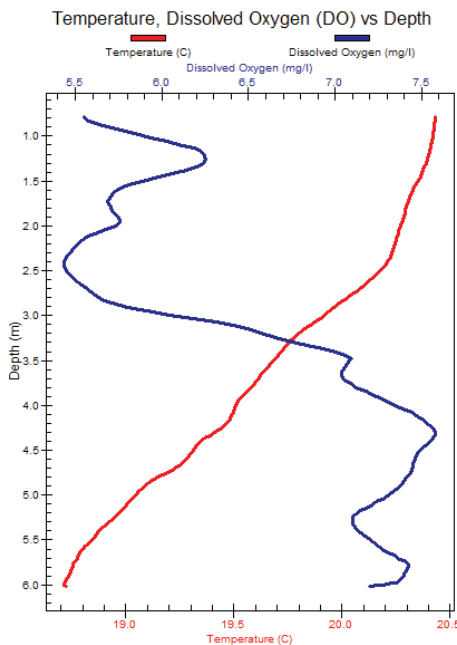
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



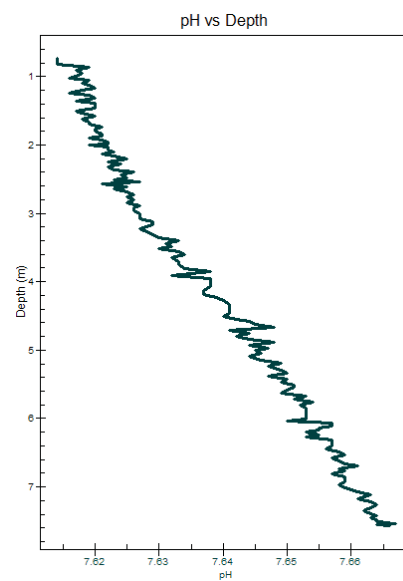
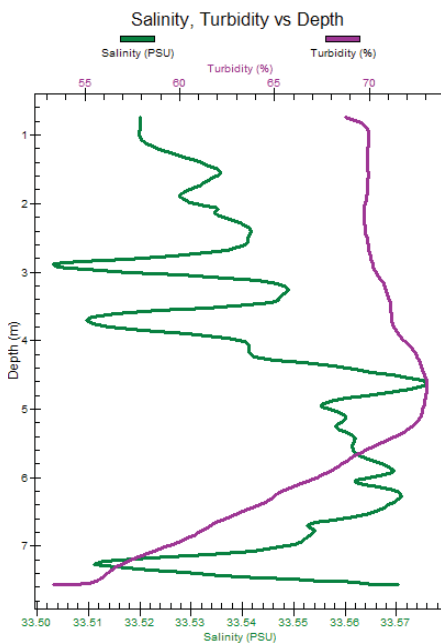
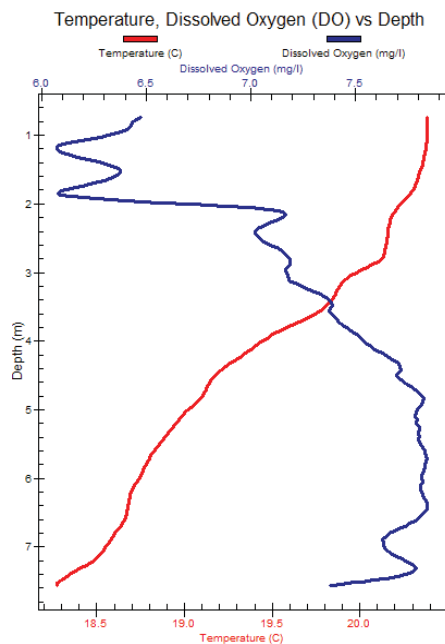
### Oceanside Harbor, B13-8233



### Oceanside Harbor, B13-8236



## Oceanside Harbor, B13-8239

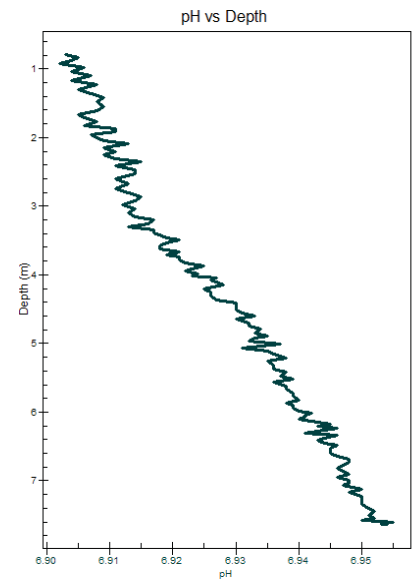
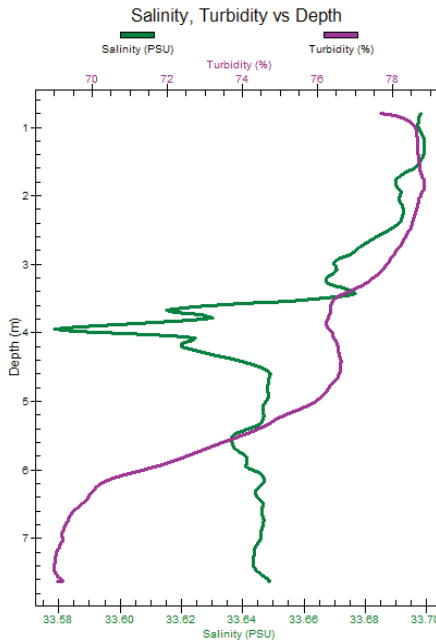
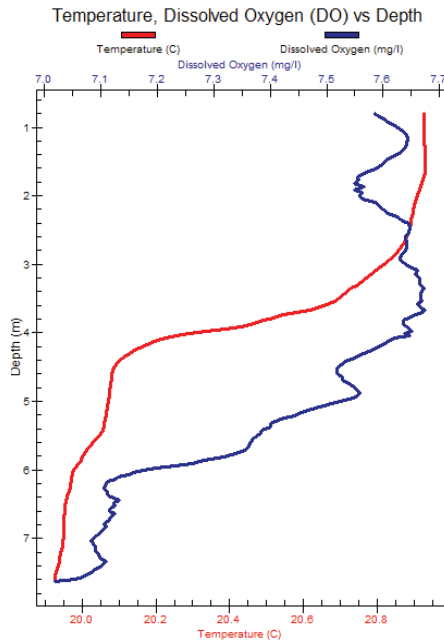


Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013

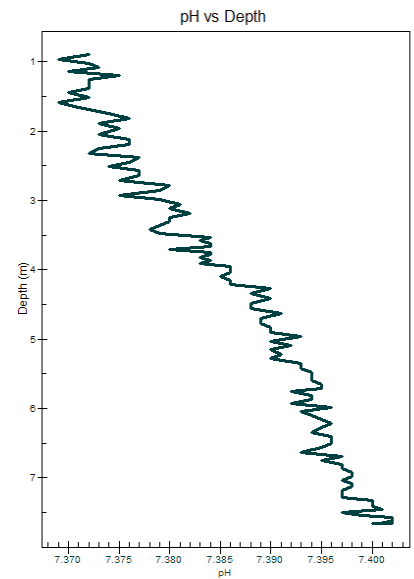
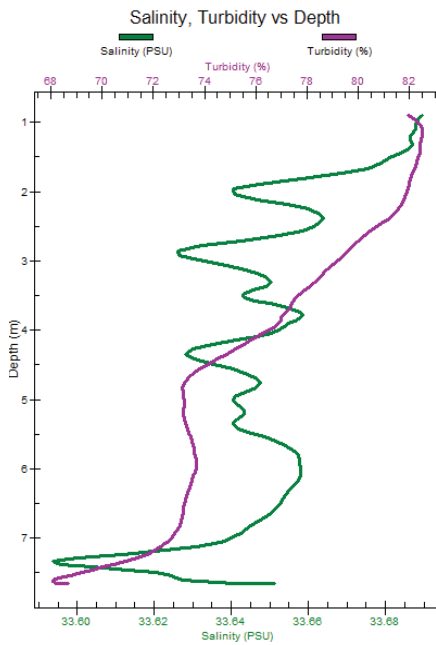
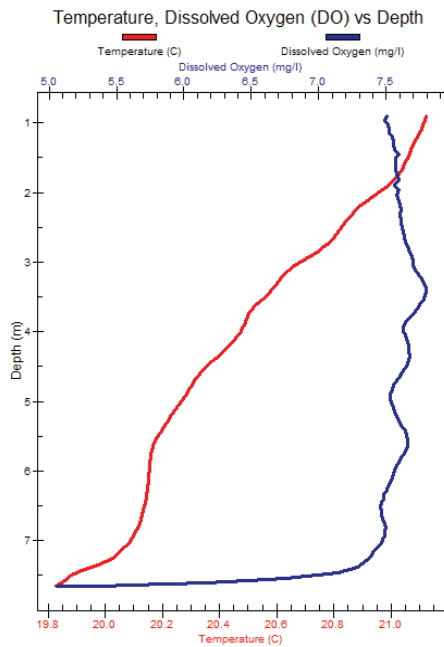




### Mission Bay, B13-8145



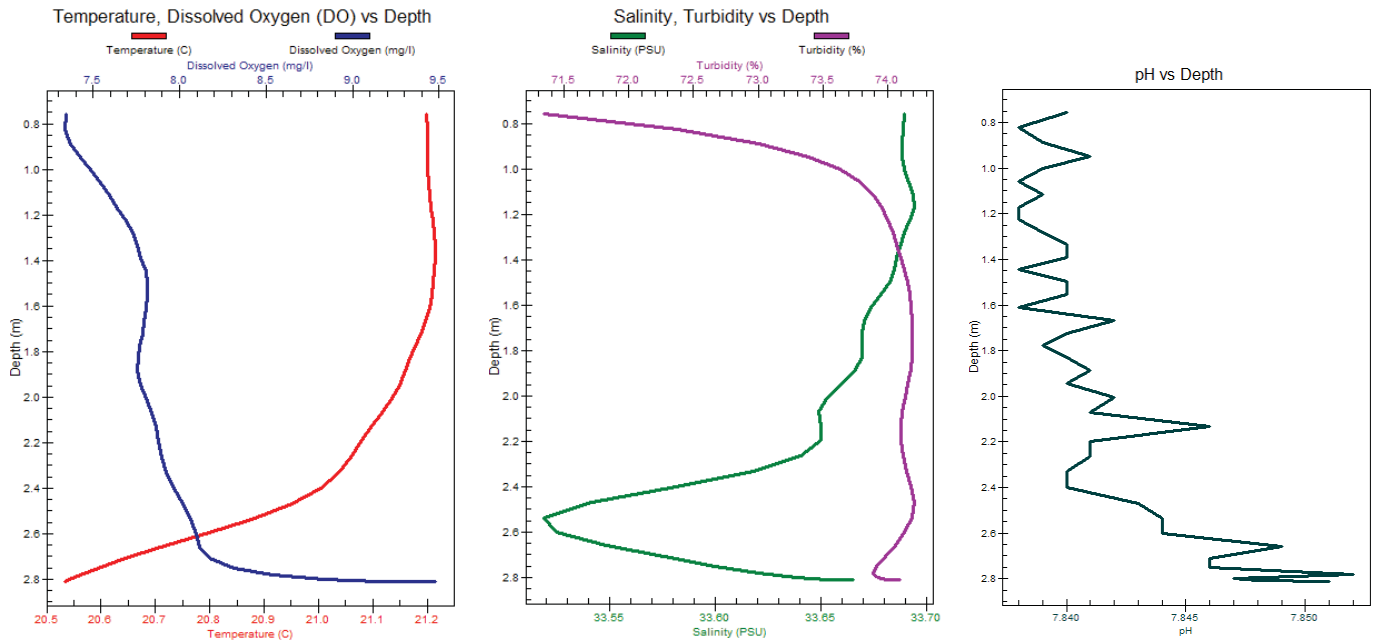
### Mission Bay, B13-8146



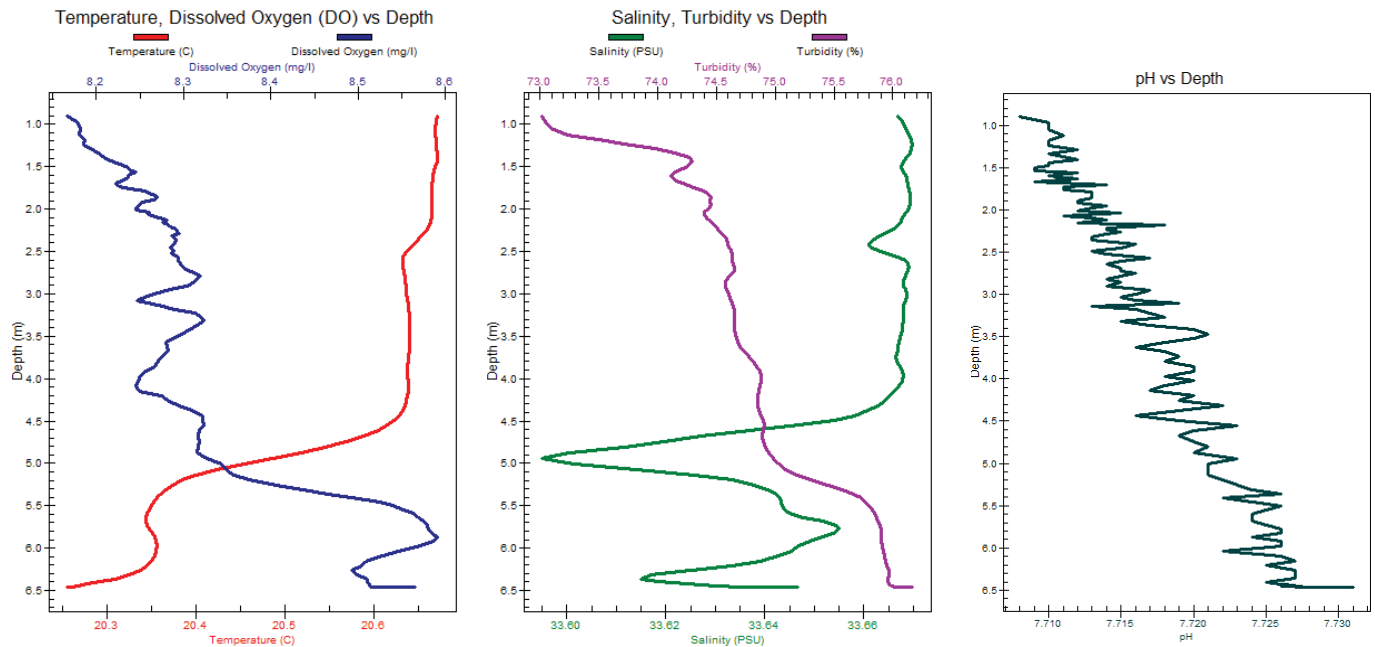
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



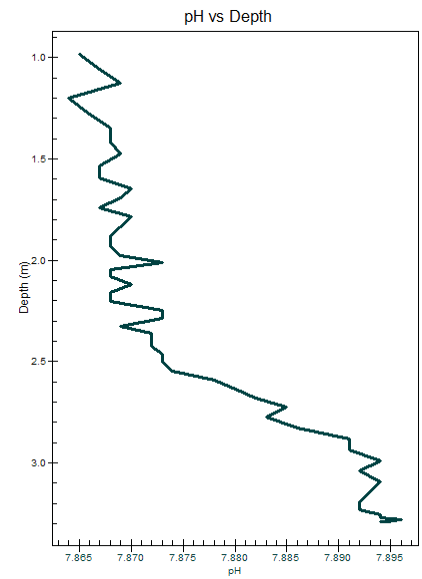
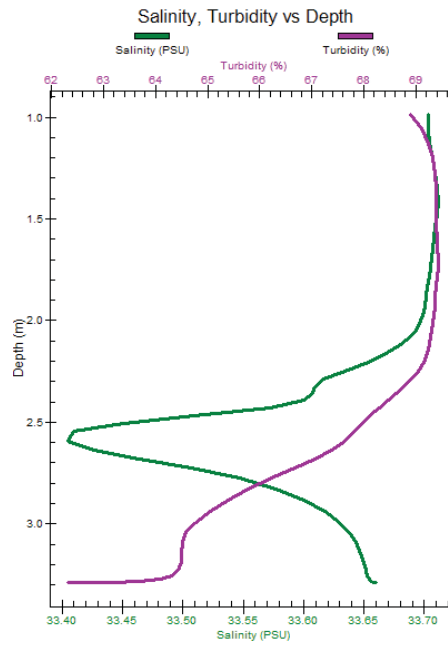
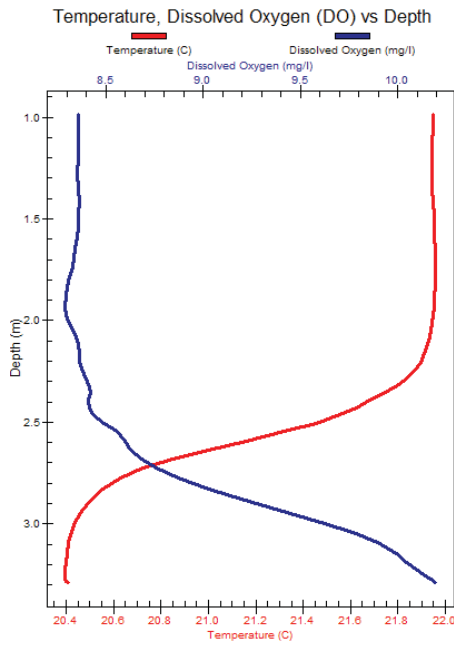
### Mission Bay, B13-8151



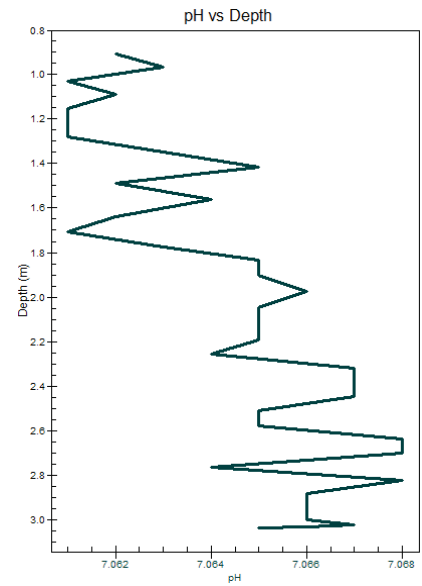
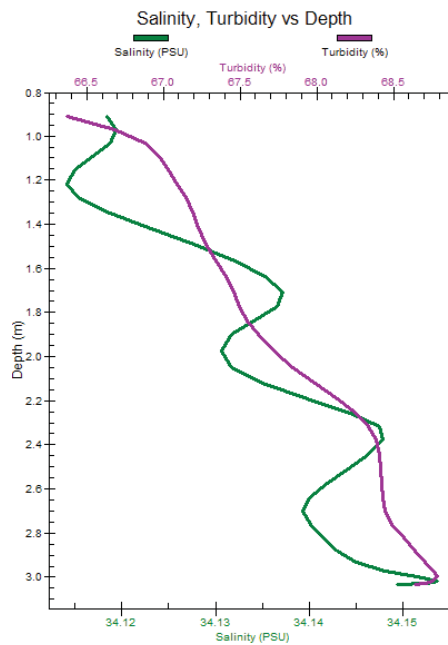
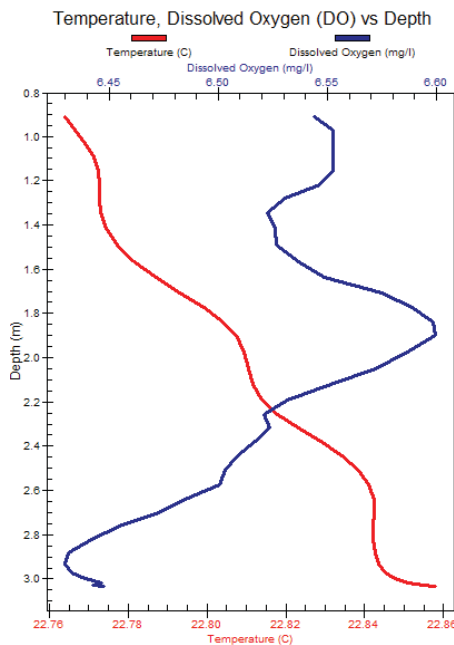
### Mission Bay, B13-8152



### Mission Bay, B13-8156



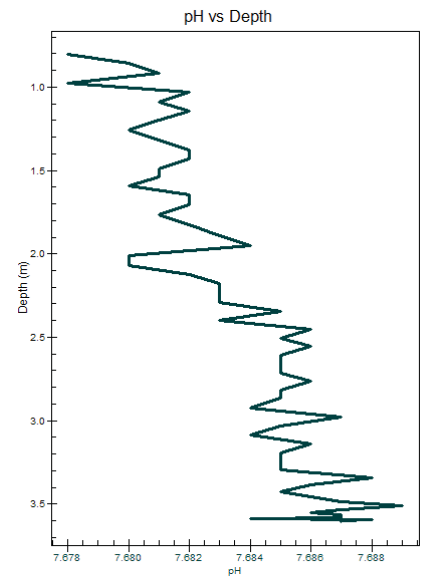
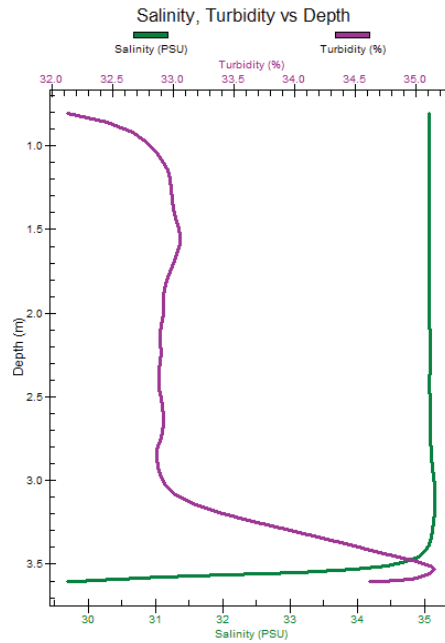
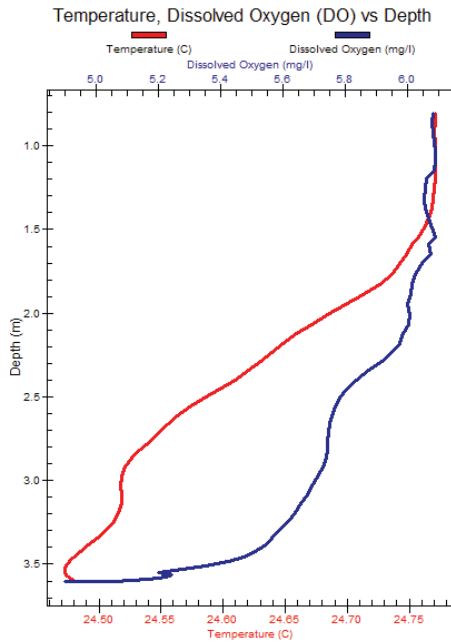
### Mission Bay, B13-8157



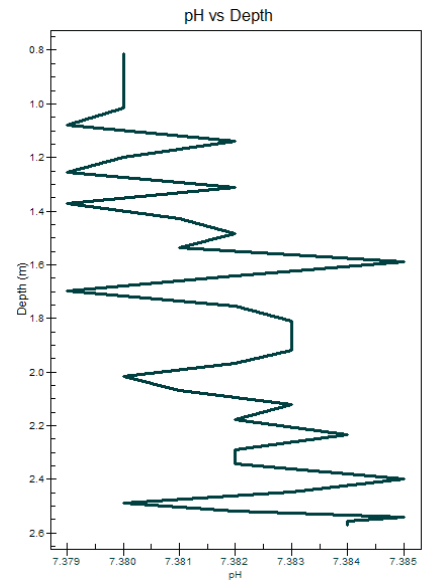
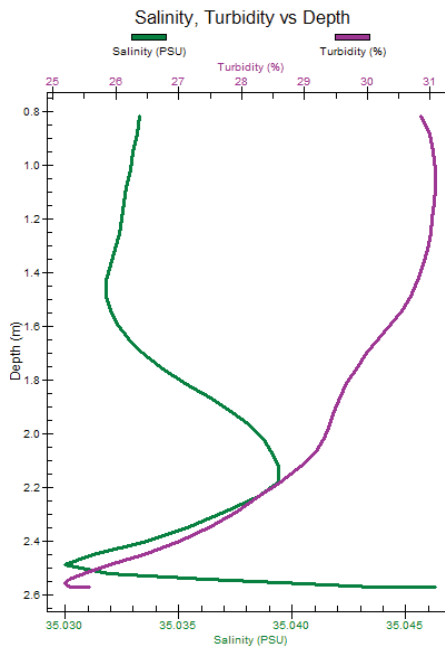
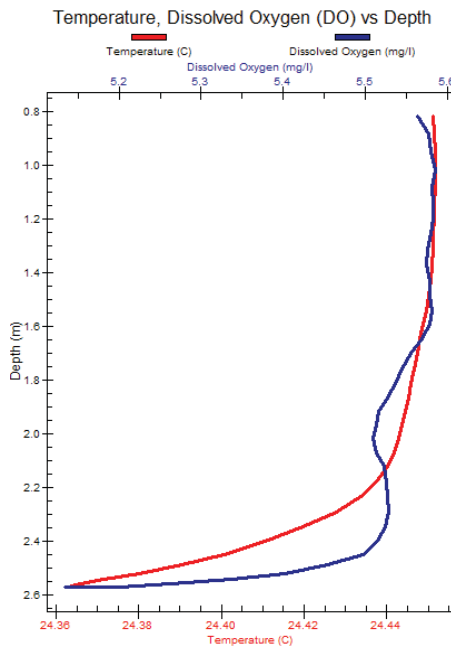
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



### Mission Bay, B13-8159

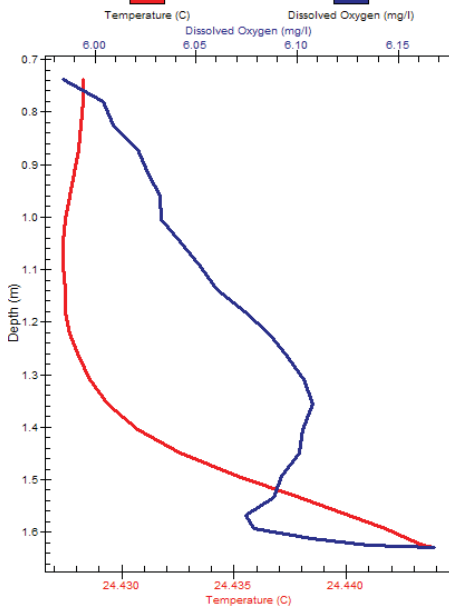


### Mission Bay, B13-8160

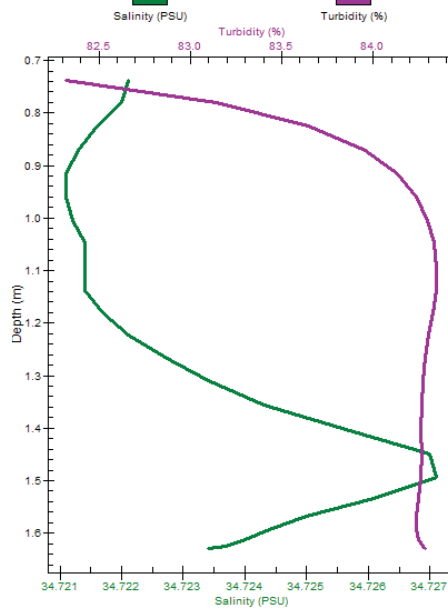


## Mission Bay, B13-8163

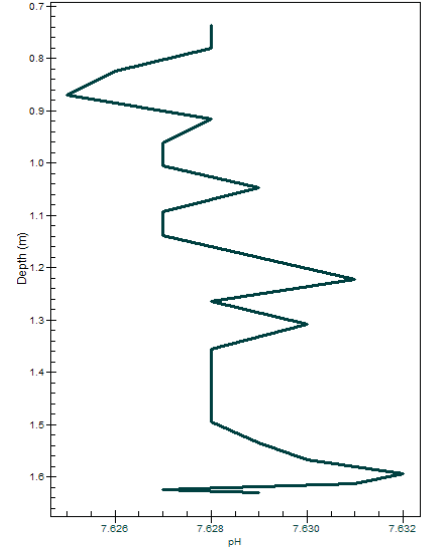
Temperature, Dissolved Oxygen (DO) vs Depth



Salinity, Turbidity vs Depth

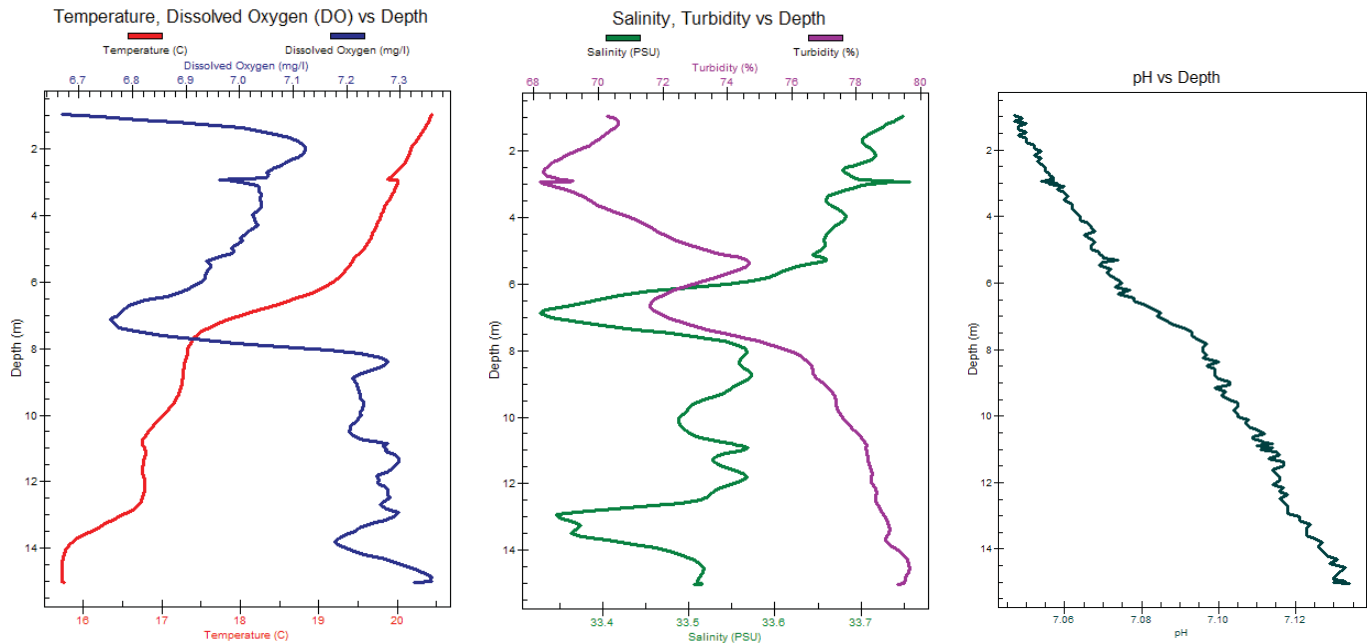


pH vs Depth

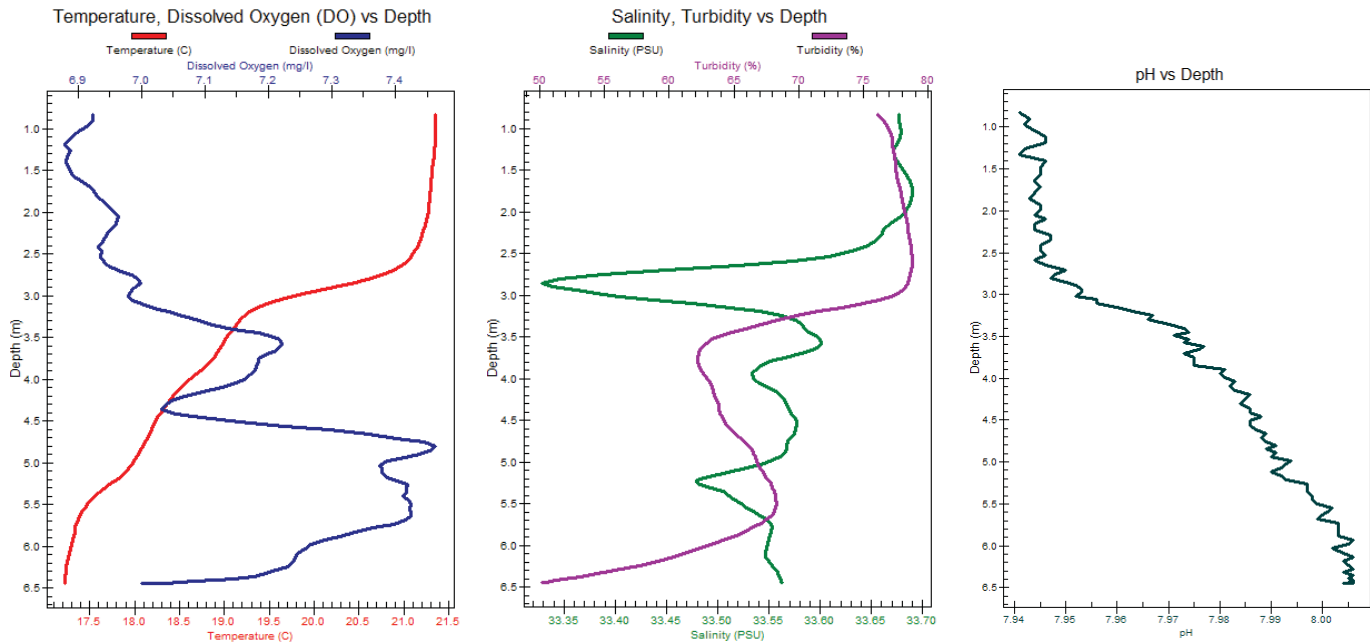


Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013

### San Diego Bay – North, B13-8085



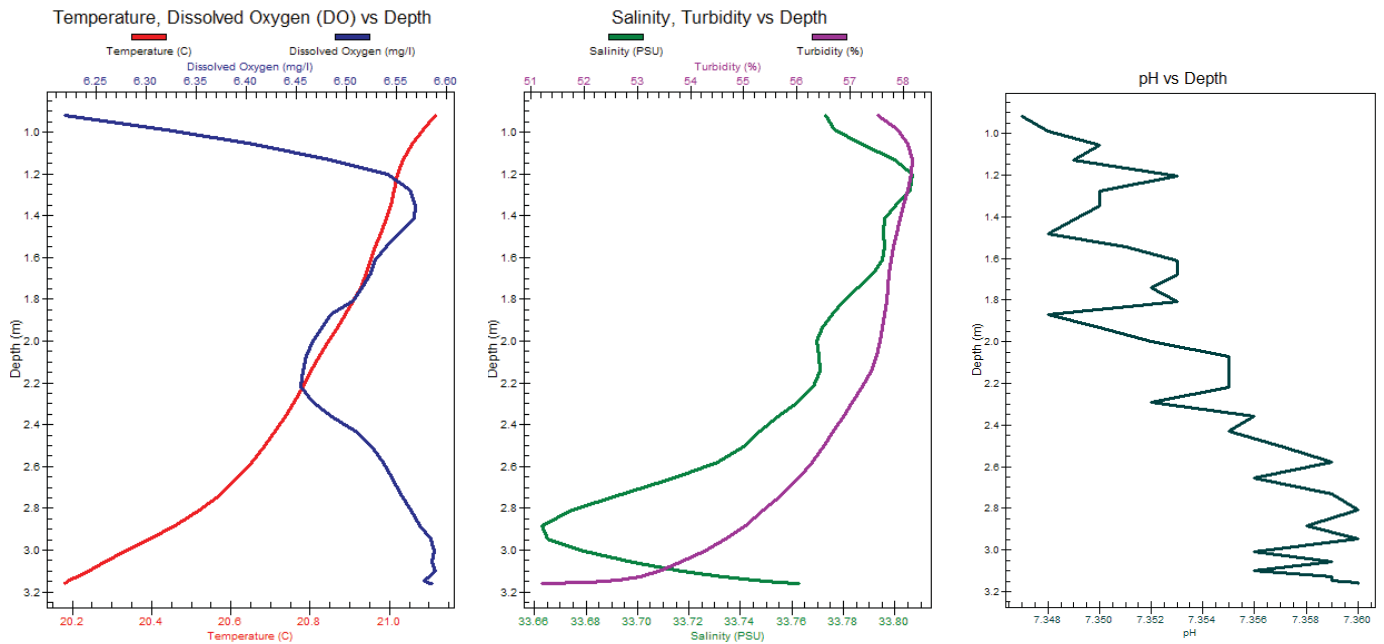
### San Diego Bay – North, B13-8102



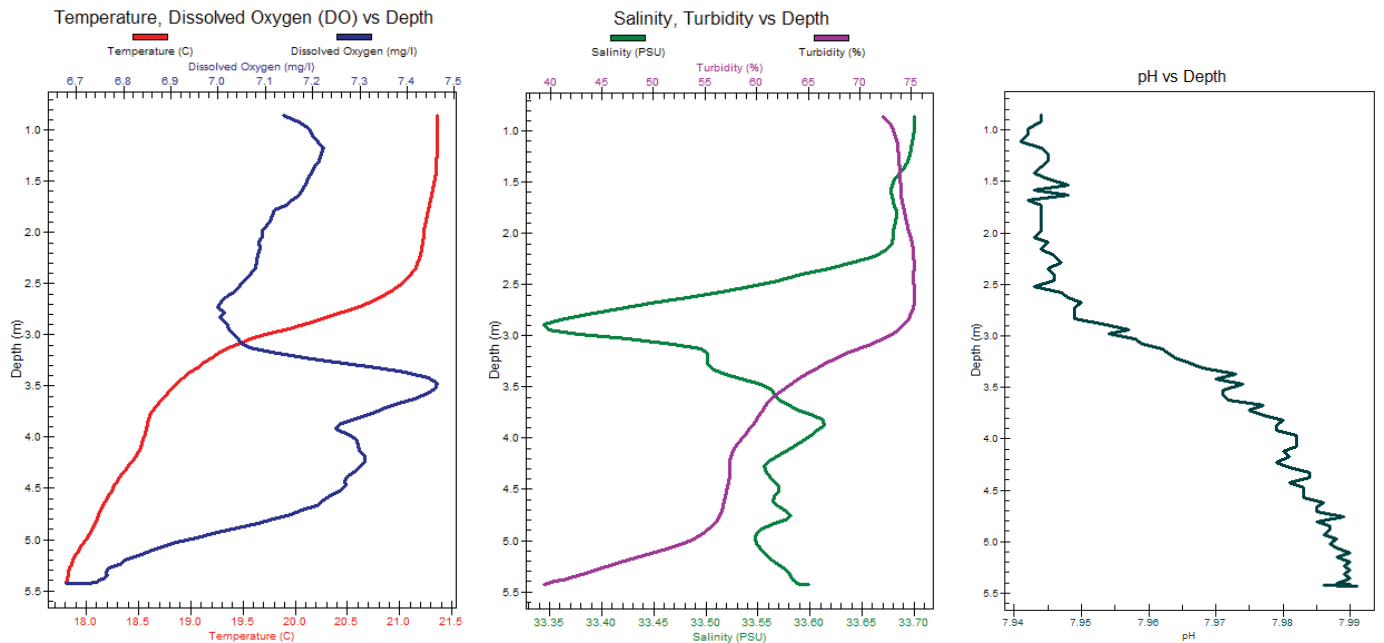
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North, B13-8105



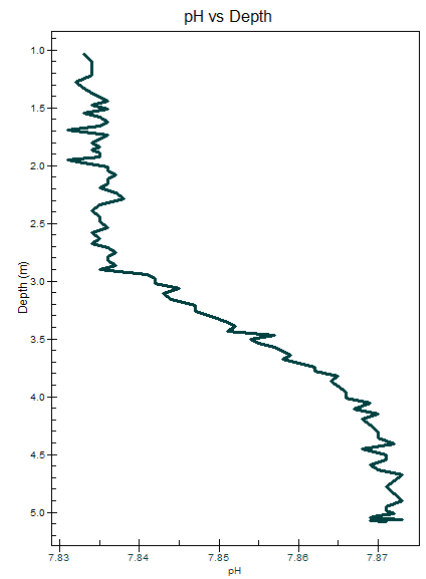
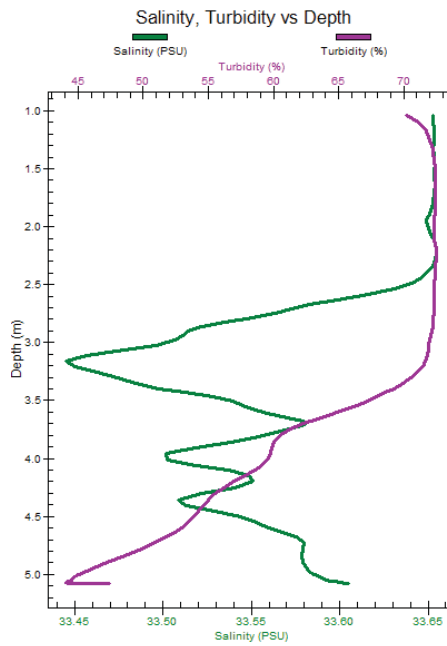
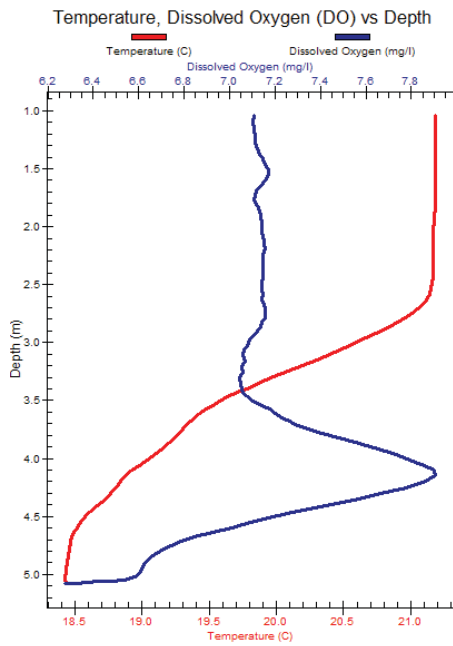
### San Diego Bay – North, B13-8106



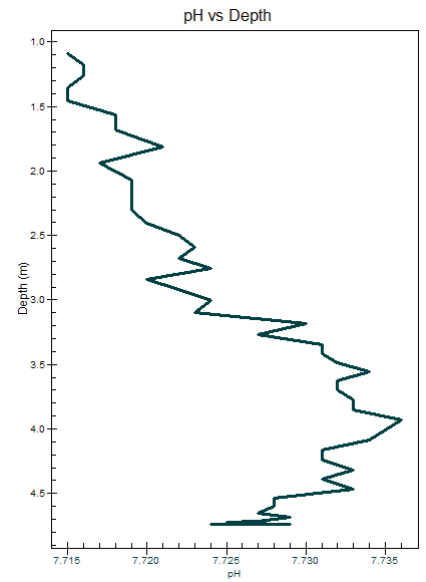
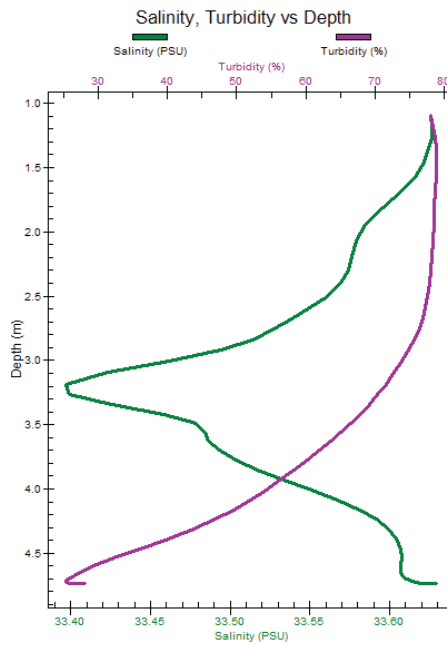
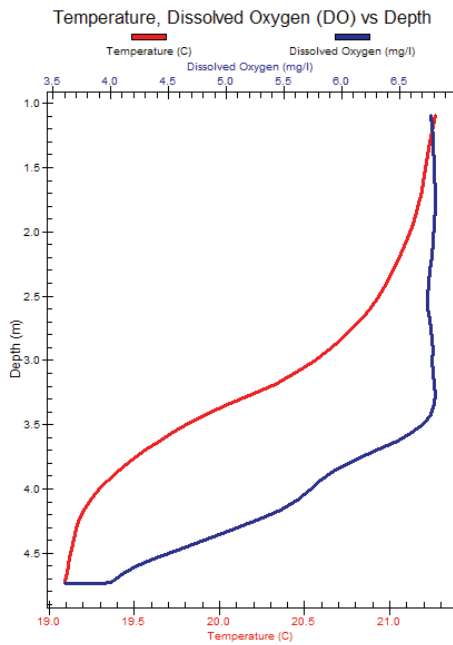
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North, B13-8108



### San Diego Bay – North, B13-8113

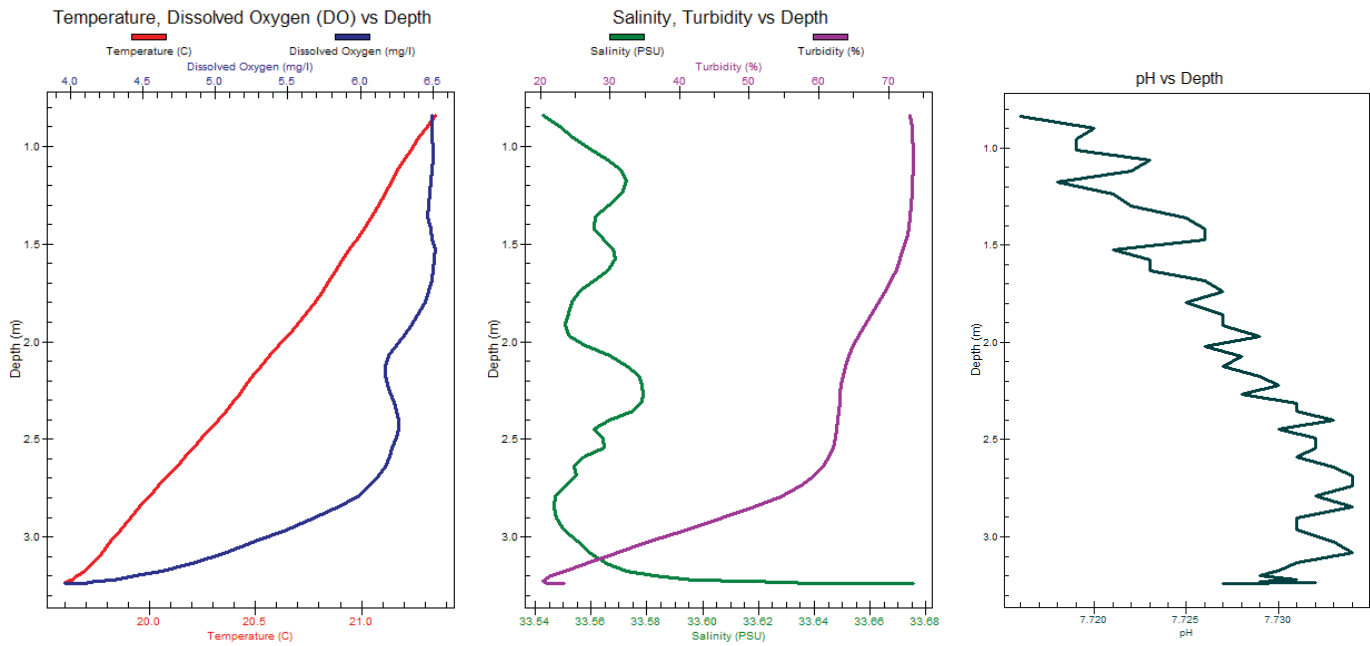


Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013

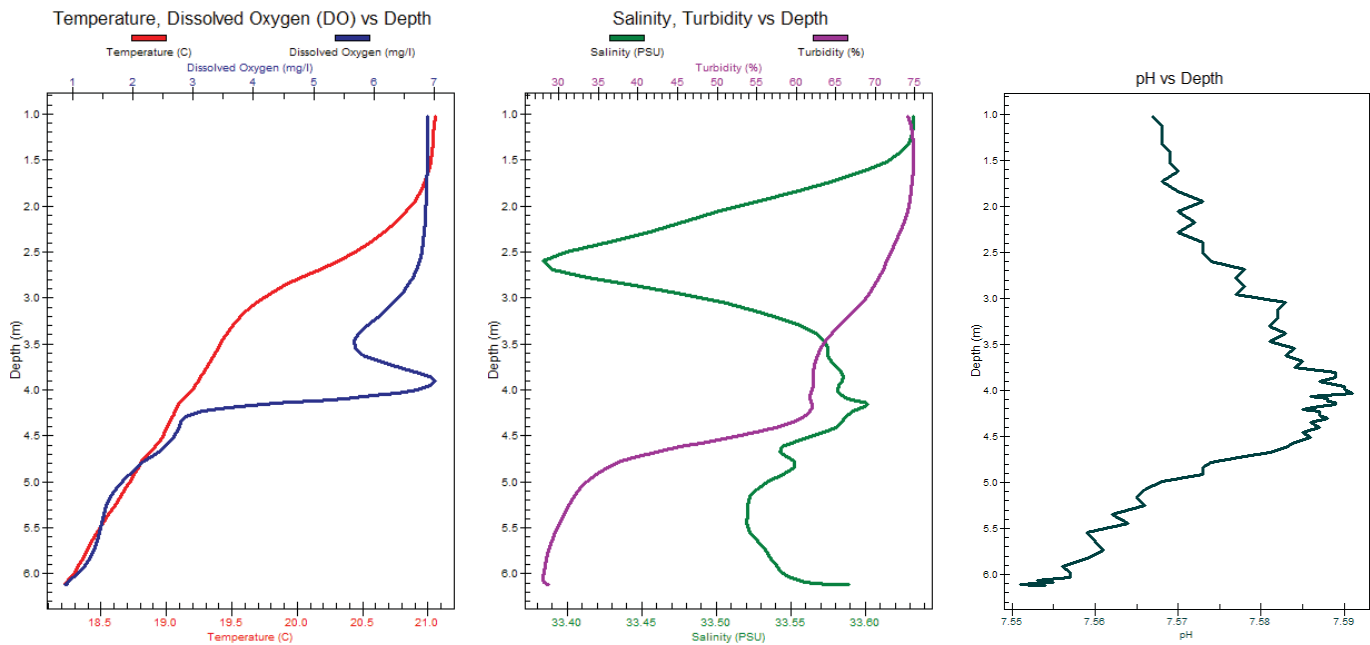




### San Diego Bay – North, B13-8116



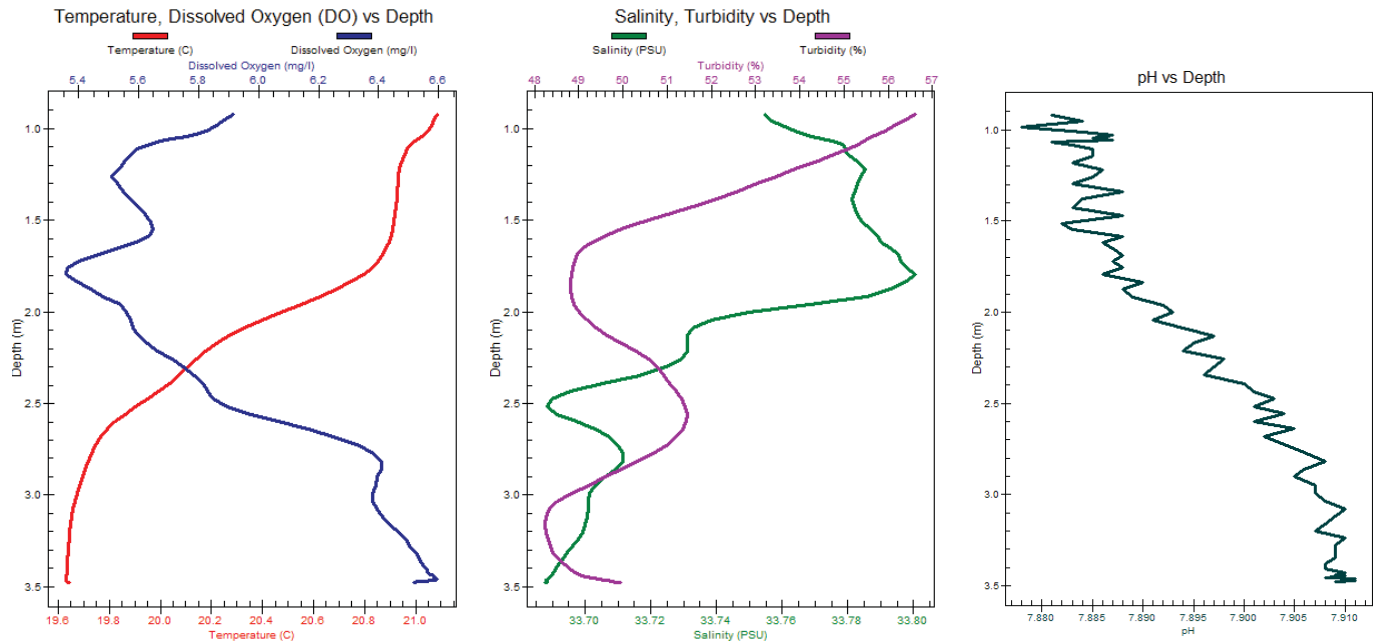
### San Diego Bay – North, B13-8117



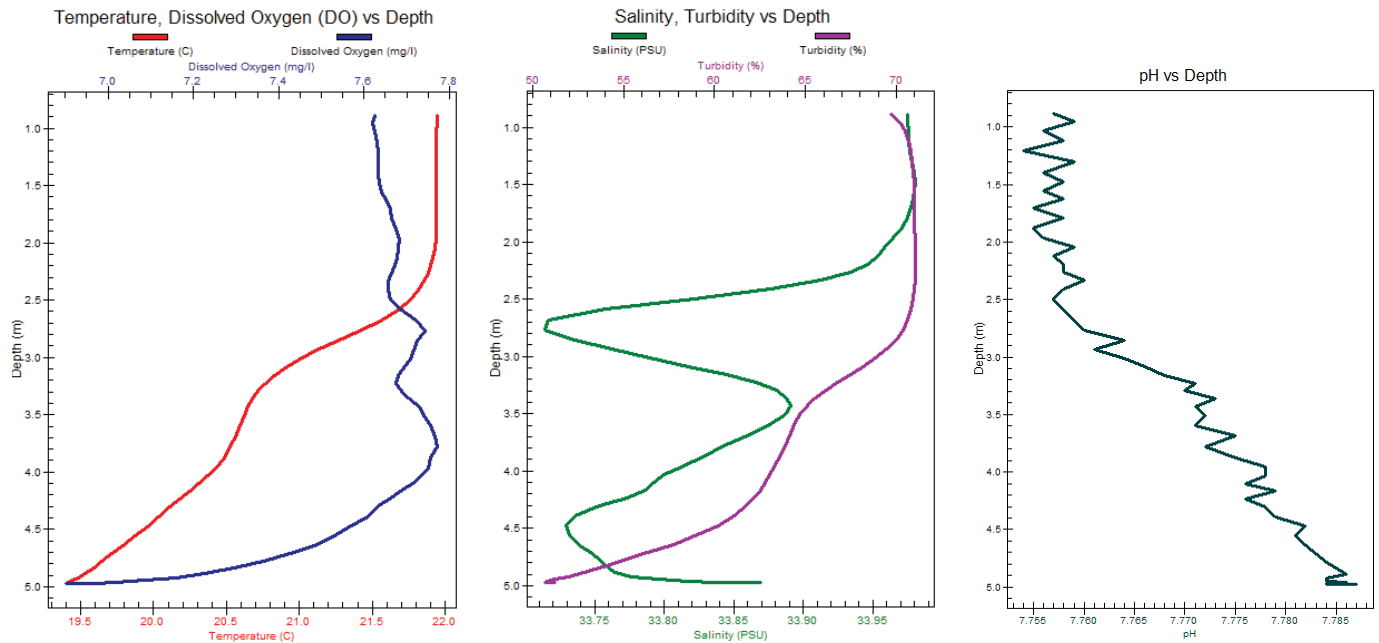
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North, B13-8121



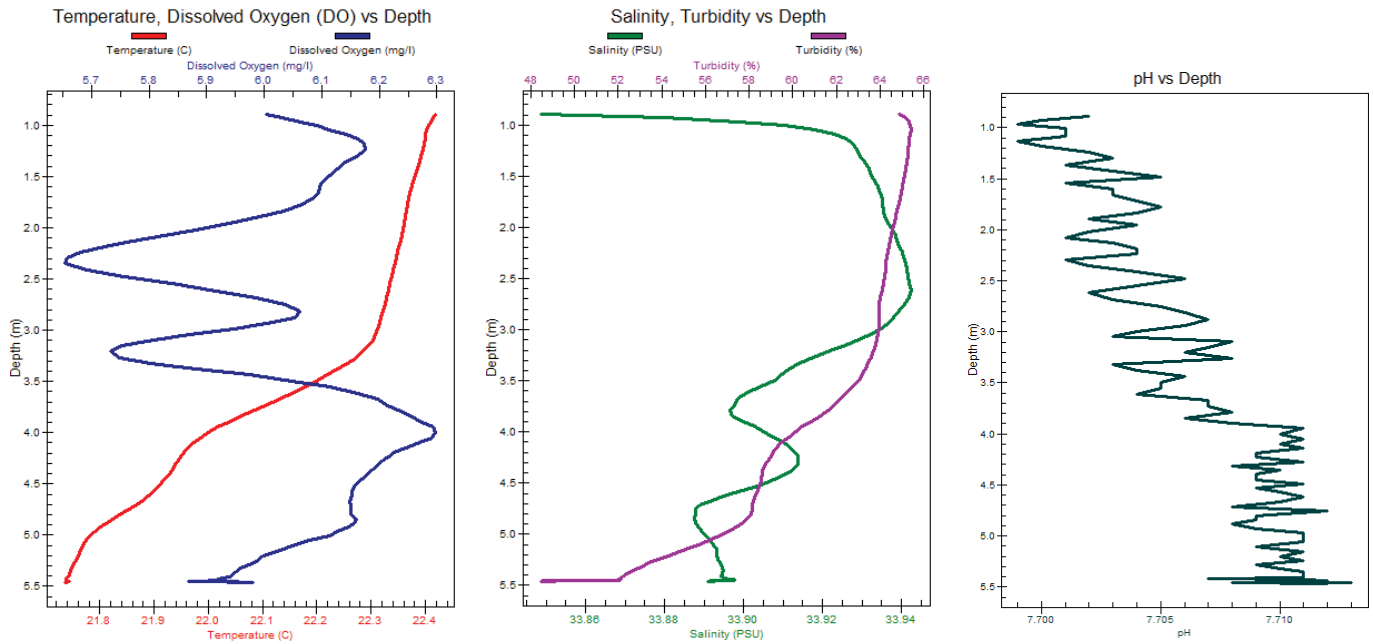
### San Diego Bay – North, B13-8122



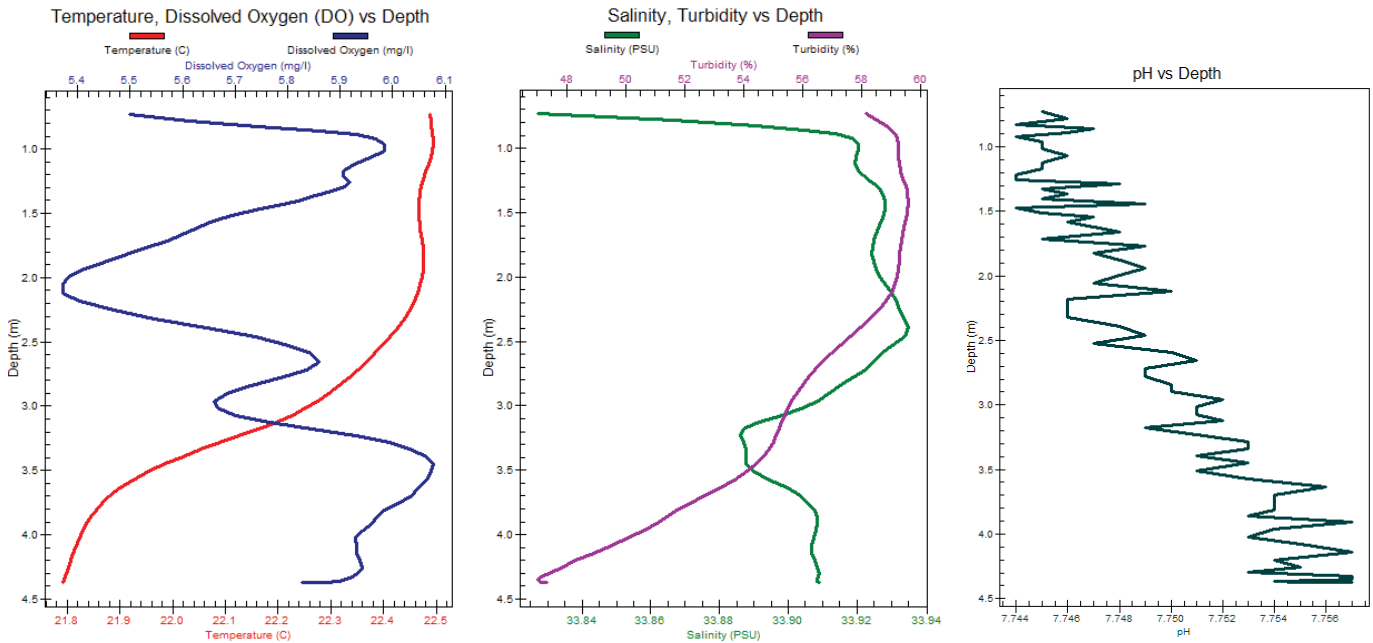
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North, B13-8123



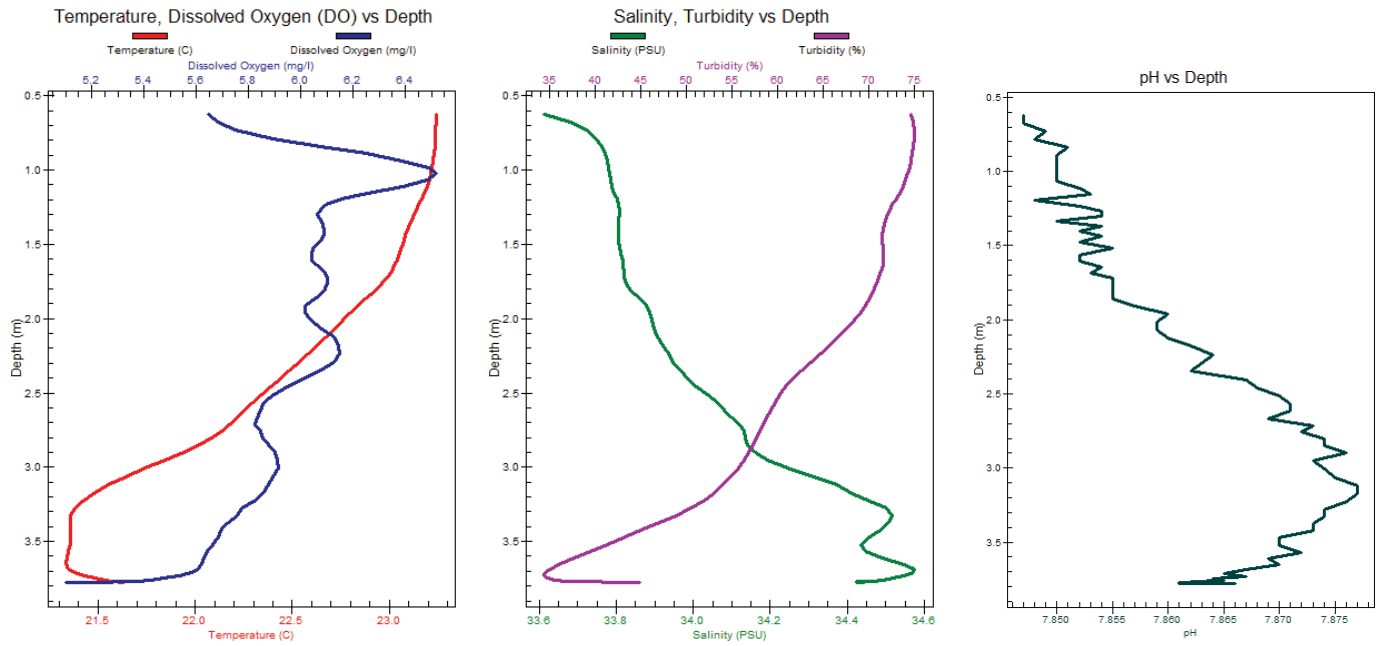
### San Diego Bay – North, B13-8124



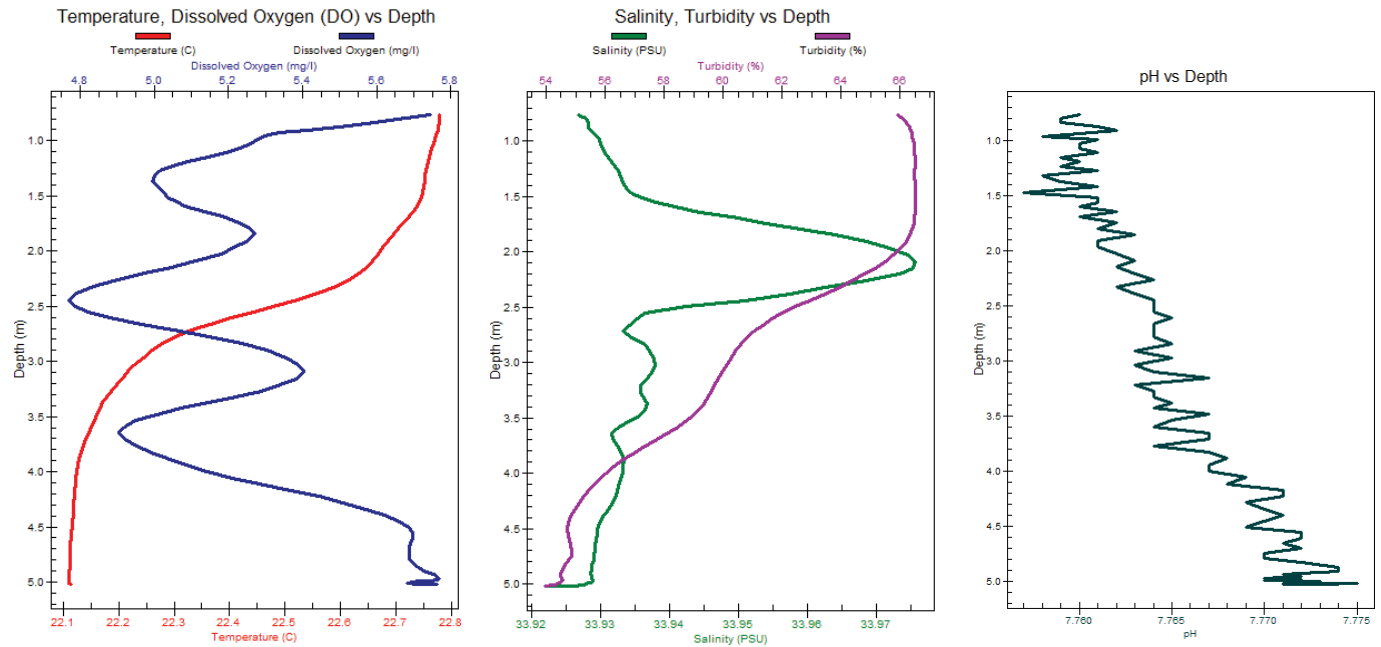
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



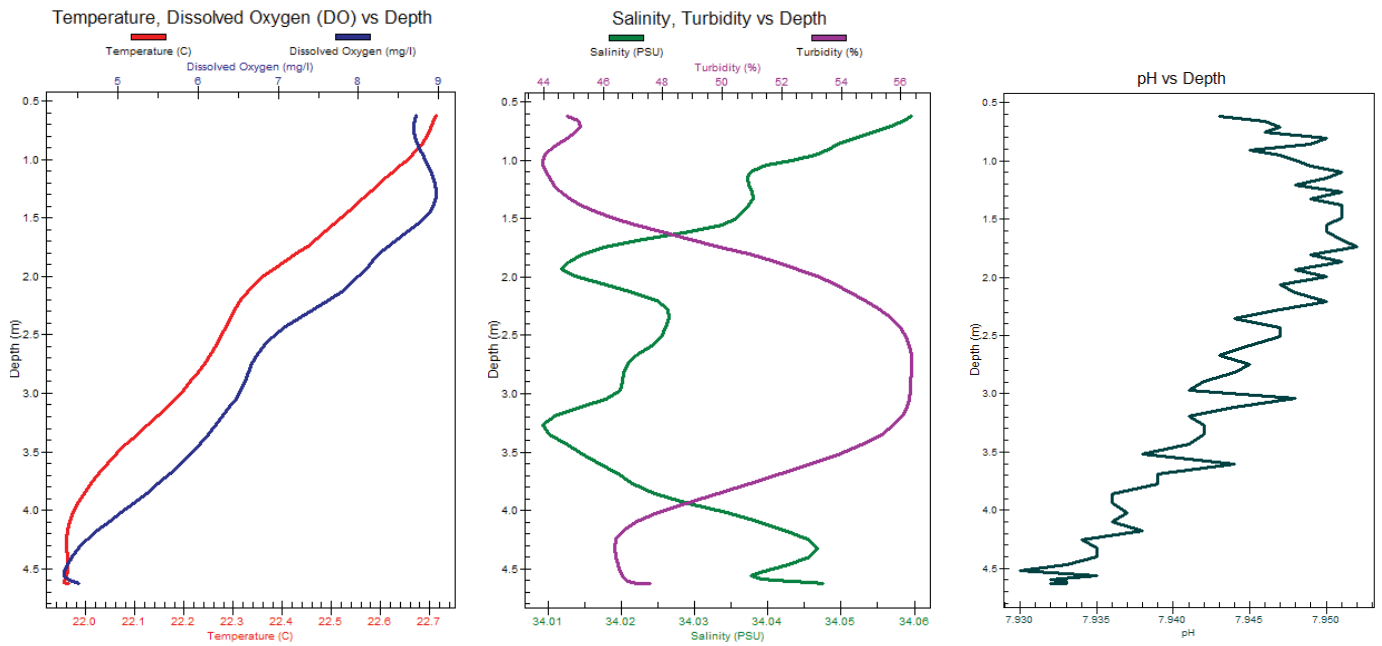
### San Diego Bay – North, B13-8127



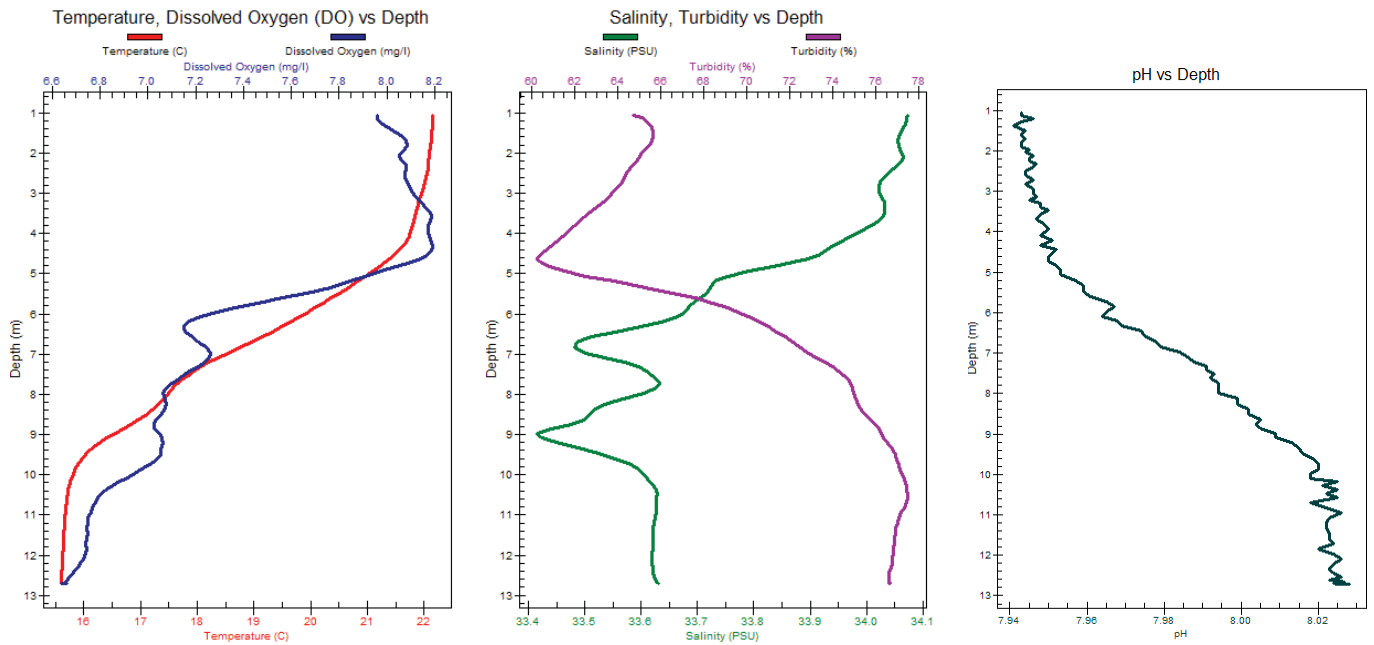
### San Diego Bay – North, B13-8128



### San Diego Bay – North Central, B13-8073



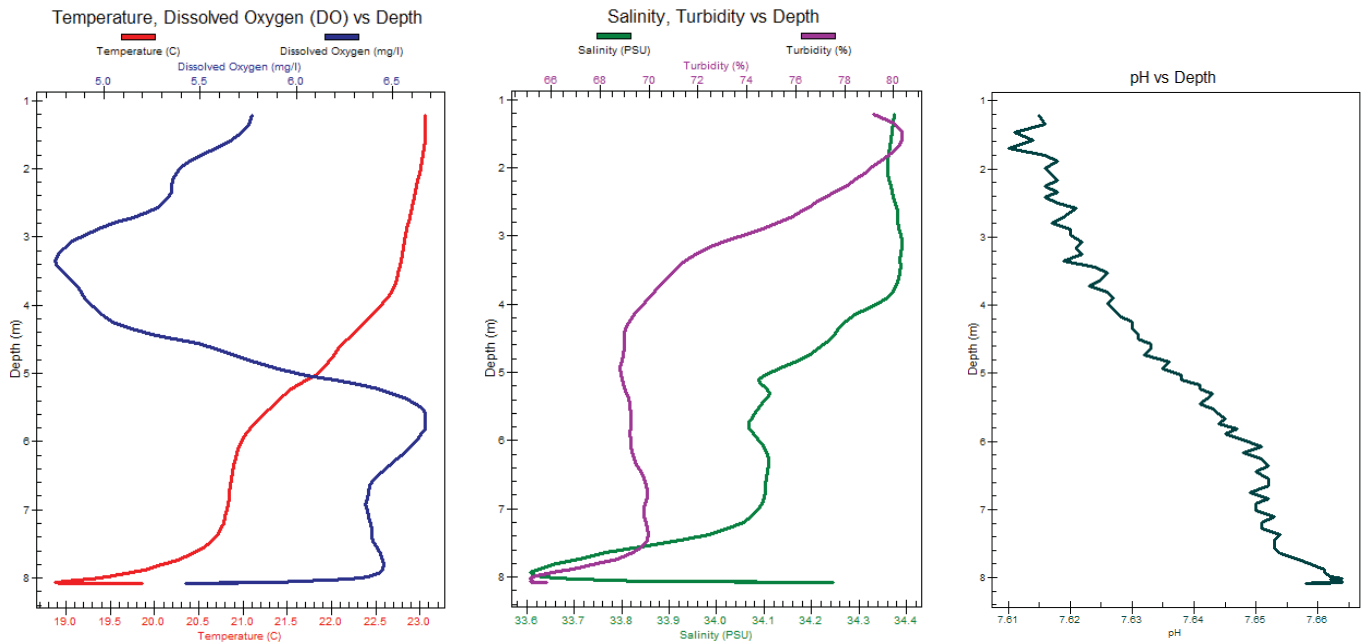
### San Diego Bay – North Central, B13-8087



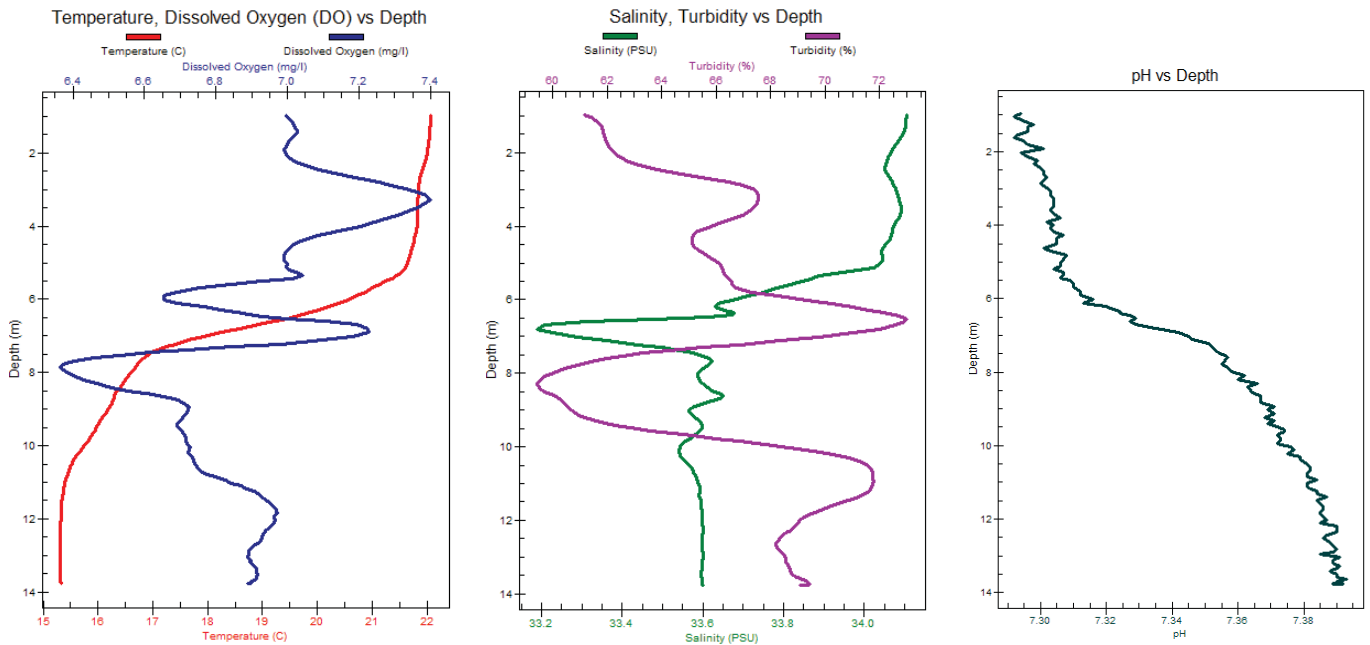
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North Central, B13-8090



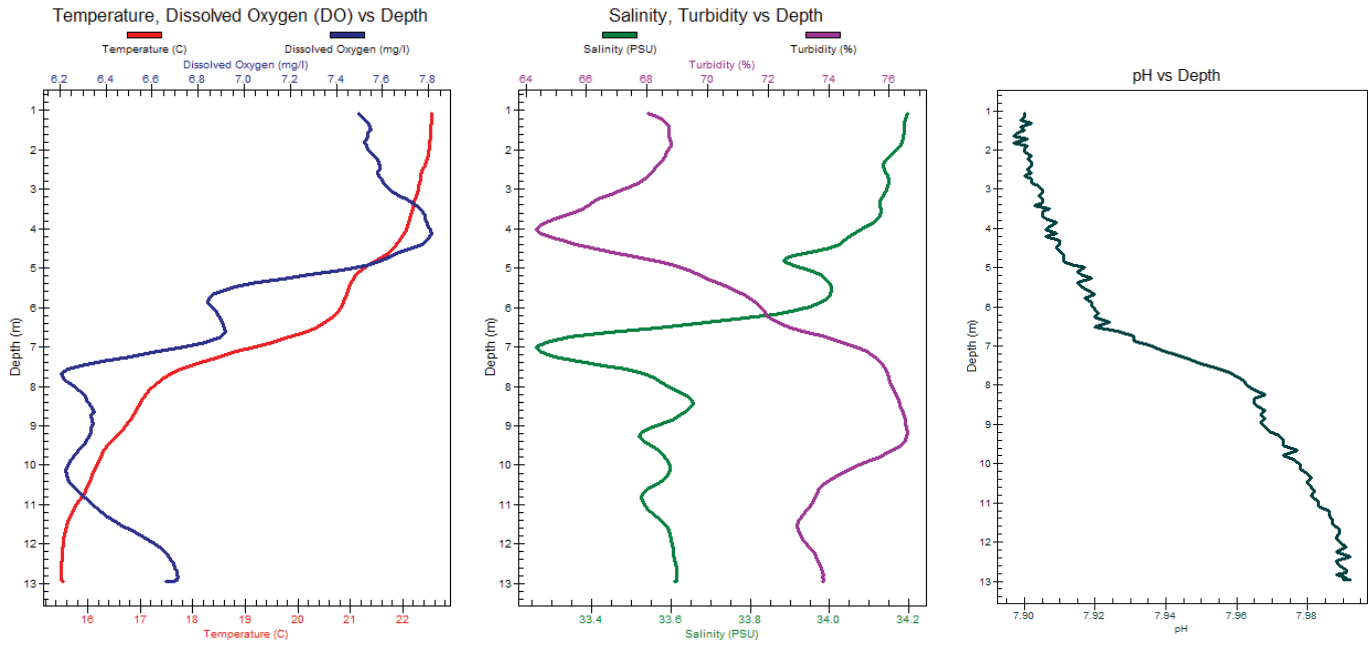
### San Diego Bay – North Central, B13-8093



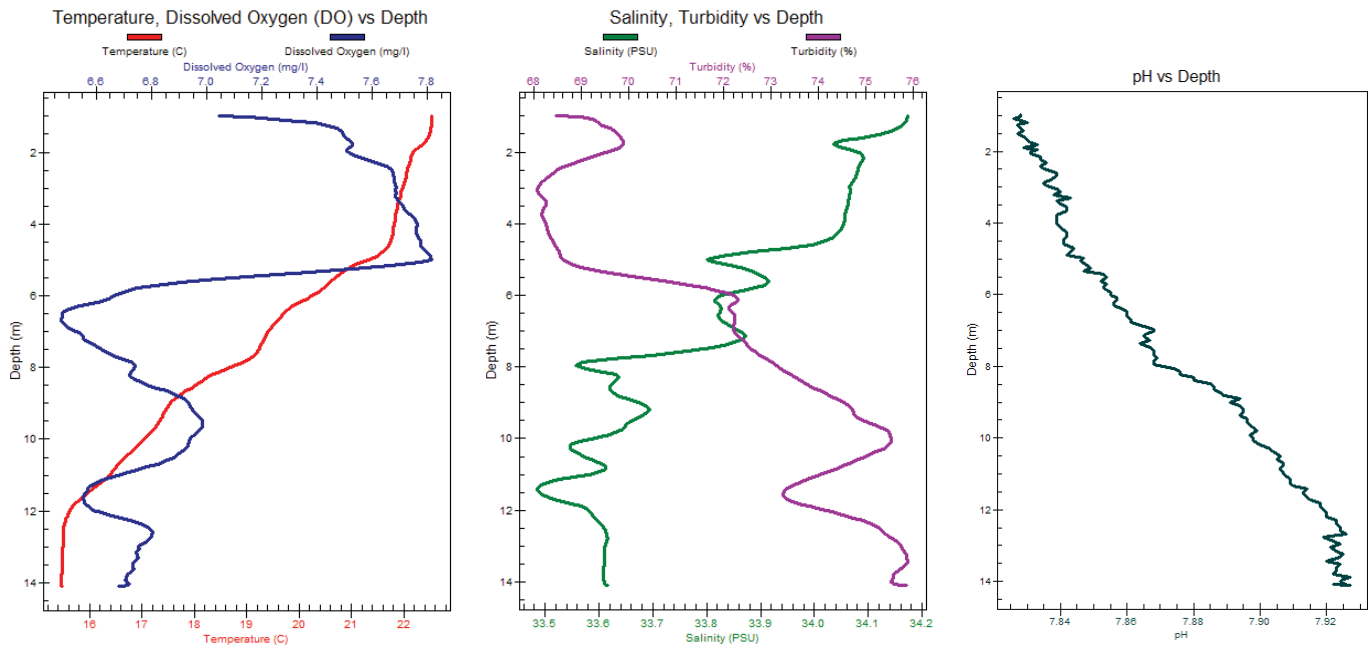
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North Central, B13-8095



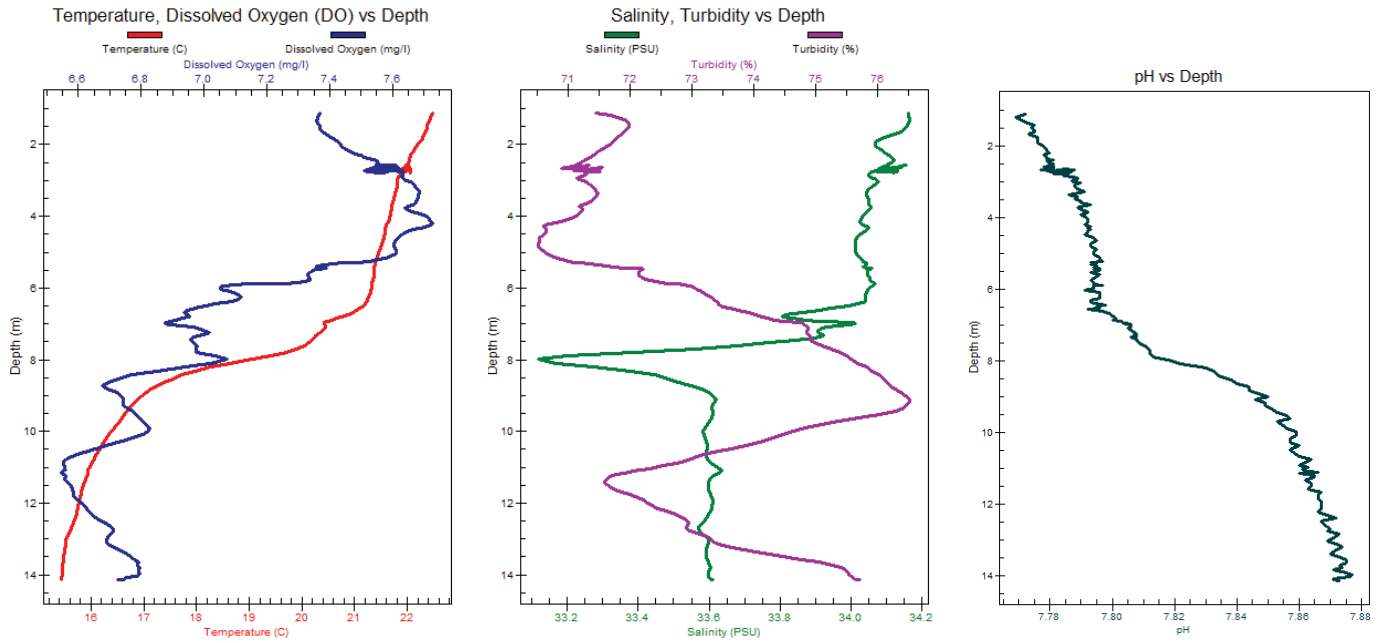
### San Diego Bay – North Central, B13-8096



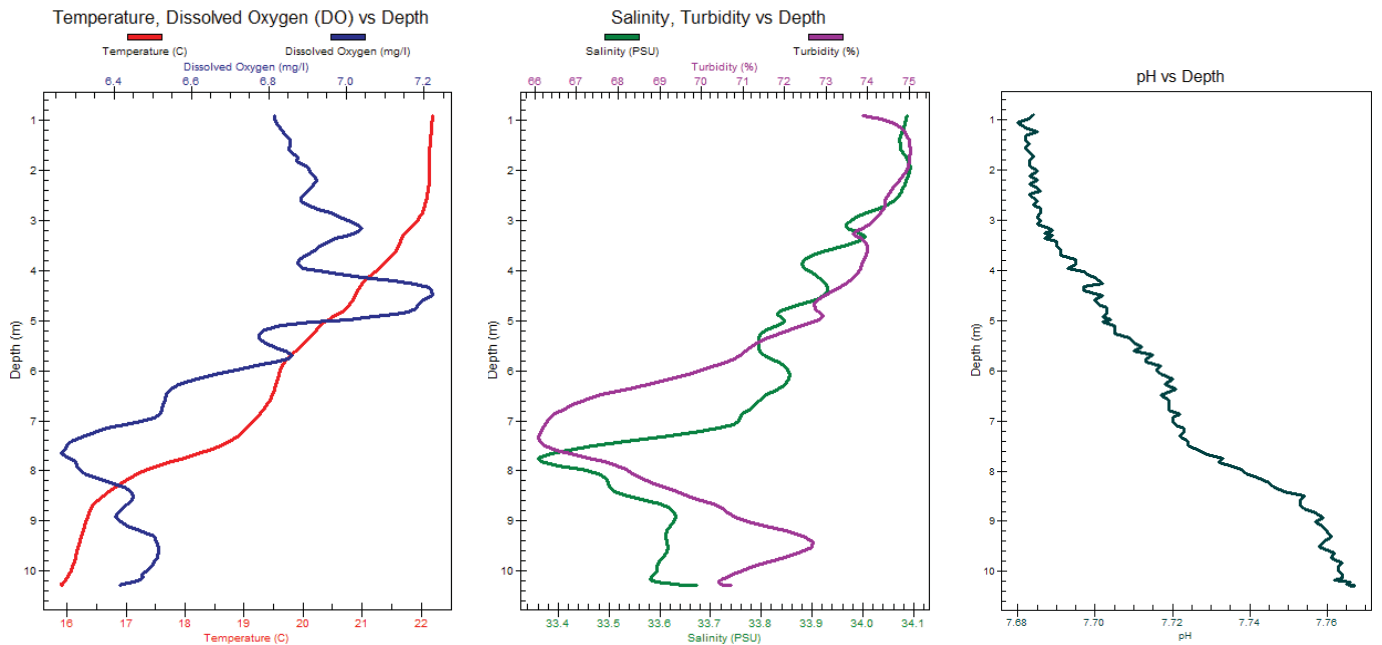
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North Central, B13-8098



### San Diego Bay – North Central, B13-8099

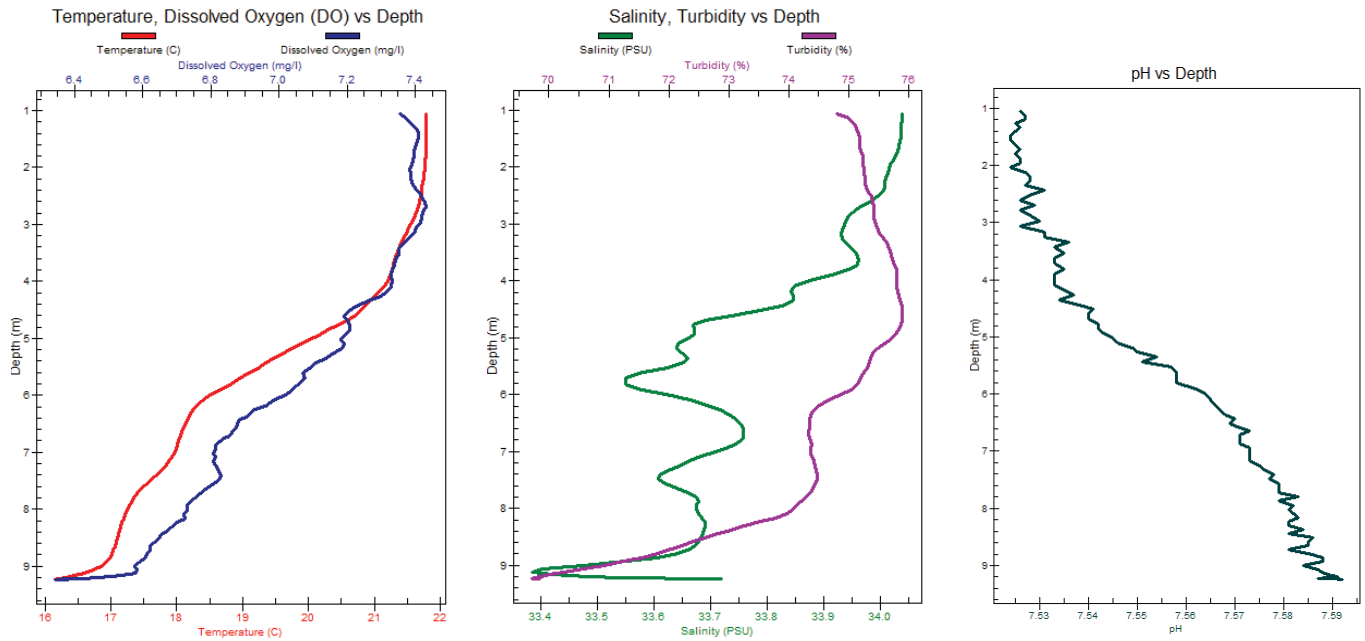


Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013

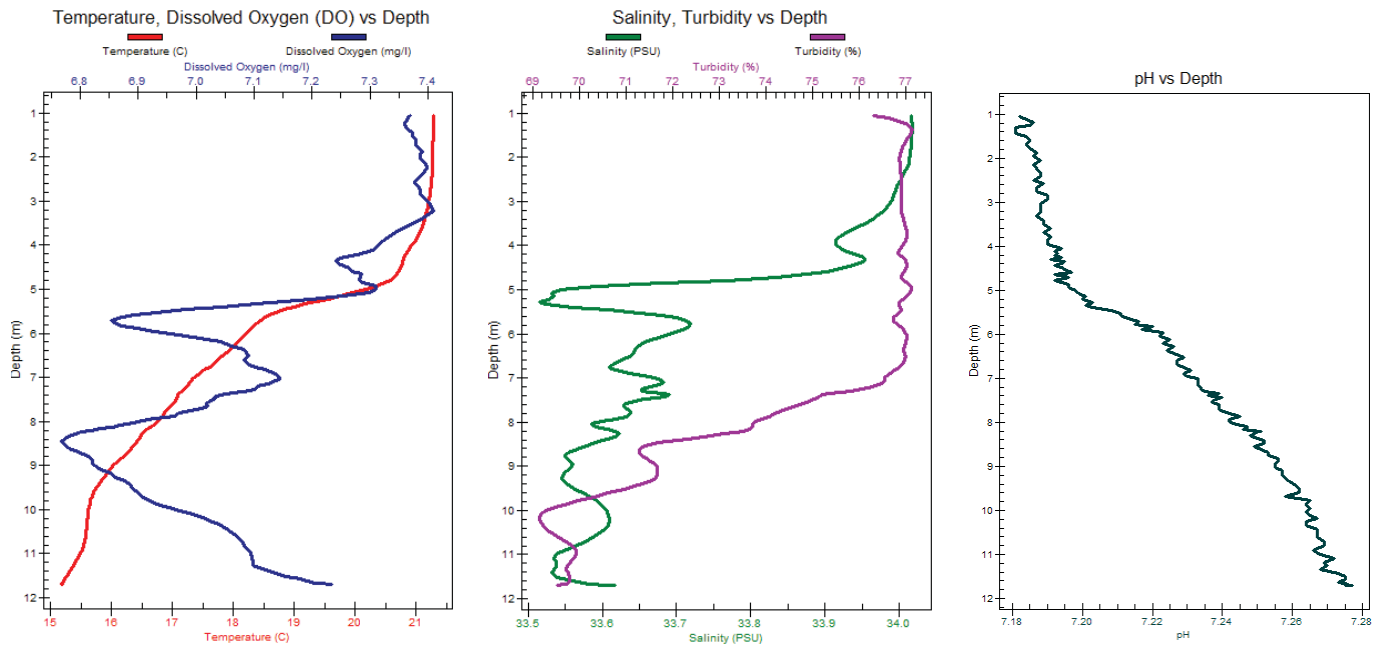




### San Diego Bay – North Central, B13-8100



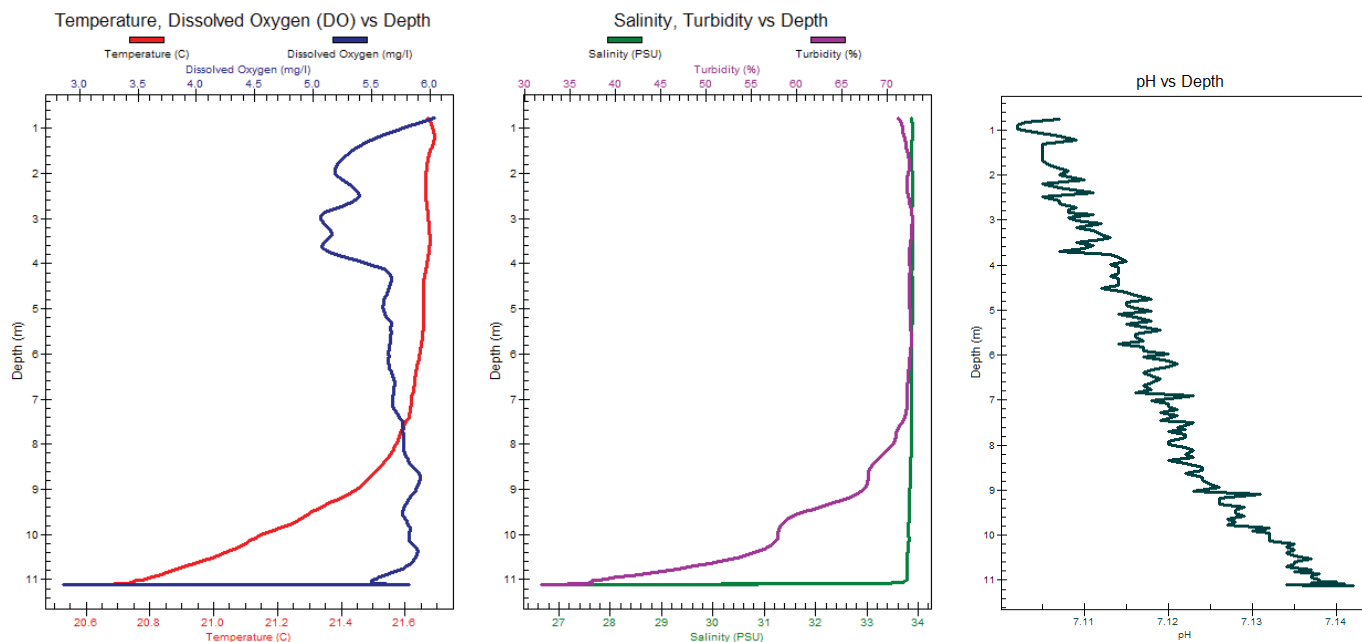
### San Diego Bay – North Central, B13-8109



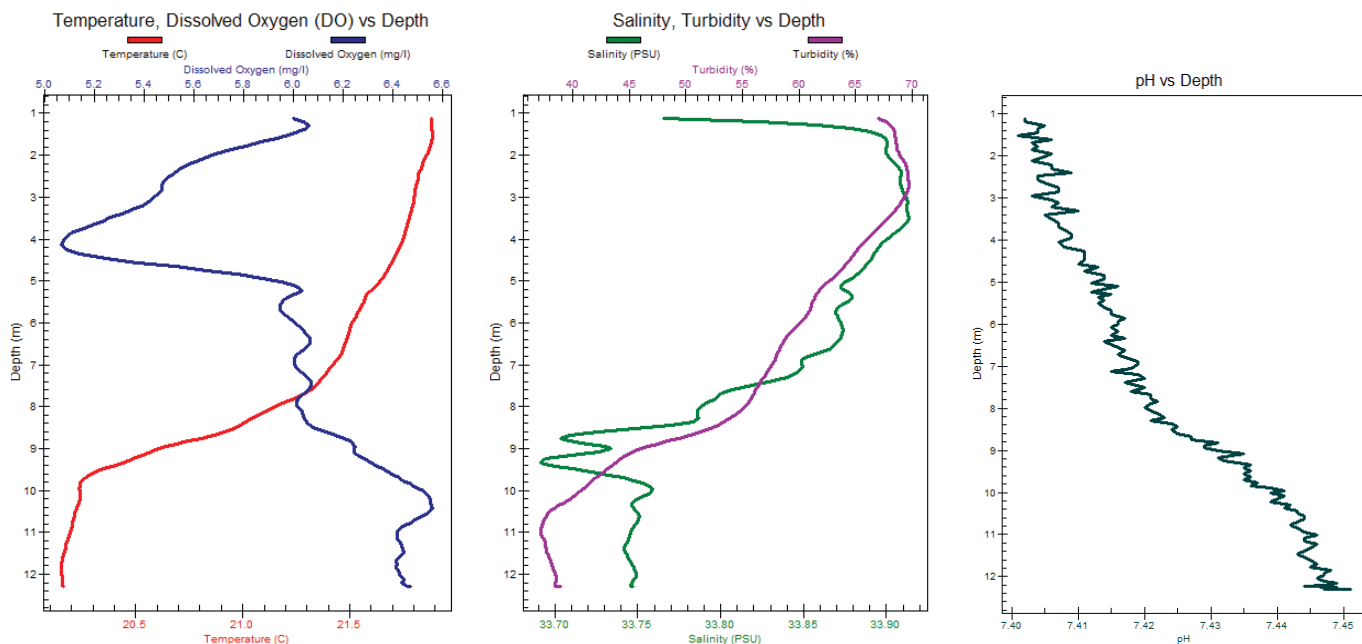
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North Central, B13-8111



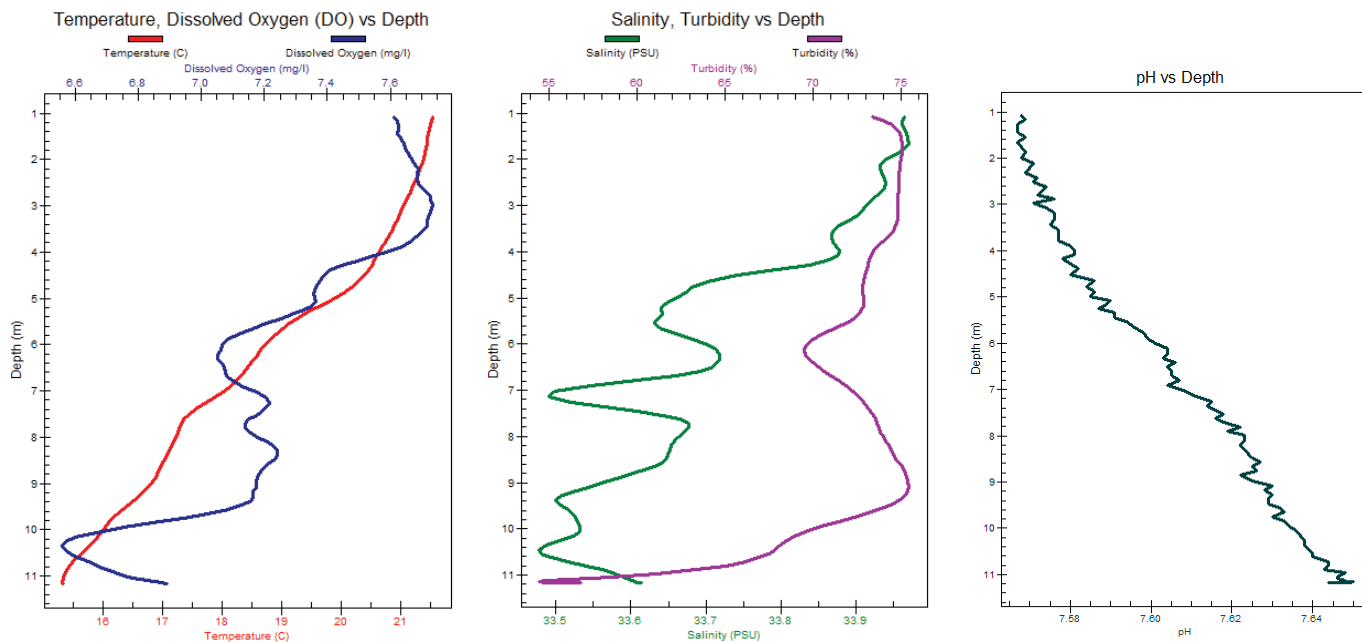
### San Diego Bay – North Central, B13-8112



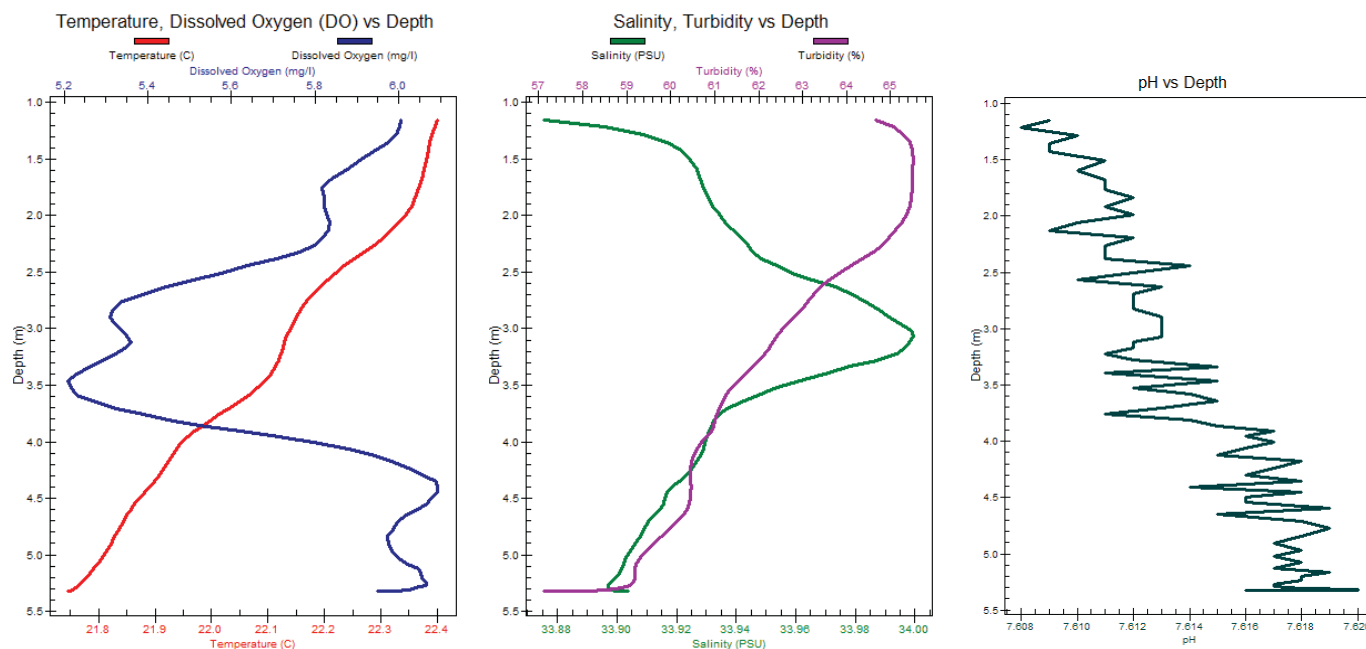
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – North Central, B13-8118



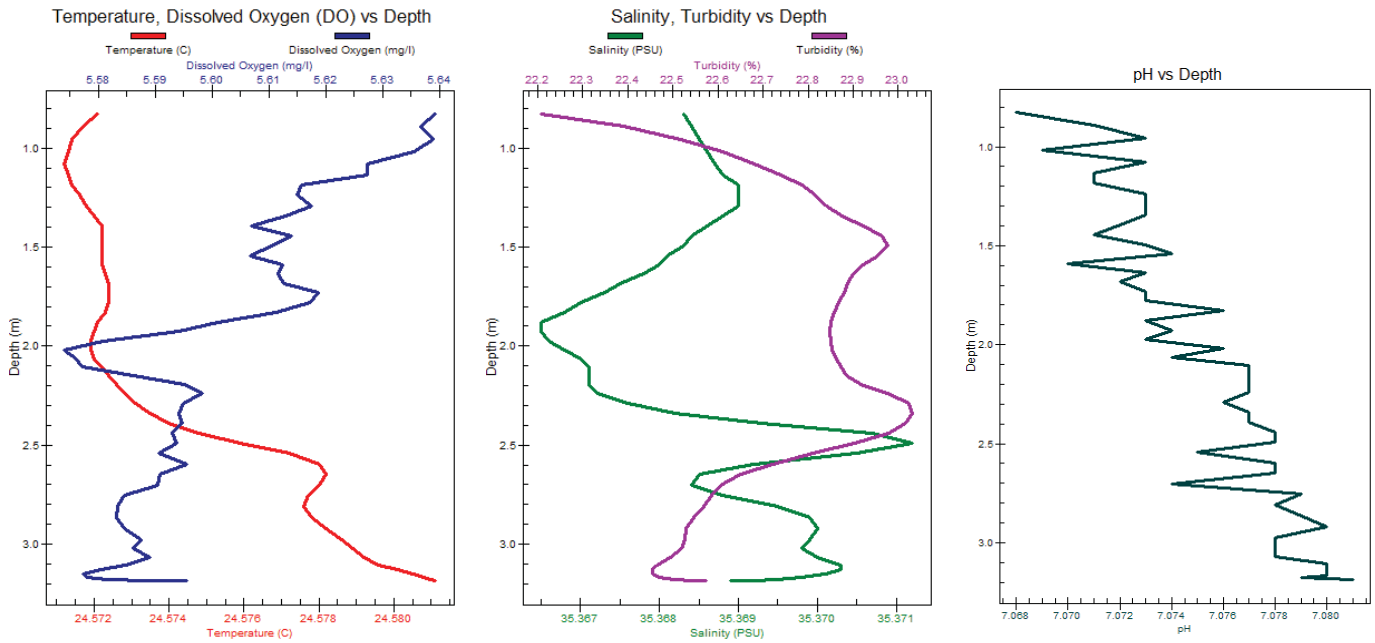
### San Diego Bay – North Central, B13-8500



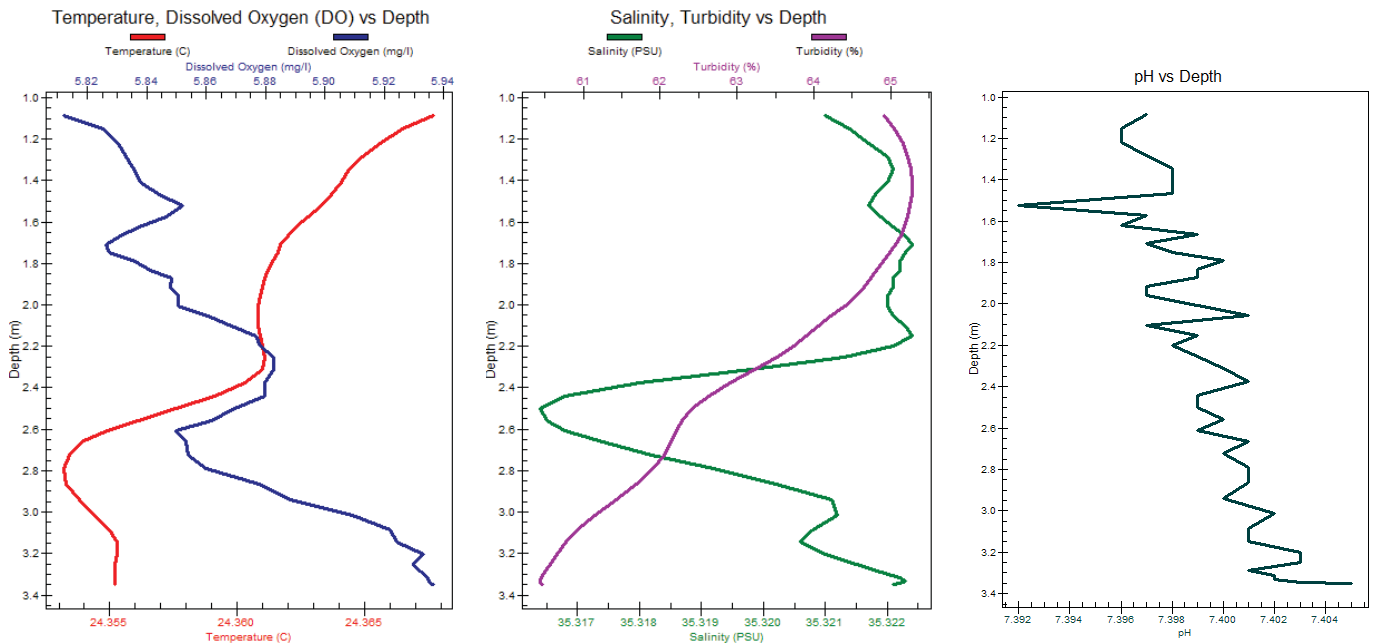
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South, B13-8013



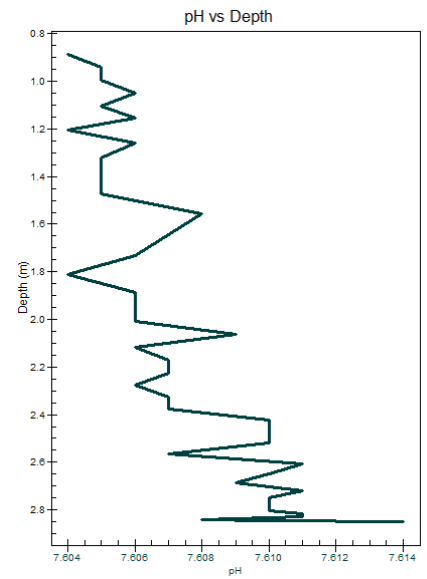
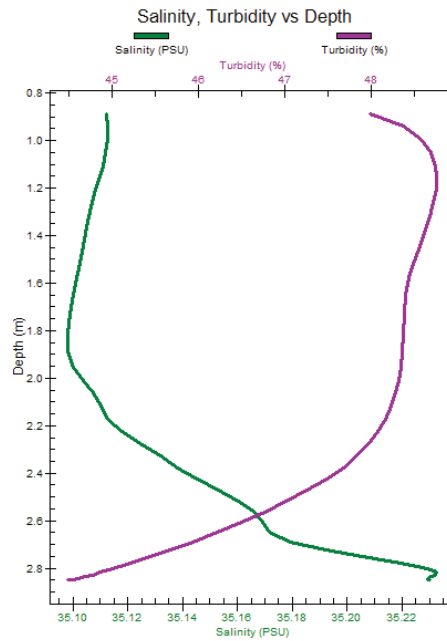
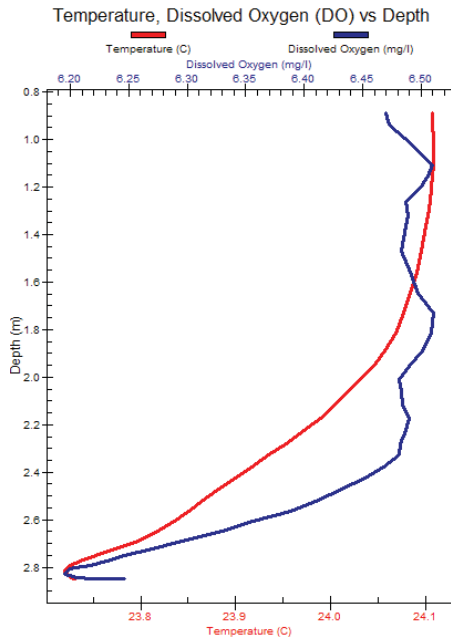
### San Diego Bay – South, B13-8014



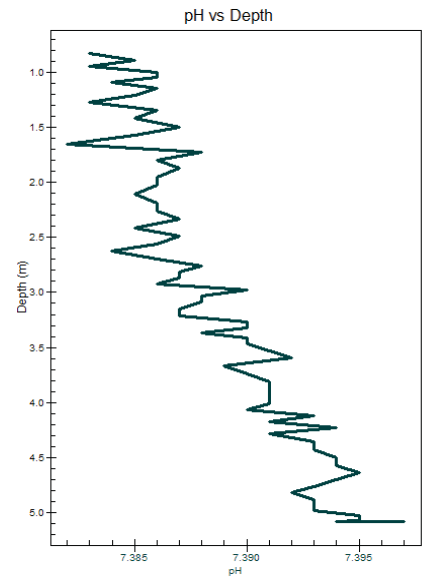
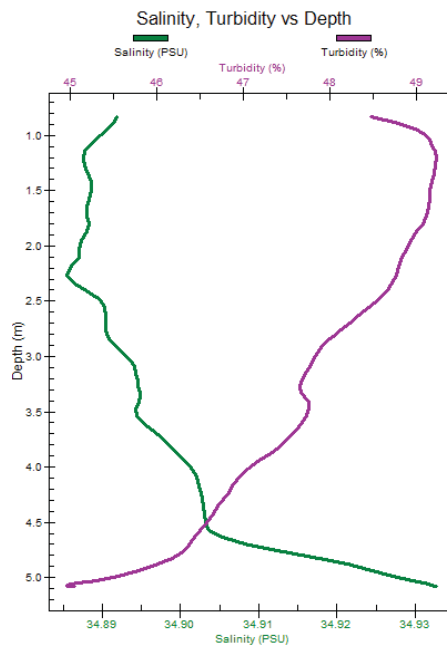
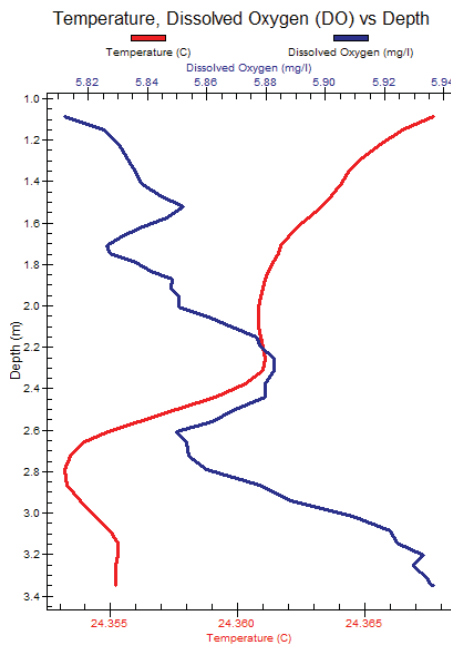
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South, B13-8017



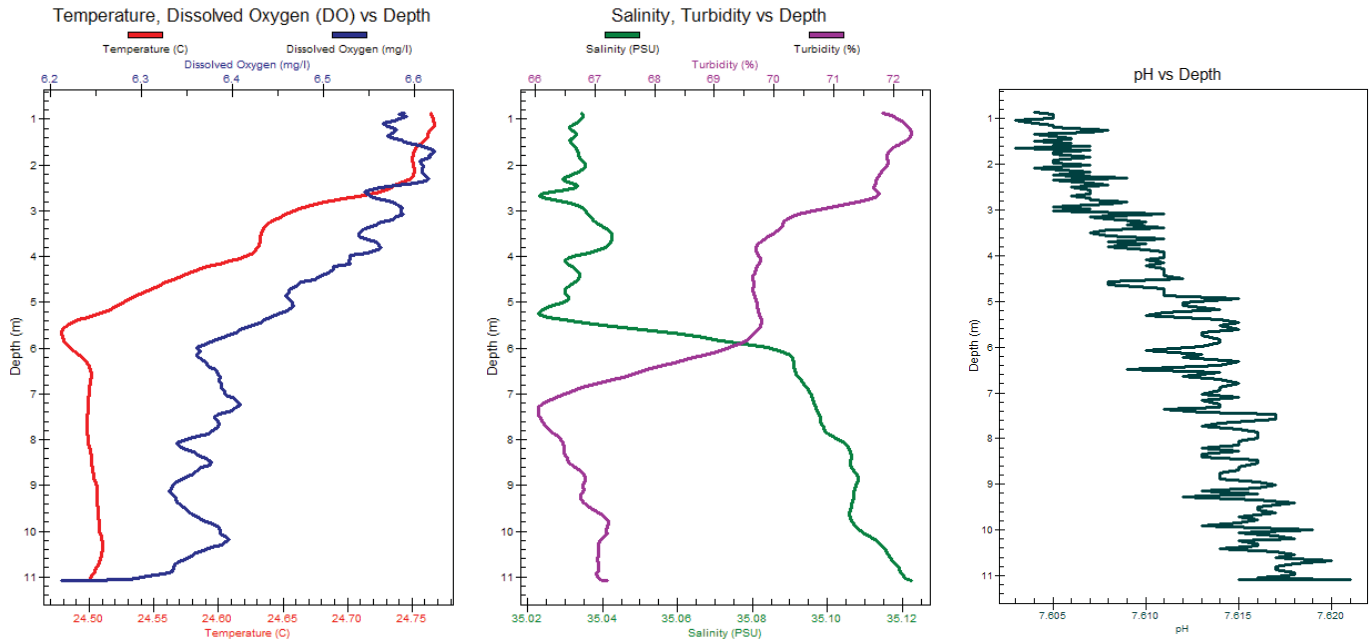
### San Diego Bay – South, B13-8020



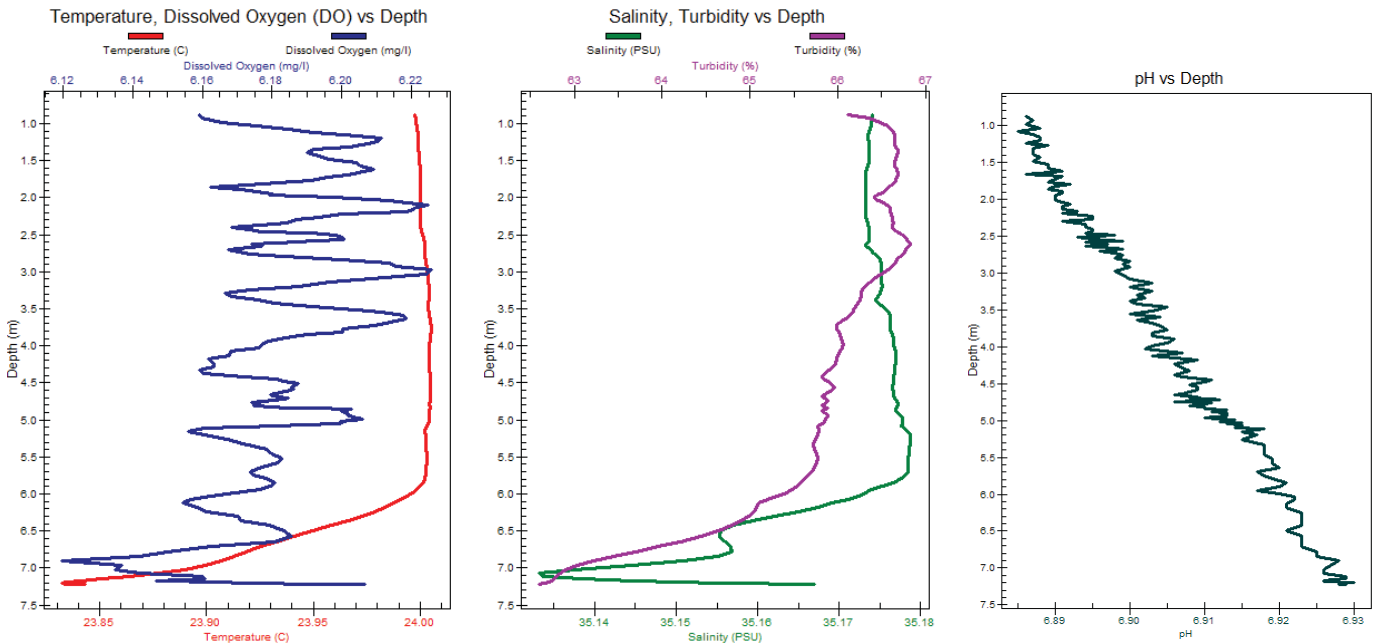
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



### San Diego Bay – South, B13-8028



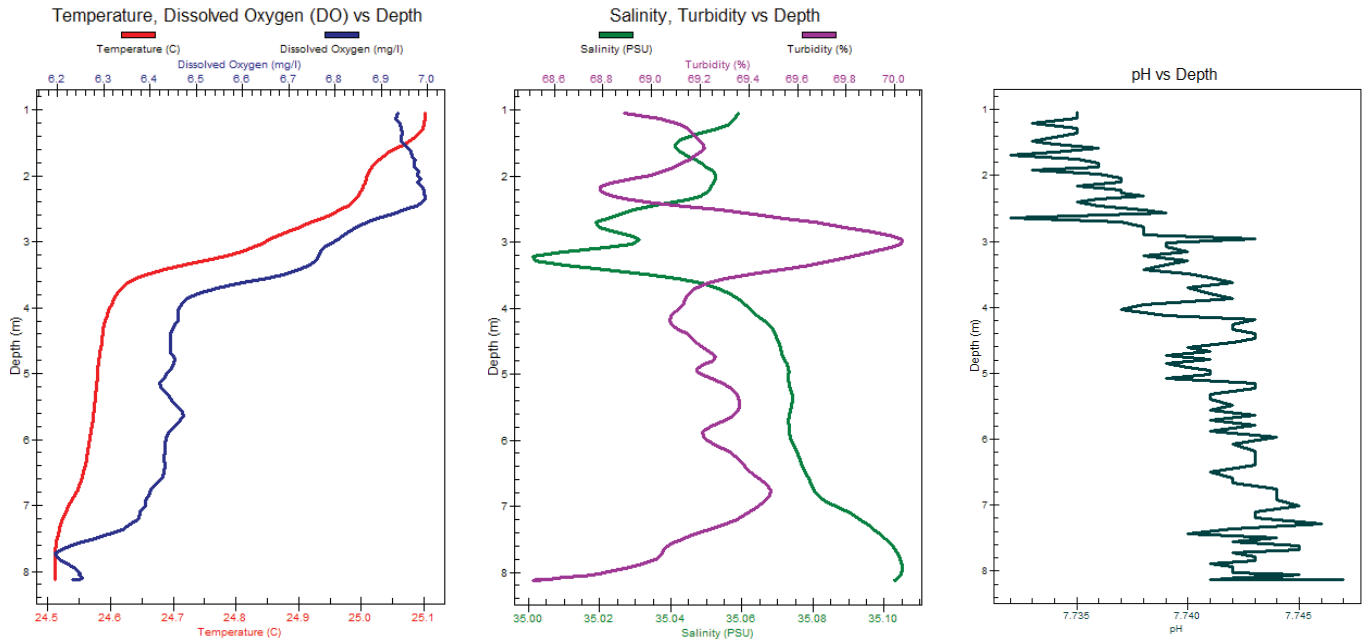
### San Diego Bay – South, B13-8029



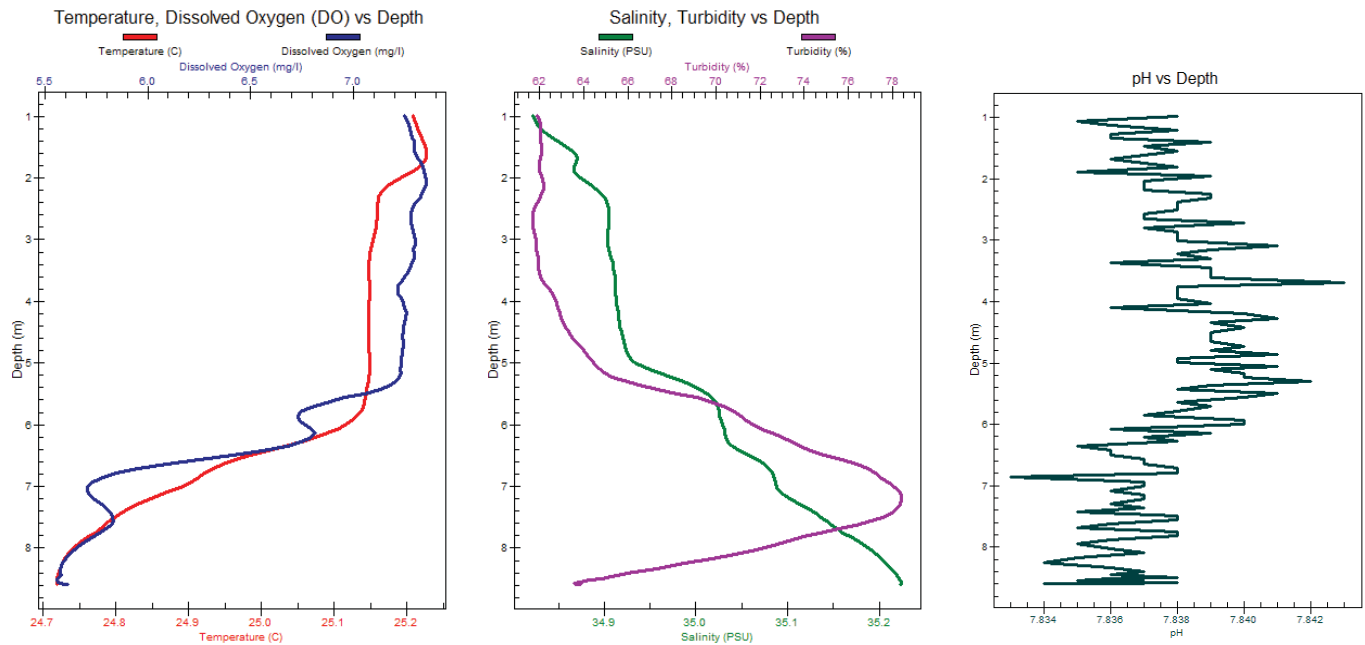
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South, B13-8030



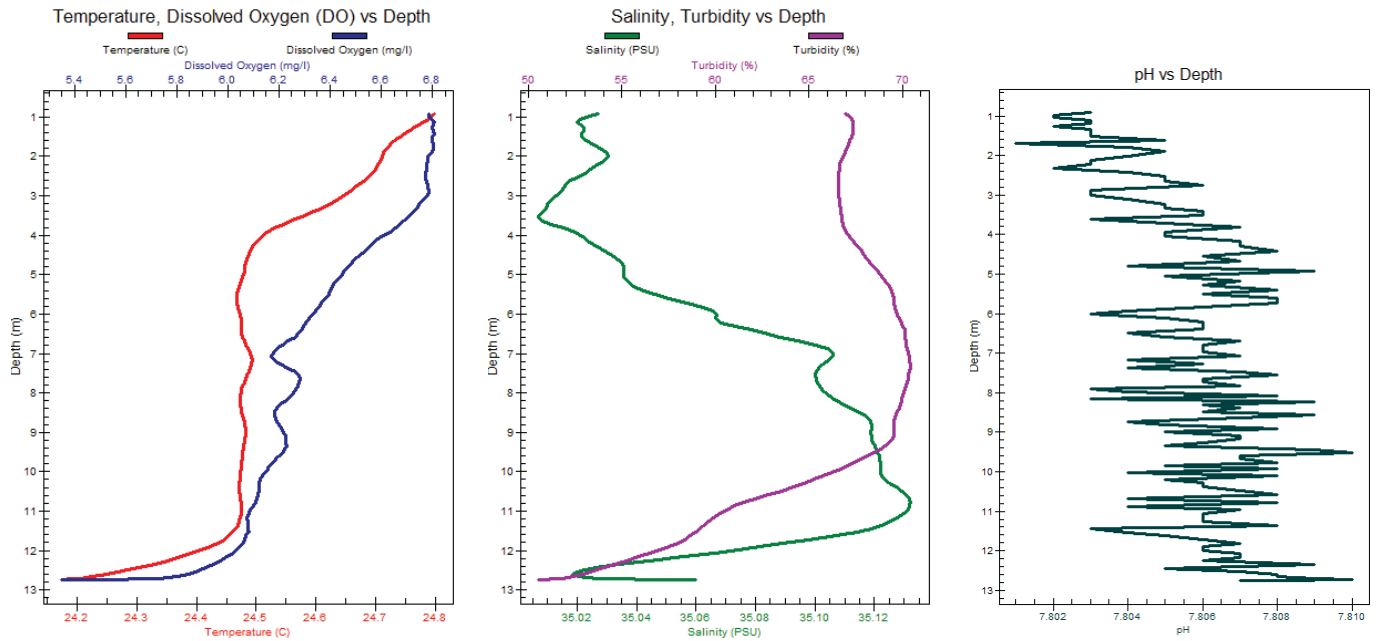
### San Diego Bay – South, B13-8033



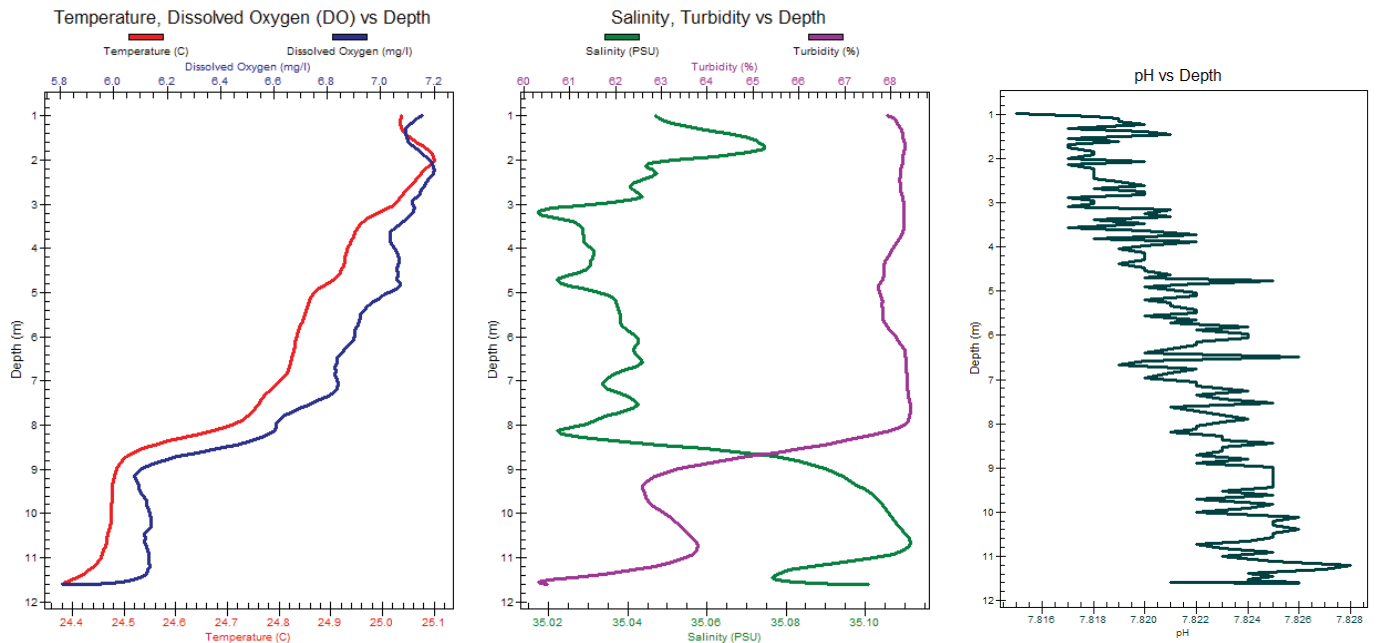
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South, B13-8036



### San Diego Bay – South, B13-8038

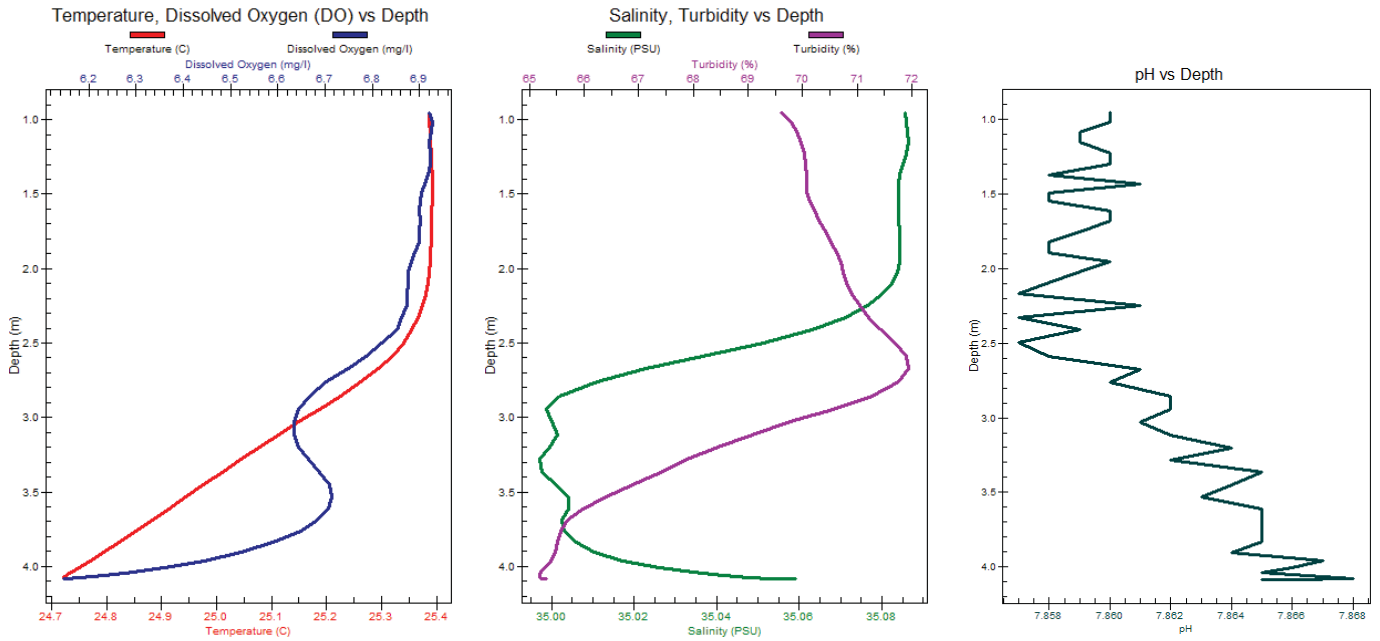


Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013





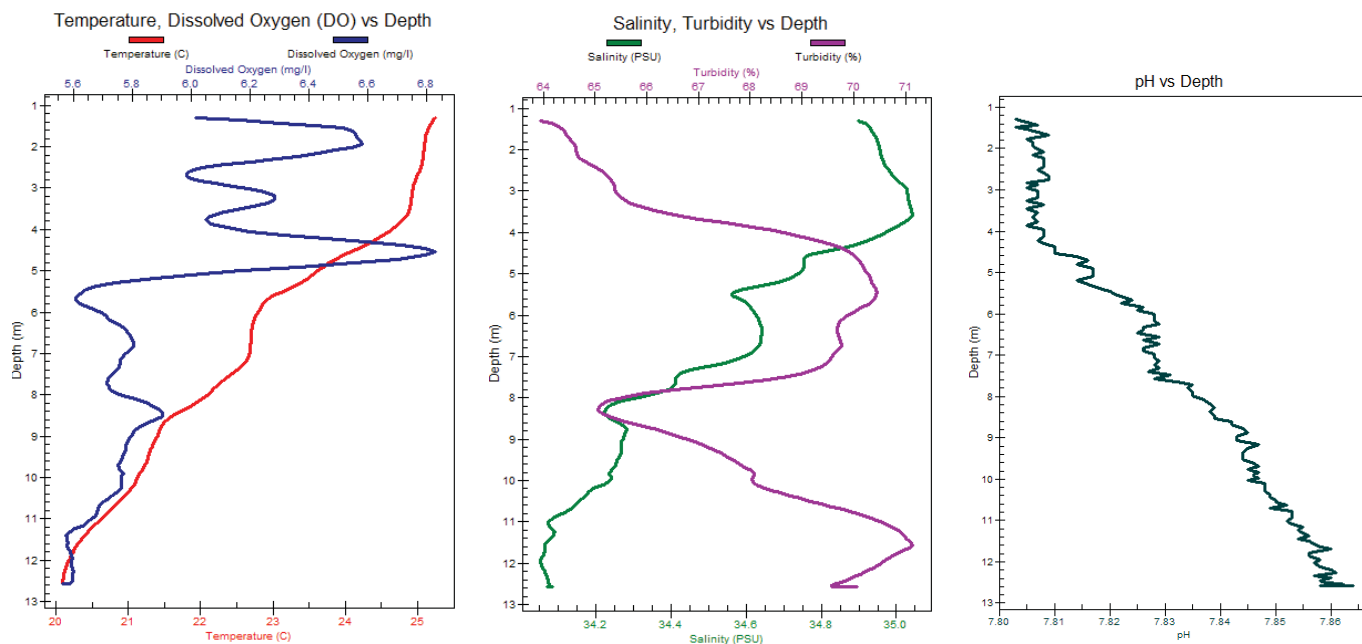
## San Diego Bay – South, B13-8040



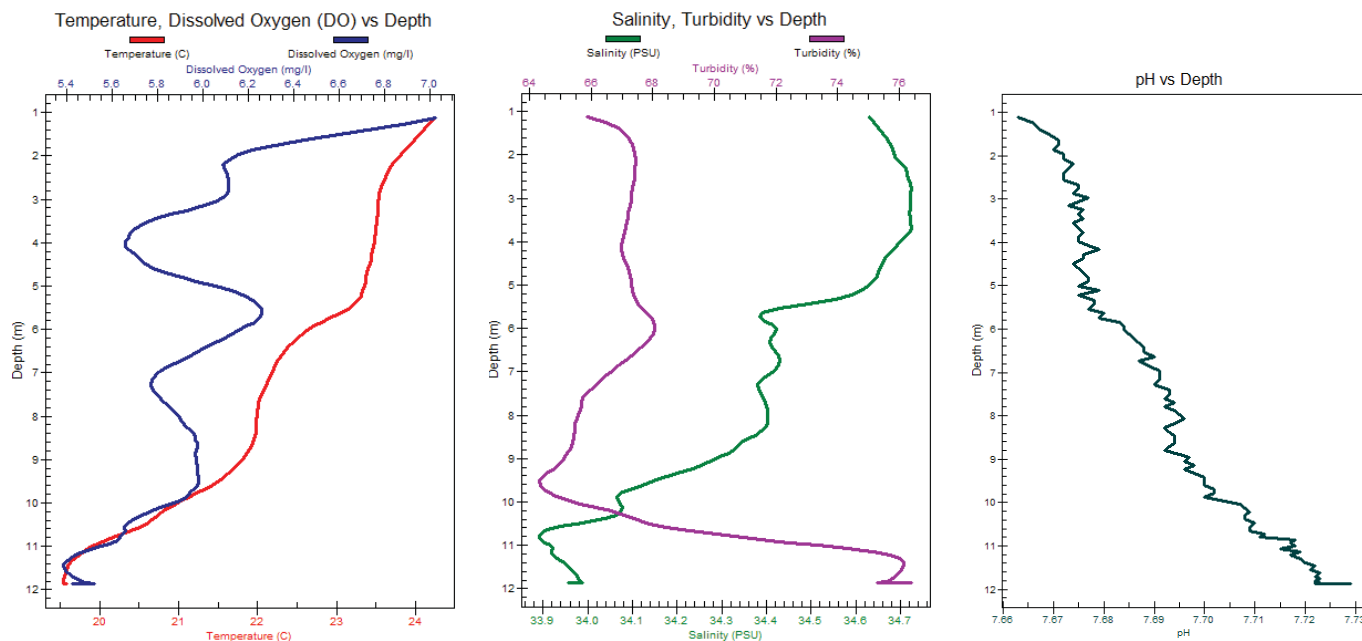
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8031



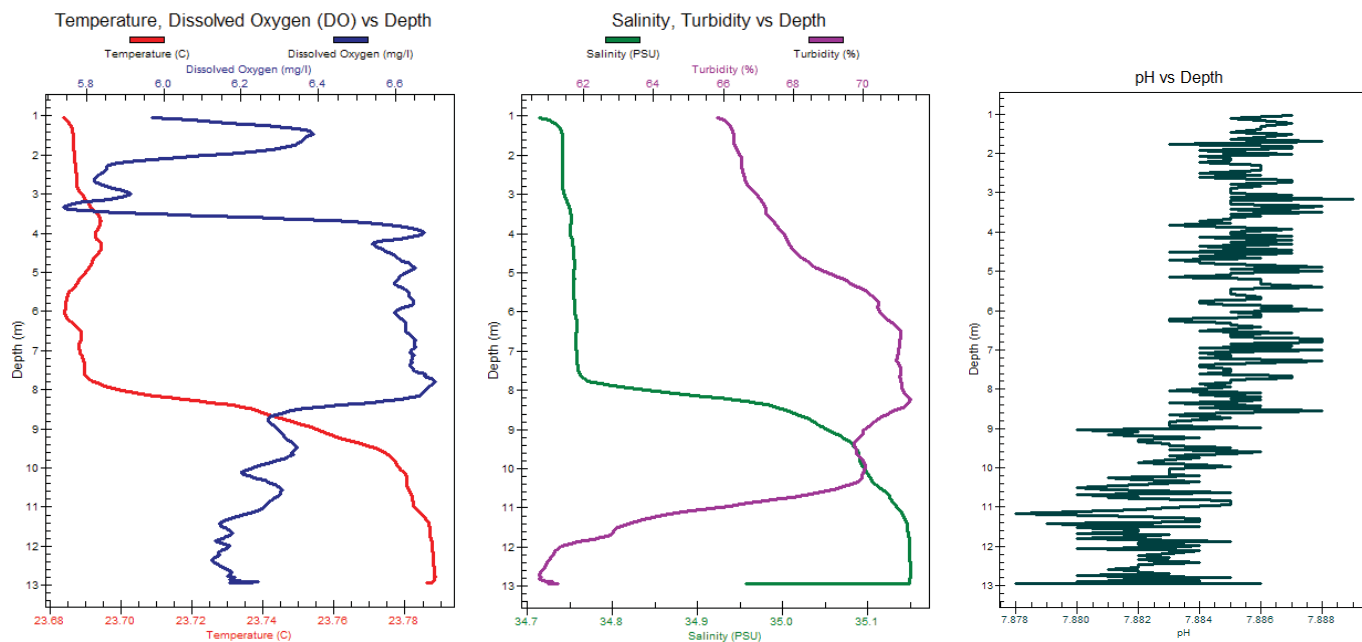
### San Diego Bay – South Central, B13-8045



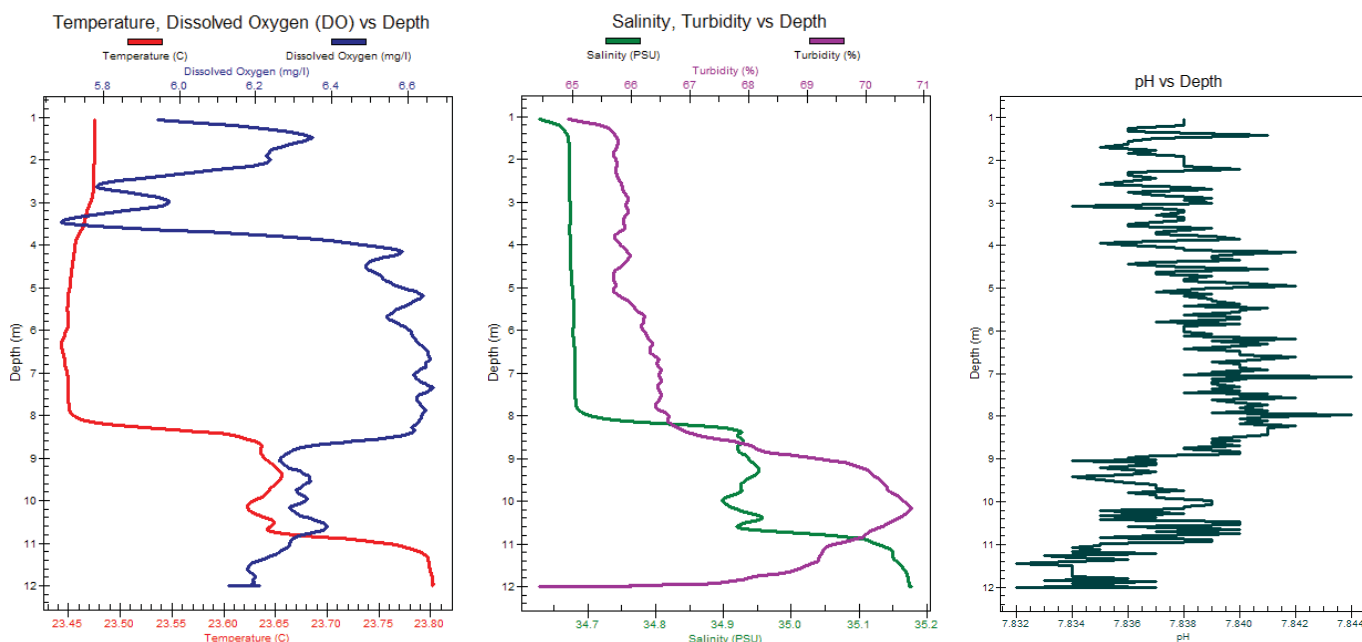
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



### San Diego Bay – South Central, B13-8049



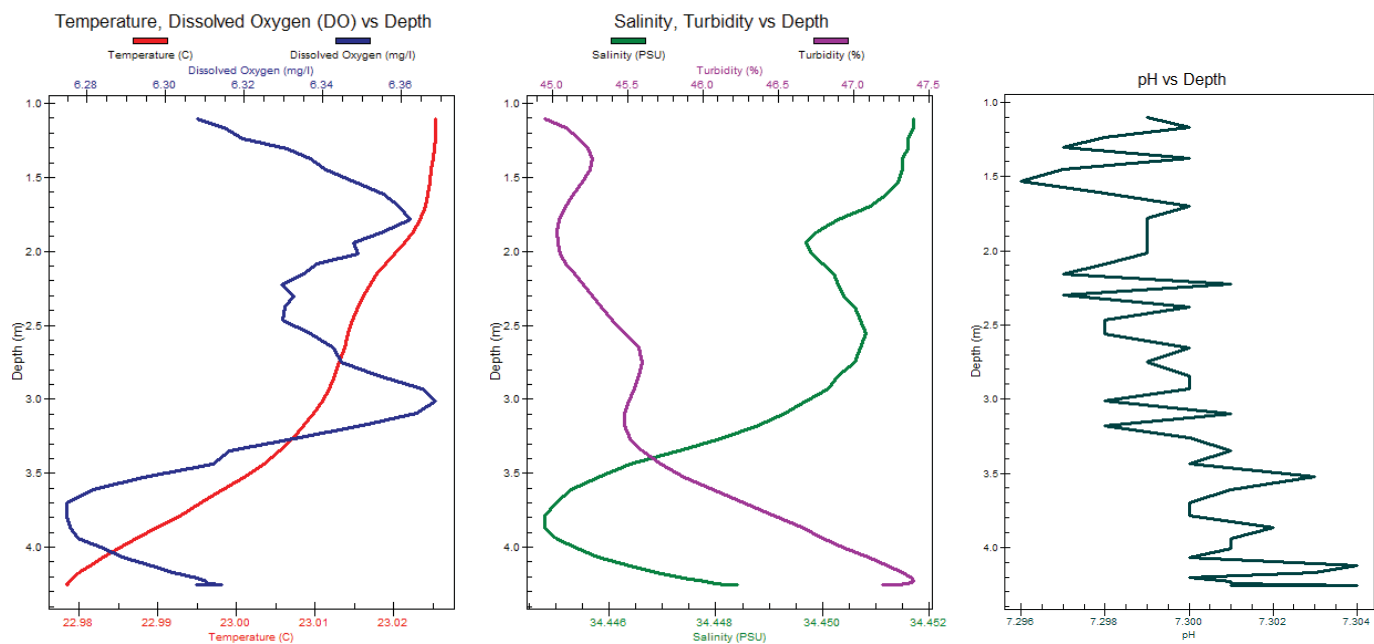
### San Diego Bay – South Central, B13-8050



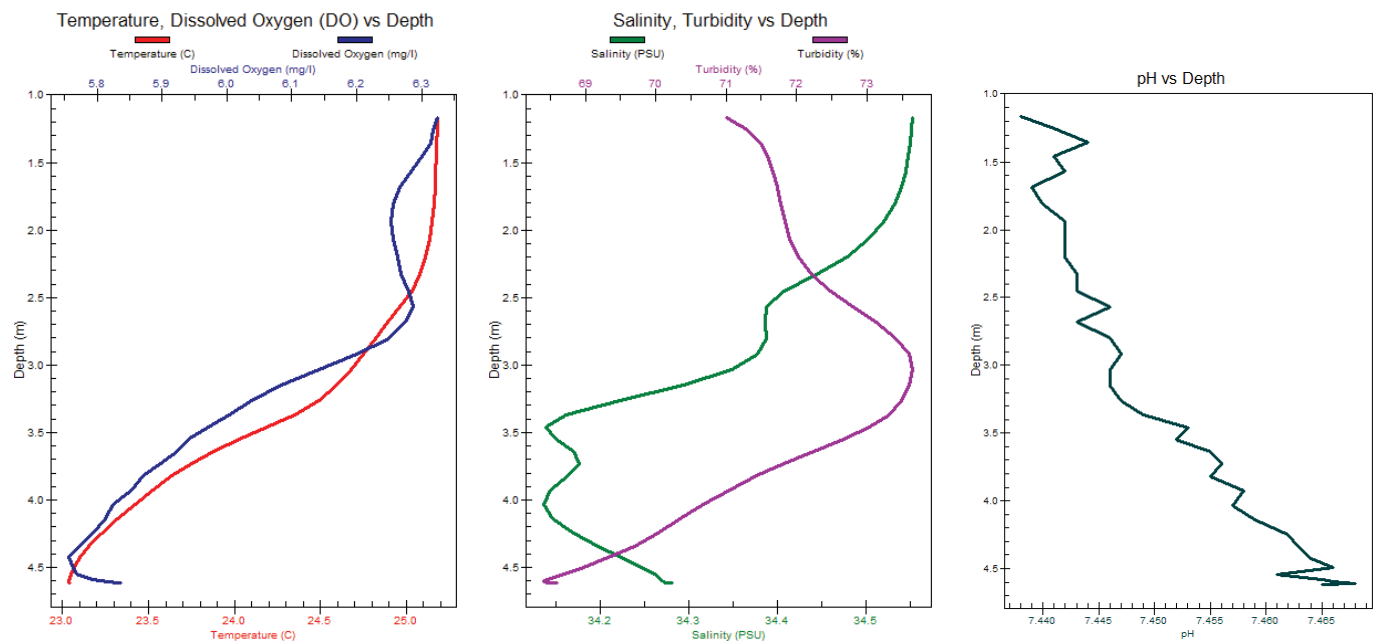
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8052



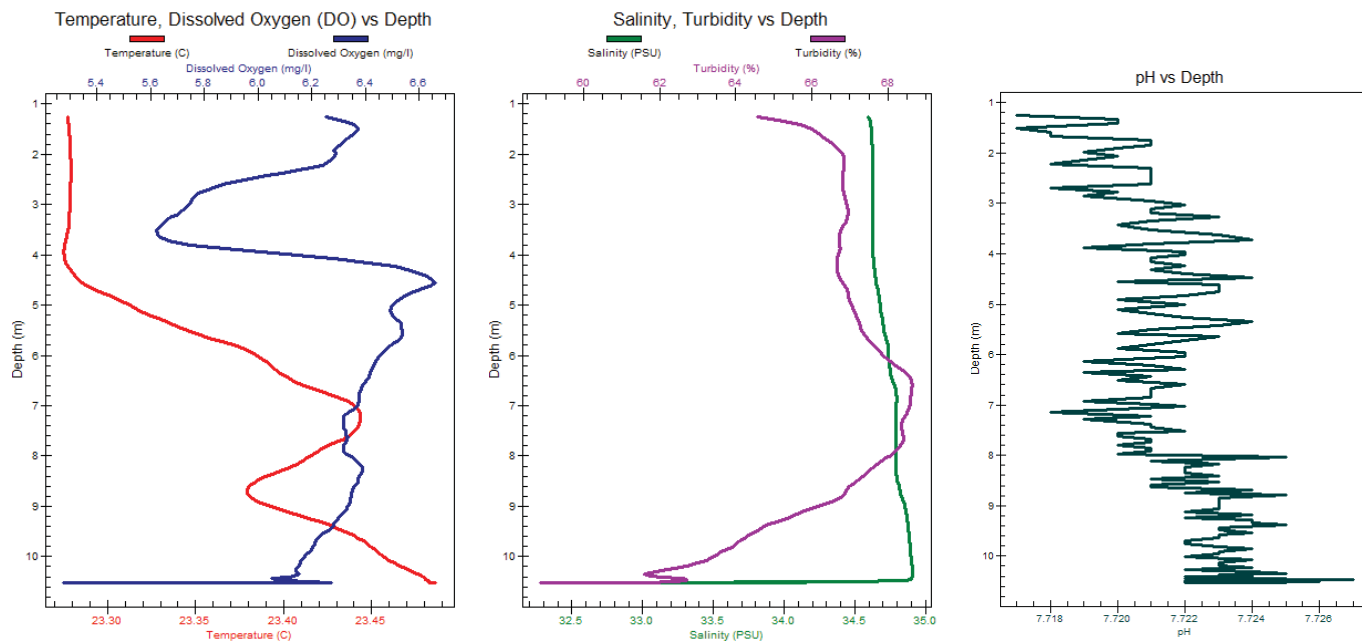
### San Diego Bay – South Central, B13-8053



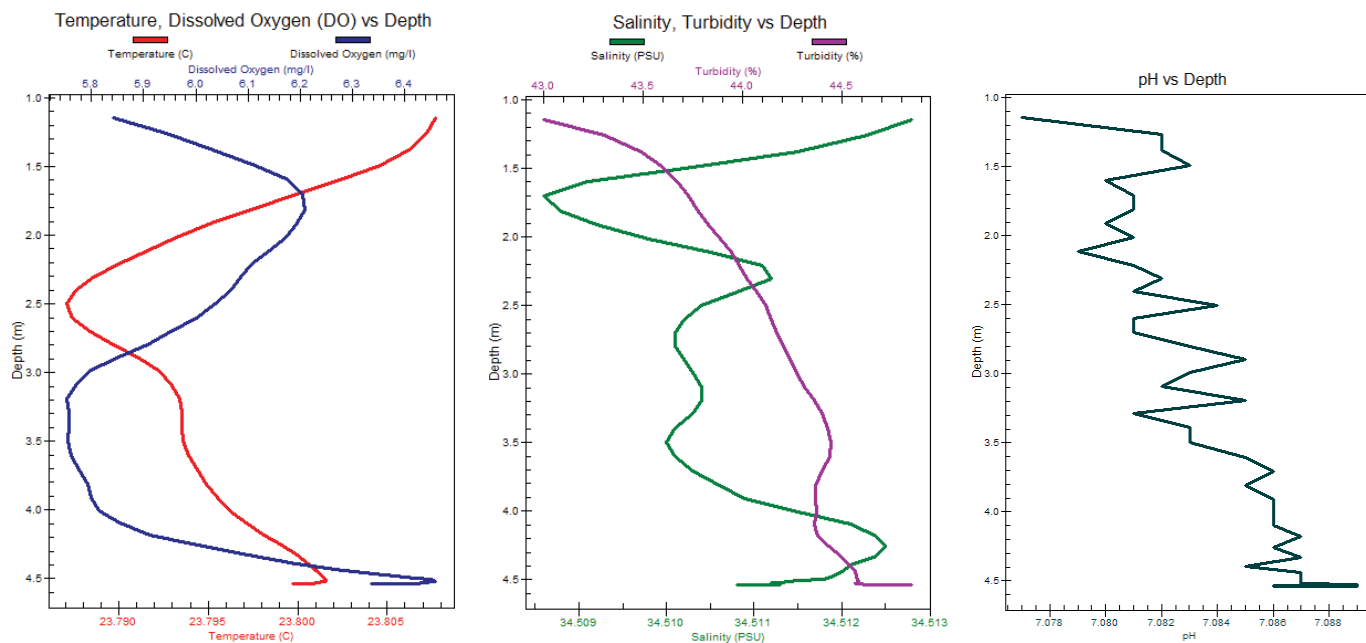
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8056



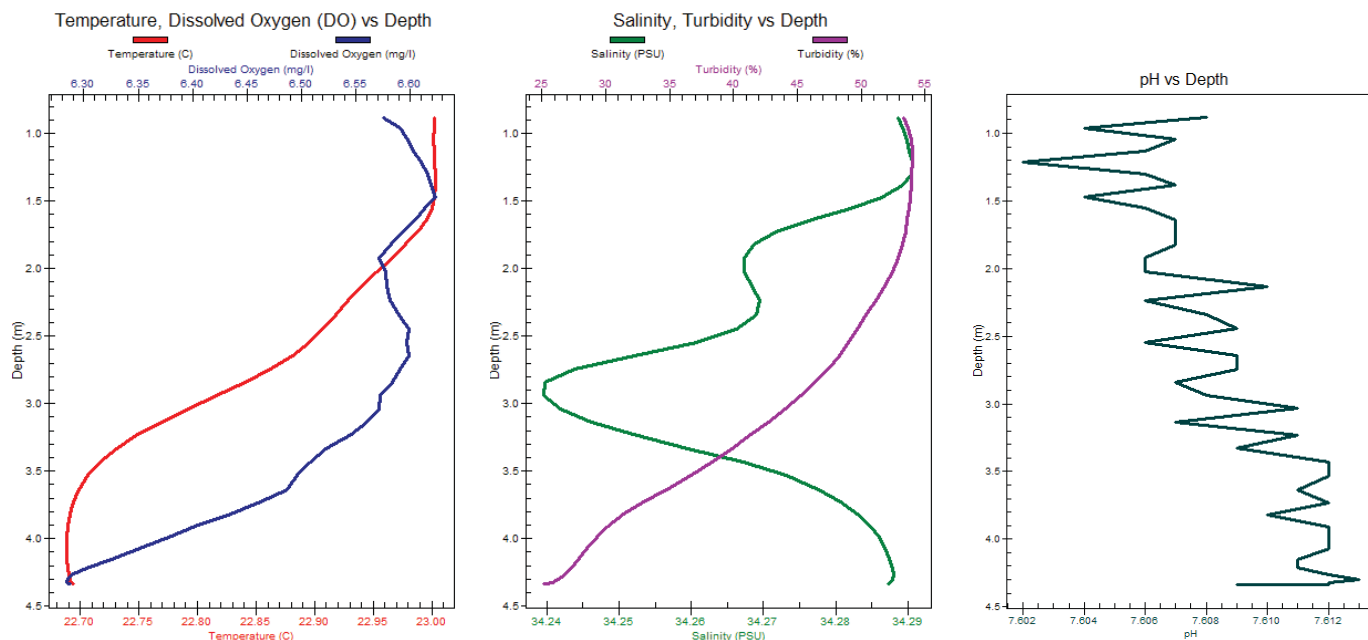
### San Diego Bay – South Central, B13-8058



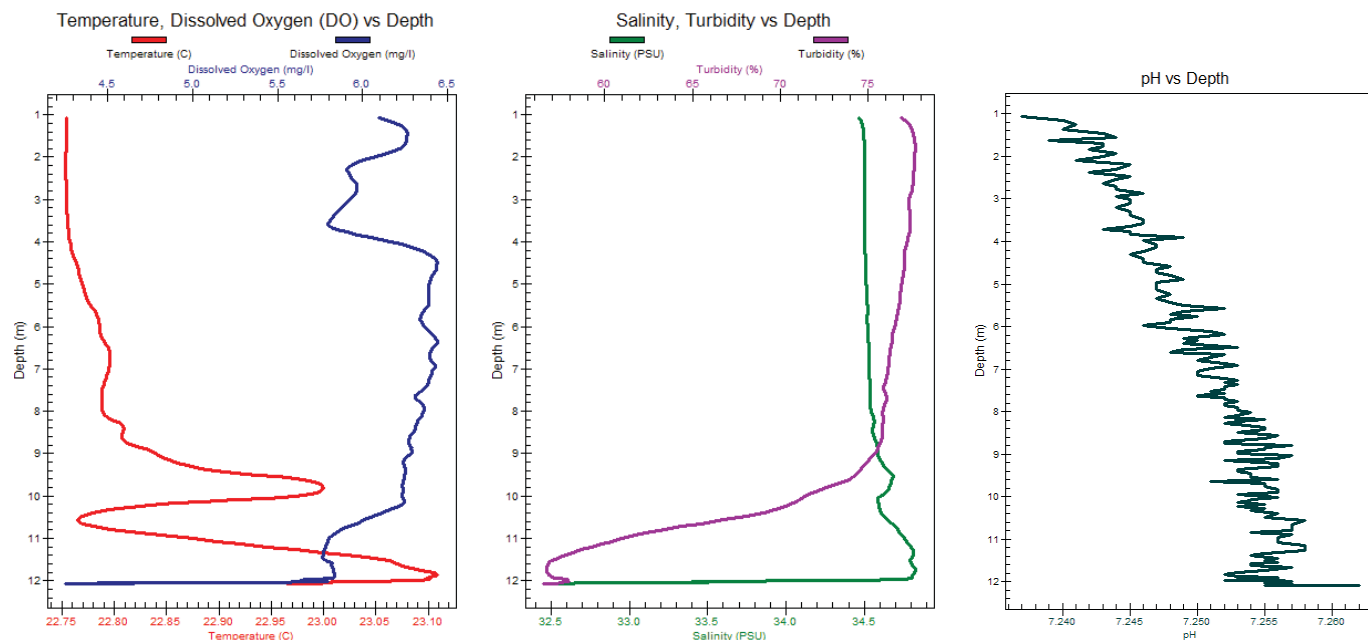
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8060



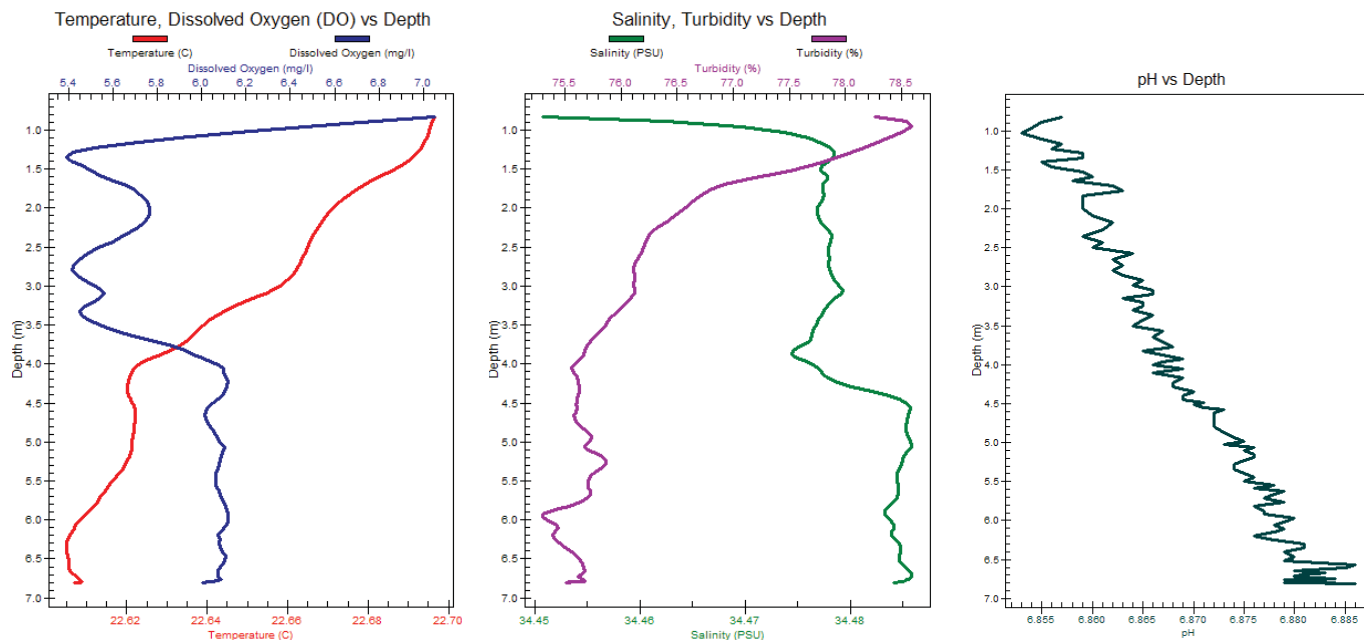
### San Diego Bay – South Central, B13-8064



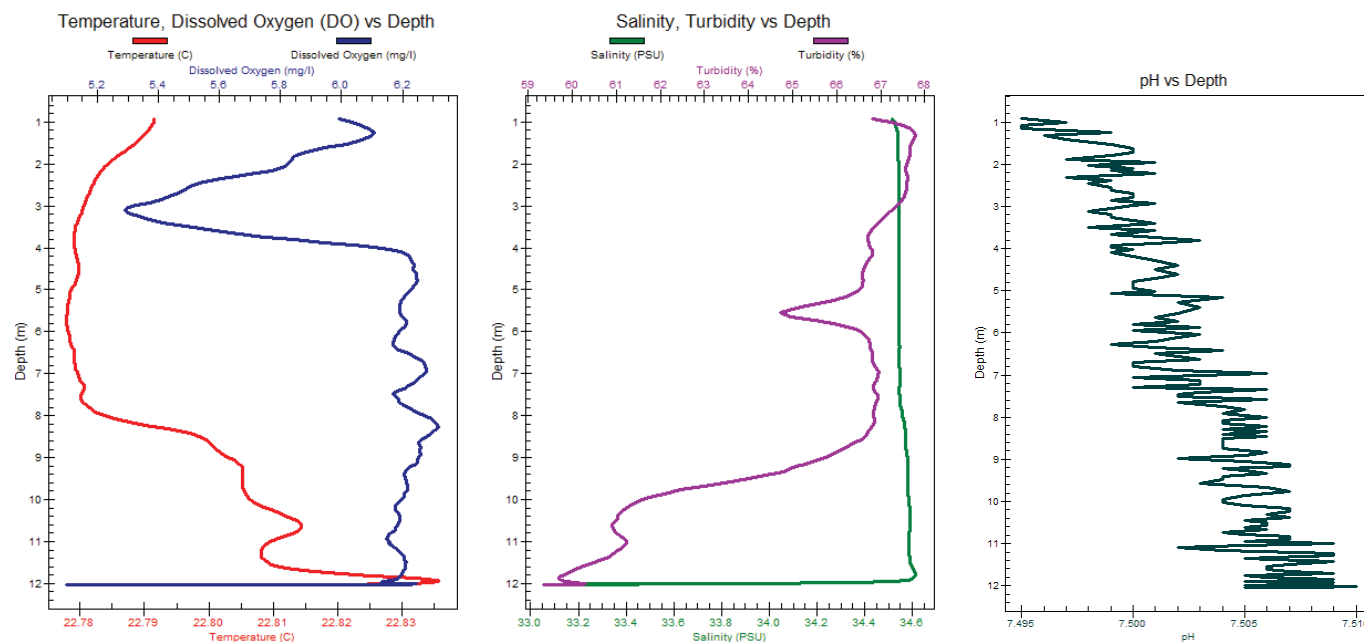
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8065



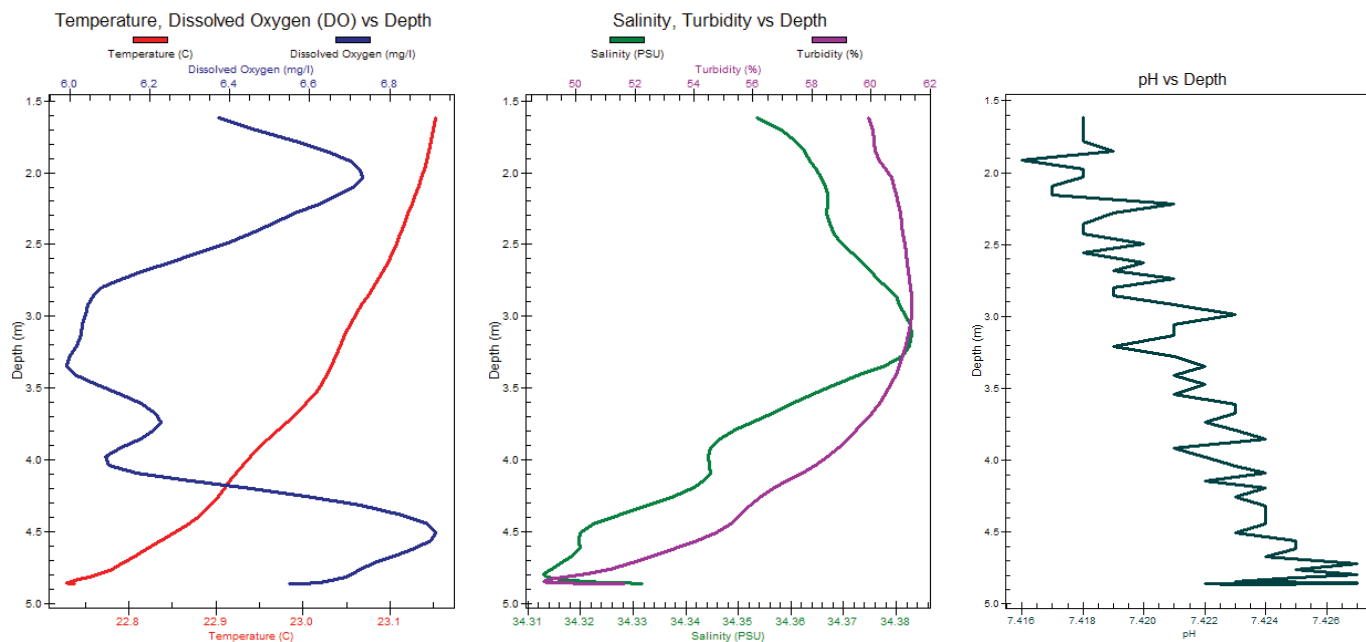
### San Diego Bay – South Central, B13-8066



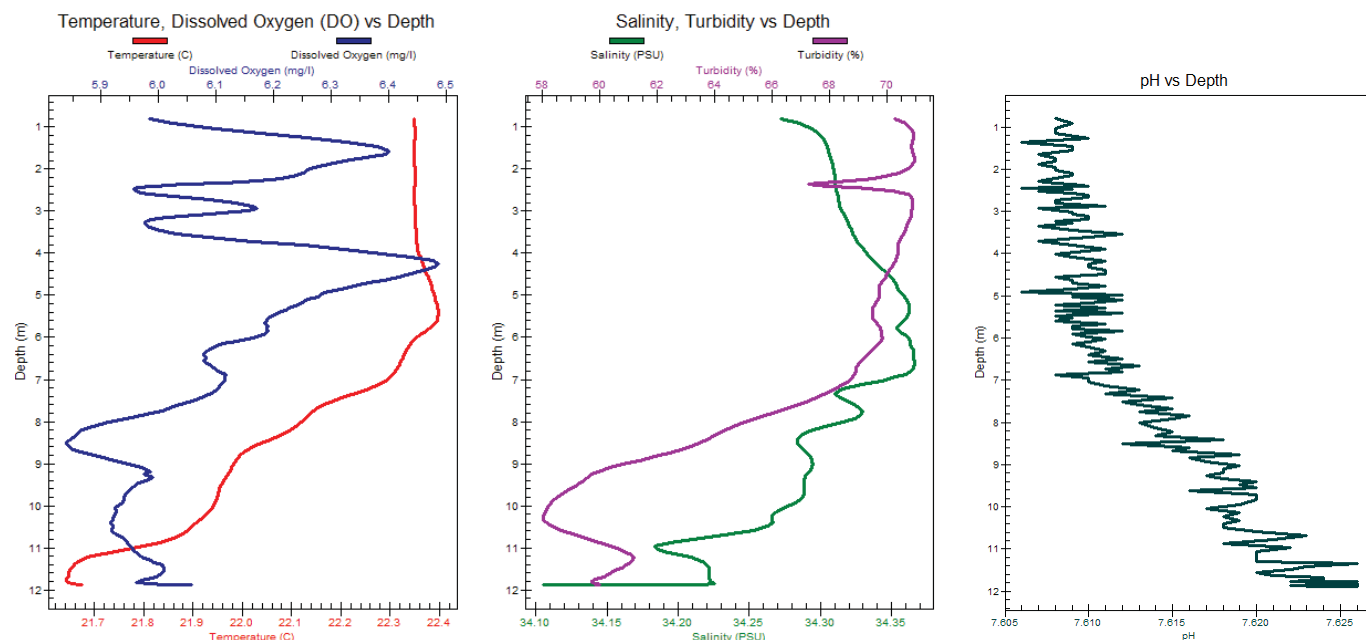
Regional Harbor Monitoring Program - Bight '13  
AMEC Project No. 1315102302  
August - September 2013



### San Diego Bay – South Central, B13-8068



### San Diego Bay – South Central, B13-8069

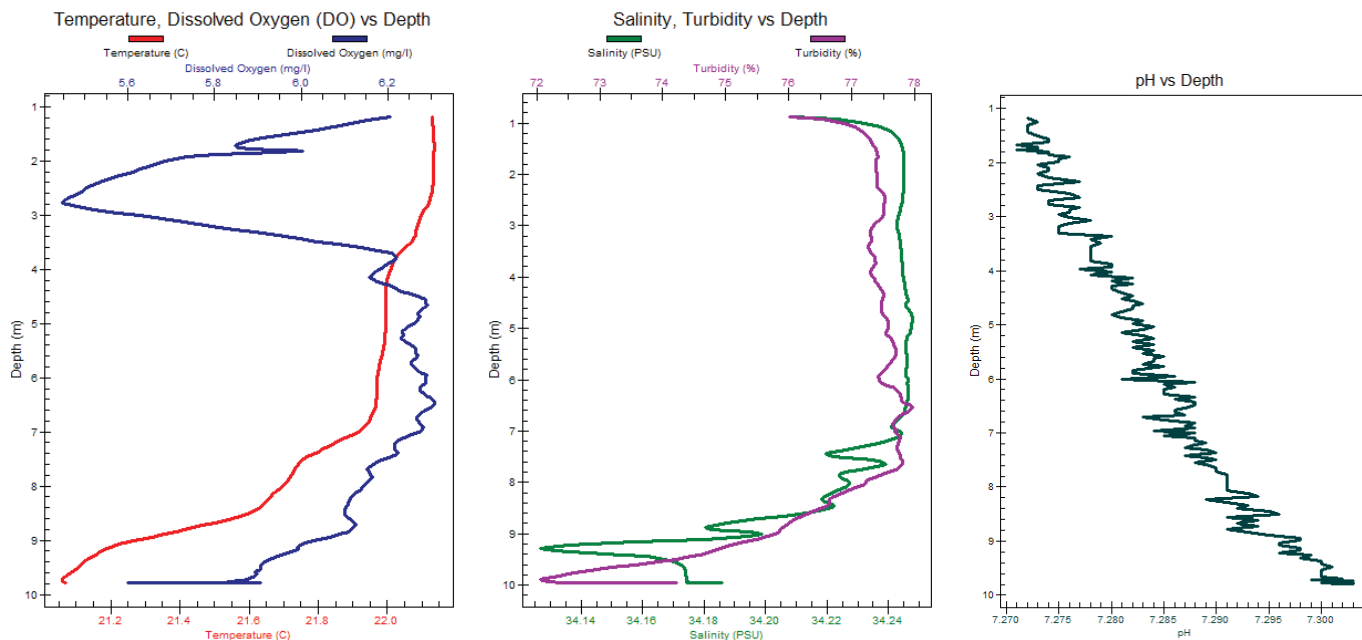


Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013

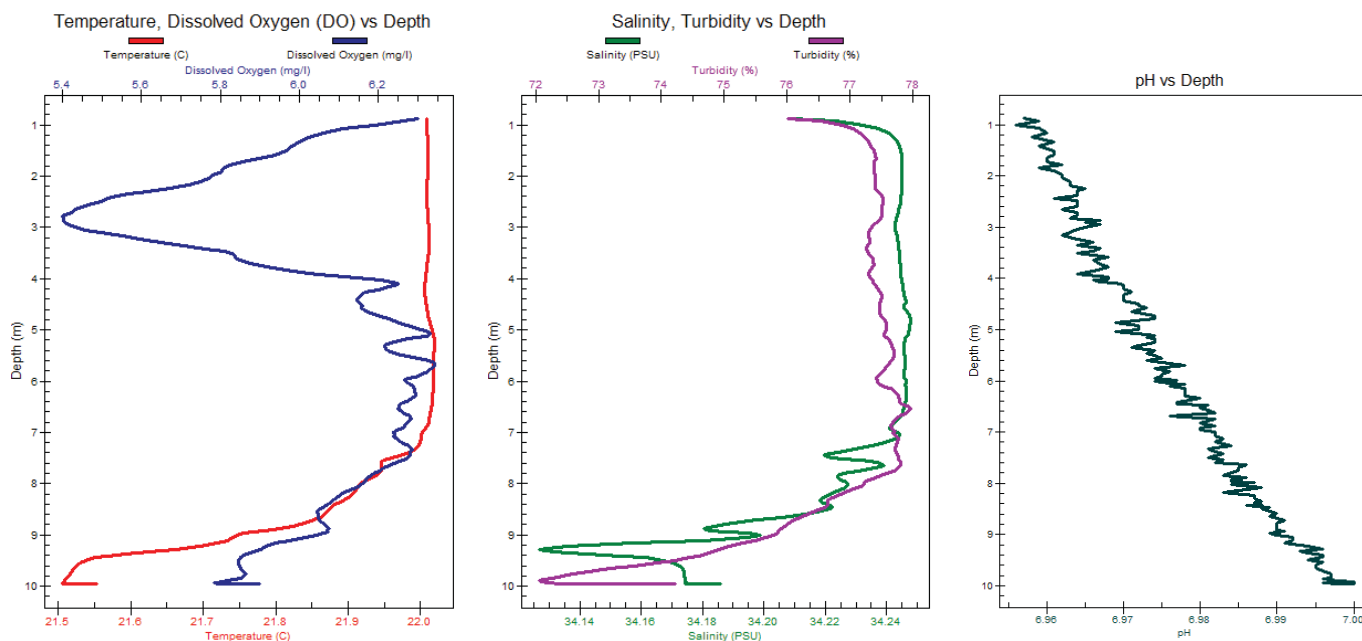




### San Diego Bay – South Central, B13-8074



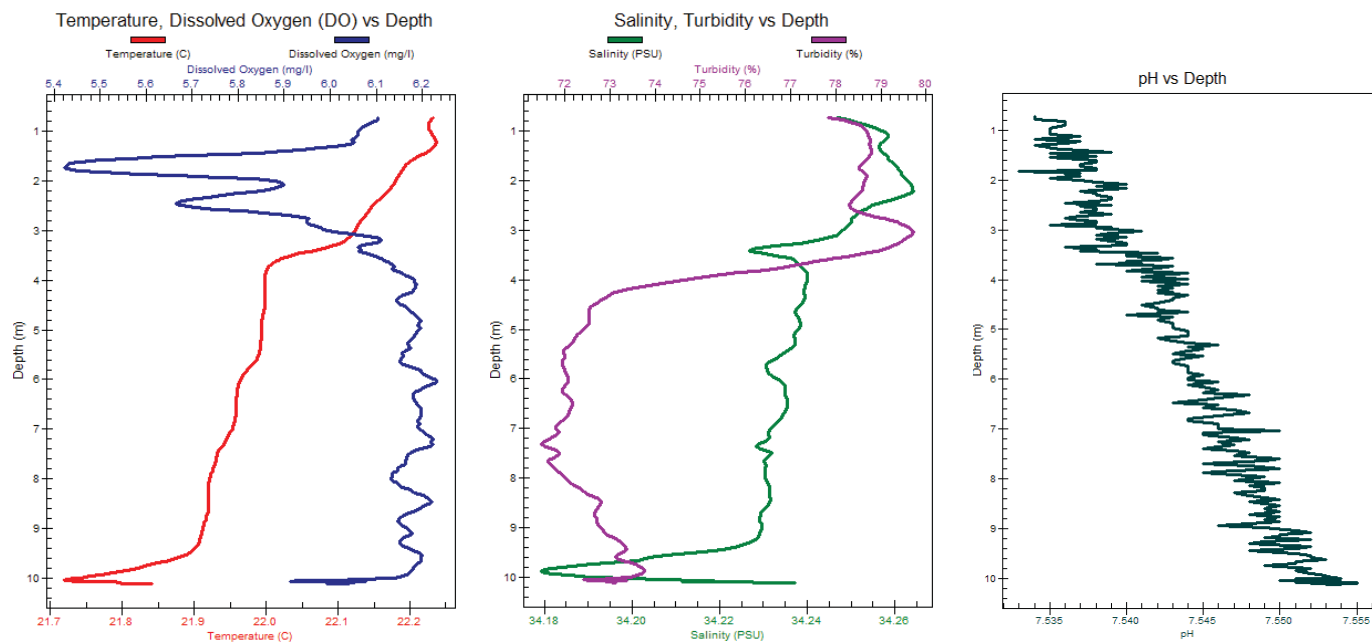
### San Diego Bay – South Central, B13-8075



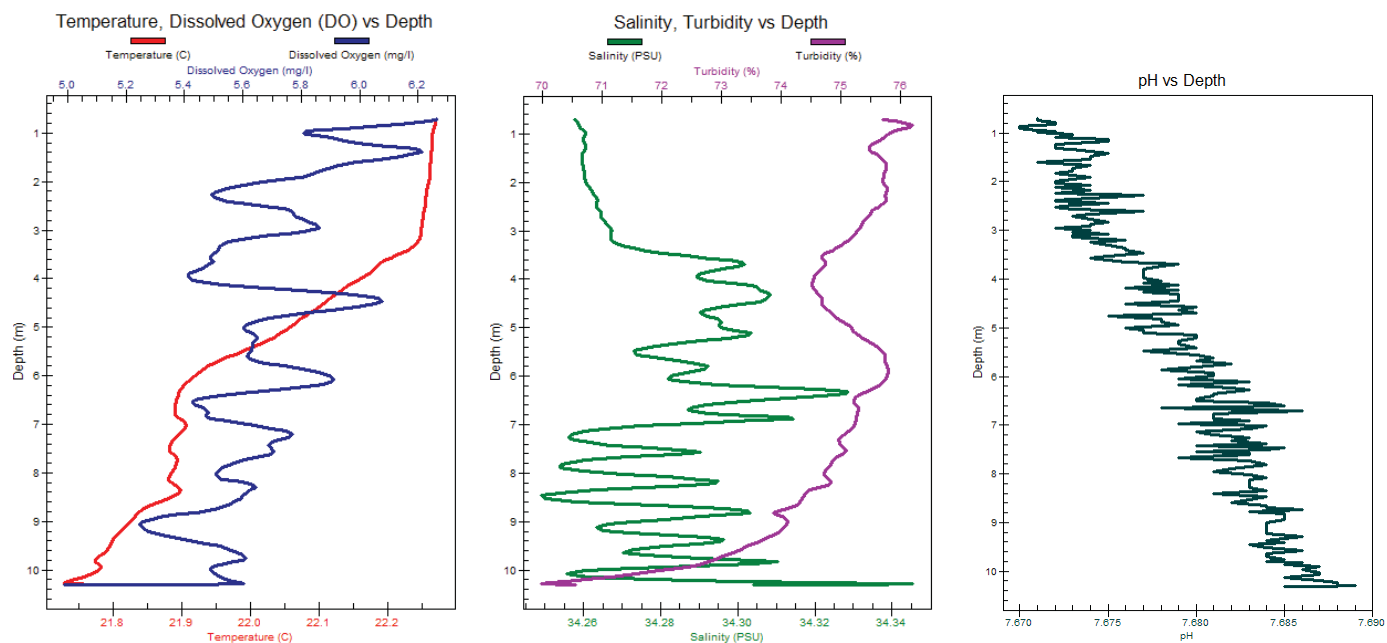
Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



### San Diego Bay – South Central, B13-8076



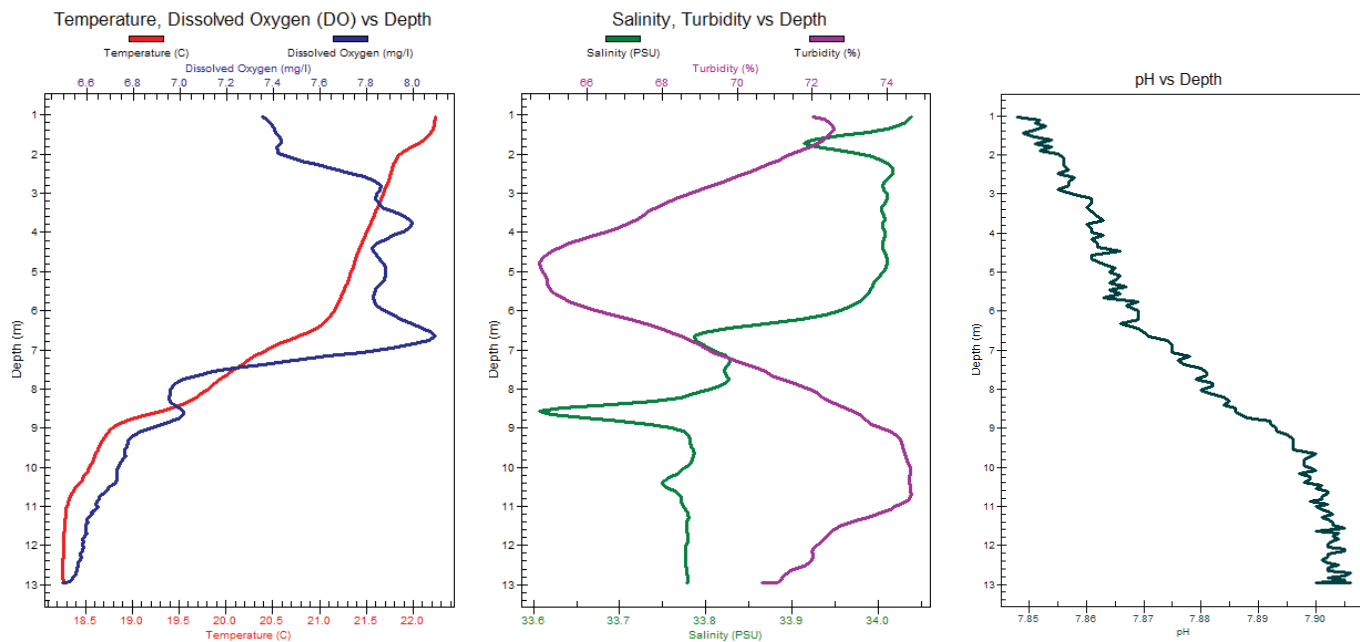
### San Diego Bay – South Central, B13-8077



Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



## San Diego Bay – South Central, B13-8078



Regional Harbor Monitoring Program - Bight '13  
 AMEC Project No. 1315102302  
 August - September 2013



# Field Data Sheets

# Dana Point Harbor

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: AMEC RHPD

Page 1 of 1

DATE: 8/5/13

COMPLETED BY: JR

[illegible]

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: AMEC RHPD

Page 1 of 1

DATE: 8/5/13

COMPLETED BY: JTR

[illegible]

(714) 755-3229

## STATION OCCUPATION

BIGHT'13

Agency Code RAMP

Salinity (ppt)

Station ID D13-8263

Sea State

☒ Calm  
☐ Choppy  
☐ Rough

Weather

☒ Clear  
☐ Overcast  
☐ Partly cloudy  
☐ Drizzle  
☐ Rain  
☐ Thunderstorm  
☐ Fog
Vessel Name Bella Bird

At estuary Sites only

Date 8/5/13Arrival Time 1426
 Abandoned site?  
 Y or N (if Y explain in comments)
Station Fail Code None

Wind

Speed (kts) 3

Swell

Period (s) 0Direction (4) NHeight (ft) 0Direction (4) 0

Nav Type

☒ DGPS  
☐ GPS

Station Comments

Equipment Type

☐ Van Veen  
☒ Tandem Van Veen

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem (Y/N)	Grain Size	Sed Tox	Debris (Y/N)	Photos
1	1455	33.46066	-117.70586	5.1	14	None	8	Silt	None Olive	None Olive	N				X	N	0021-0023
Grab Event Comments: One grab for <del>sediment</del> , 2nd for benthic bioaccum																	
2	1505	33.46066	-117.70586	5.1		Rocks	0	Clay/Rock									
Grab Event Comments: Failed grab; rock only																	
3	1525	33.46029	-117.70573	5.0	51	None	9	Sand/Silt	None Olive	None Olive	N	X	X	X		N	0024-0027
Grab Event Comments: Left over clam grabbed for more benthic bioaccum																	
4	1542	33.46027	-117.70568	5.1	56	None	12	Silt	None Olive	None Olive	N				X		0028-0030
Grab Event Comments: Second grab for tox																	
Grab Event Comments:																	
Grab Event Comments:																	

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.),

Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.),

Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.),

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only



CTD Field Data Sheet

Date: 8/8/13

Time: 1435

Station ID: B13-8263

Water Depth: 5.1 m

Tide: —

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8263

Arrival Date/Time: 8/5/13 1426

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

*done first based on grab acceptability*

Samples collected in following order: benthic infauna, chem, tox, <u>bioaccum?</u>	N
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	<del>NA</del> Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	N
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	Y
All invertebrates positively identified (make note of any FIDs)?	N
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

← not possible given bottom topography

— one Turban snail FID

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	Y
Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	Y
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	NA
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	NA
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

given  
directly  
to courier

Additional Notes:

Signature of QA/QC Personnel:

Date/Time: 8/6/13 1400

Print Name/Company:

John Rodolphe Amec

## STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Salinity (ppt)

Station ID B13-8265

Sea State

☒

Rain

☒

Calm

Vessel Name Early Bird

At estuary Sites only

Date 8/5/10

Partly cloudy

Thunderstorm

Choppy

Arrival Time 1228  
(hh:mm)☐

Fog

☐

Rough

Drizzle

Abandoned site?

Station Fail Code None

Y or N (if Y explain in comments)

☒

Wind

Swell

Speed (kts)

Period (s)

6.1☒

DGPS

Direction (4)

Height (ft)

NW☐

GPS

Direction (4)

Direction (4)

0

Station Comments

Nav Type

Equipment Type

Van Veen

☒

Tandem Van Veen

## GRAB EVENTS

Sample types (chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1301	33.46095	-117.70226	4.1	109	None	9	Fine sand	None L.Bm	N	N	N	X				N	
Grab Event Comments: One tandem grab slumped																	
1308	33.46088	-117.70215	4.0	114	None	9	Fine sand	None L.Bm	N	N	N		X	X		N	0014-0016
Grab Event Comments:																	
1322	33.46088	-117.70213	4.1	102	None	11	Fine sand	None L.Bm	N	N	N				X	N	0017-0020
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/5/13

Time: 1240

Station ID: B13-8265

Water Depth: 4.1m

Tide:

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) JA AF Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8265

Arrival Date/Time: 8/5/13 1228

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	



## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

handed directly to carrier

Additional Notes:

Signature of QA/QC Personnel:

Date/Time: 8/6/13 1400

Print Name/Company:

John Rudolph Amec

## STATION OCCUPATION

Agency Code RHMPVessel Name Ecky BirdArrival Time 1100  
(hh:mm)

## Weather

Clear ☐  
Overcast ☒  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐

## Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

At estuary Sites only

Date

8/15/13

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code

None

## Wind

Speed (kts)

3.8

Direction (4)

NW

## Swell

Period (s)

0

Height (ft)

0

Direction (4)

0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☒  
Tandem Van Veen ☐

## Station Comments

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1145	33.46207	-117.70212	3.2	22	22	None	16	Silt	None	Olive	N	X	X	X	X	N	0066-0008
Grab Event Comments:																	
1200	33.46207	-117.70212	3.2	22	22	None	16	Silt	None	Olive	N				X	N	0009-0010
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

Sample types (Chk all that apply)

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.),

Vessel safety (comment req.), No Access Allowed (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only

BIGHT'13

Station ID 17-D-8267

CTD Field Data Sheet

Date: 8/5/13

Time: 1109

Station ID: B13-8267

Water Depth: 3.2m

Tide:

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) None

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-5267

Arrival Date/Time: 8/5/13 1100

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

#### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

#### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8267

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/6/13 1400

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

- directly handed to courier

## STATIC OCCUPATION

Am = 42400

Bl'13

Agency Code **343-820-6**

## Weather

## Sea State

Salinity (ppt)

Station ID

Vessel Name	Ev4 Bird
-------------	----------

## Overcast

## Thunderstorm

## Choppy

**At estuary Sites only**

Arrival Time (hh:mm) 0840

(hh:mm)



## Abandoned site?

Y or N (If Y explain in comments)

Wind

## Swell

Speed (kts)

Period (s)

**Direction (4)**

Height (ft)

### Direction (4)

1

pe

### Equipment Type

**Van Veen**

**Van Veen**

1

**Van Veen**

## GRAB EVENTS

[illegible]

- |   |  |
|---|--|
| 1 | Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed   |
| 2 | Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)   |
| 3 | Sediment Color: Brown, Gray, Black, Olive green, Red   |
| 4 | Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm   |
| 5 | Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.) |
| 6 | Station Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Turbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only   |

CTD Field Data Sheet

Date: 8/5/13

Time: 0852

Station ID: B13-8259

Water Depth: 4.1m

Tide: —

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:



## FIELD SAMPLING QA CHECKLIST

Station ID: B13-82N-9

Arrival Date/Time: 8/5/13 0840

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

829

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	
Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes:

Signature of QA/QC Personnel:

Date/Time: 8/6/13 1400

Print Name/Company:

John Rudolph AMEC

Y - directly  
handed  
to  
courier

# STATION OCCUPATION

BIGHT'13

Agency Code 24MP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID 313-8263

Date 8/5/13

Arrival Time 1727  
(hh:mm)

N

Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 3.8

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	P/T Sensor Data (Y/N)	Community Structure (Y/N)	Tissue Chemistry (Y/N)
1	Net Over	1728	33.46166	-117.70545	4.0	2024		None	Y	Y	Y
	Start Trawl	1732	33.45981	-117.70559							
	End Trawl	1740	45.733.45788	-117.70081	7.2						
	Net on Deck	1741	33.45788	-117.70049	7.6						
	Net Over										
	Start Trawl										
	End Trawl										
	Net on Deck										
	Net Over										
	Start Trawl										
	End Trawl										
	Net on Deck										

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: BB-8263

Page 1 of 1

Date: 8/5/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

	Species	N	Std Length Size Class (cm) Use for up to 10 Individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
					Gross	Tare	Net	
1	Bat Ray	1	61 (3x wide)		1.0	0.75	0.65	Y
2	Diamond Turbot	1	20				0.21	Y
3	Giant Kelpfish	1	17				<0.1	Y
4	Spotfin Croaker	1	23				0.25	Y
5	California Halibut	5	20, 16, 19, 19, 27		1.0	0.35	0.65	Y
6	Shiner Perch	1	10				<0.1	Y
7	White Perch	1	9				<0.1	Y
8	Kelp Bass	1	13				<0.1	Y
9	Darred Sand Bass	2	13, 11				<0.1	Y
10	California Lizardfish	6	11, 13, 13, 12, 13, 12				<0.1	Y
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Composite Lx. of <0.1 =  $\frac{6}{0.65} - \frac{1}{0.35} = 0.275 \text{ kg}$

QA Pass/Fail: (circle) Yes No NA (not available)

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8263 Dana Pt.

Page 1 of 1

Date: 8/5/13

Completed by: Chris Stransky

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

	Species	N	Comments (or Anomalies)	FID or Voucher #	Weight (kg)			Photos (D, L, V)
					Gross	Y/N Tare	Net	
1	Turban snail sp-FID	1	—	FID	60.1	NA	60.1	Y
2	Bulla gouldiana	4	—	—	60.1	NA	60.1	Y
3	Shrimp-Crangon nigromaculata	1	O (parasite under exoskeleton)	—	60.1	NA	60.1	Y
4								
5	* Navanax - outside net	1	—	—	60.1	NA	60.1	Y
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle) Yes No NA (not available)

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8263Trawl #: 1Agency: RAMPDate: 8/5/13Previously Measured by: BCSRe-Measured by: LHOriginal Gross weight (kg) 1.0 Tare Weight (kg) 0.375 Net weight (kg) 0.625QC Re-weigh weight (kg) 1.0 Tare Weight (kg) 0.375 Net weight (kg) 0.625

Size Class	Original Species: <i>California Halibut</i>			Anomalies
	QC Re-ID: <i>California Halibut</i>			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15	1	15-16		
16		16-17		
17		17-18		
18	<del>1</del>	18-19	1	
19	<del>1</del> 1	19-20	1	
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26	<del>1</del>	26-27	1	
27		27-28		
28		28-29		
Total	5	Total		

Other Species found in sample:			QA/QC Acceptance	Pass	Fall	Initials
			Identification	<u>X</u>		<u>SR</u>
			Count	<u>X</u>		
			Length		<u>X</u>	
			Biomass	<u>X</u>		
Other species Weight (kg)			Pathology	<u>X</u>		
Gross	Tare	Net	Notes: <u>One out of 5 incorrect lengths.</u>			
			<u>Discussed with BCS. Too small sample sizes.</u>			

Anomaly Codes (record as superscript to length measurement): A = amebicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8265 Trawl #: 1 Agency: RHMP  
 Date: 8/5/13 Previously Measured by: BCS  
 Re-Measured by: LH

Original Gross weight (kg) <0.1 Tare Weight (kg) 0.375 Net weight (kg) <0.1  
 QC Re-weigh weight (kg) <0.1 Tare Weight (kg) 0.375 Net weight (kg) <0.1

Size Class	Original Species: CA Lizardfish			Anomalles
	QC Re-ID: CA Lizardfish			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11		
11	1	11-12	11	
12	11	12-13	1	
13	11	13-14	1	
14		14-15		
15		15-16		
16		16-17		
17		17-18		
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total		Total		

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	<u>X</u>		<u>JR</u>
			Count	<u>X</u>		
			Length	<u>X</u>		
			Biomass	<u>X</u>		
Other species Weight (kg)			Pathology	<u>X</u>		<u>J</u>
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #



**BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM**Station: B13-8263 Duna Pt. Trawl #: 1 Agency: AMECDate: 8/5/13 Previously Measured by: Mary TamburroRe-Measured by: Chris Stransky**Species #1**

Original Species name: <u>Bulla gouldiana</u>				
QC Re-ID Species name: <u>Bulla gouldiana</u>				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
<u>None noted</u>	<u>4</u>	<u>20.1</u>	<u>NA</u>	<u>20.1</u>
Other species found in lot				
1				
2				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

**Species #2**

Original Species name: <u>Crangon nigromaculata</u>				
QC Re-ID Species name: <u>Crangon nigromaculata</u>				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
<u>Parasite noted under exoskeleton</u>	<u>1</u>	<u>20.1</u>	<u>NA</u>	<u>20.1</u>
Other species found in lot				
1				
2				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

**Species #1**

QA/QC Acceptance			
Metric	Pass	Fail	Initials
ID	✓		<u>Bcs</u>
Count	✓		<u>Bcs</u>
Biomass	✓		<u>Bcs</u>
Anomalies	✓		<u>Bcs</u>

**Species #2**

QA/QC Acceptance			
Metric	Pass	Fail	Initials
ID	✓		<u>Bcs</u>
Count	✓		<u>Bcs</u>
Biomass	✓		<u>Bcs</u>
Anomalies	✓		<u>Bcs</u>

Notes:

ALIQUOT RECORDING AND CALCULATIONS WORKSHEET (If necessary)

## BIG '13 TRAWL DEBRIS FORM

Agency: RAMPPage 1 of 1Station: B13-8263 Trawl #: \_\_\_\_\_ Date: 8/5/13CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

Anthropogenic Debris - Include Brand Names in Comments if known	Plastic			Misc. Items/Pieces			
	Count	Comment	Count	Comment			
		Bag		Boat/Ship/Engine part			
		Bandaid		Clothing			
		Balloon (mylar/latex)/Ribbon		Concrete/Asphalt			
		Bottle		Fiberglass			
		Buoy		Food			
		Cap/Lid		Leather			
		Cigarette box/wrapper		Lumber			
		Cup		Paper			
		Filmstrip (movie)		Rag/Cloth			
		Fishing Line/Net		Rubber			
		Food Bag / Wrapper		Shoe			
		Polypropylene Rope		Tape			
		Straw		Tire			
		Toy		Other Misc. (comment req.)			
		Utensil					
		Plastic Piece (unid.)					
		Other Plastic (comment req.)					
Glass	Count	Comment	Metal	Count	Comment		
		Beer Bottle			Drink Can		
		Glass Bottle/Jar -other			Can - other		
		Glass Piece (unid.)			Can Pull-tab		
		Other Glass (comment req.)			Fishing Gear		
					Wire		
					Metal Piece (unid.)		
					Other Metal (comment req.)		
Marine Origin	Count	Est.*	Comment	Terrestrial Vegetation	Count	Est.*	Comment
	3		brn algae				Leaves/Seed Pod
							Stick/Branch/Driftwood
							Other Terrest. (comment req.)
	2		4 ft. stripes				
	3		3 clumps				

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: JR

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8263

Arrival Date/Time: 8/5/13 1426

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

*done first based on grab acceptability*

Samples collected in following order: benthic infauna, chem, tox, <u>bioaccum?</u>	N
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	<del>NA</del> Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	N
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	Y
All invertebrates positively identified (make note of any FIDs)?	N
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

← not possible given bottom topography

— one Turban Snail FID

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	Y
Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	Y
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	NA
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	NA
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

given directly to courier

Additional Notes:

Signature of QA/QC Personnel:

Date/Time: 8/6/13 1400

Print Name/Company:

John Rodolphe Amec

# Oceanside Harbor

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/6/13

COMPLETED BY: 

[illegible]

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/6/13

COMPLETED BY: JR

[illegible]



## STATION OCCUPATION

Agency Code RKMP

Weather

Clear

Overcast

Partly cloudy

Drizzle

☐☒☐☐

Rain

Thunderstorm

Fog

☐☐☐

Sea State

Calm

Choppy

Rough

☒☐☐

Salinity (ppt)

At estuary Sites only

Station ID

B13-8233

Date

8/6/13

Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code

None

Wind

Speed (kts)

0

Direction (4)

-

Swell

Period (s)

0

Height (ft)

0

Direction (4)

0

Nav Type

DGPS

☒

GPS

☐

Equipment Type

Van Veen

☐

Tandem Van Veen

☒

Station Comments

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
	0846	33.20470	-117.39083	4.2	19	None	16	Sandy Silty	None	Olive	N	X	X	X		N	0031 - 0032
Grab Event Comments:																	
	0902	33.20470	-117.39083	4.2	19	Debris	0									Y	
Grab Event Comments: Hand net trevise both grabs, partial closure																	
	0906	33.20470	-117.39083	4.2	19	None	16	Sandy Silty	None	Olive	N				X	Y	0039 - 0040
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/6/13

Time: 0800

Station ID: B13-8233

Water Depth: 4.3m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

— little film on surface, most likely  
organic breakdown

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8233

Arrival Date/Time: 8/6/13 0750

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

#### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

#### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	X
Field staff wearing fresh, powder free nitrile gloves?	X
Equipment washed/rinsed from previous station?	X
Vessel engine has been shut off for 3-5 minutes prior to sampling?	X
Sampling instrument washed with Alconox?	X
Sampling instrument given site water rinse prior to deployment?	X
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	X
Sample bottles are lab certified, contaminant free?	X
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	X
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	X
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	X
Grab disposition / characteristic information recorded?	X
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	X
Sediment evenly distributed among containers?	X
Stainless steel or plastic scoop used to distribute sediment?	X
Staff avoided contaminating samples at all times?	NA
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8237

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	
Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y NA
DNA samples preserved with 95% ethanol?	Y NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

— given directly to carrier

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/6/13 1400

Print Name/Company: \_\_\_\_\_

John Rudolph Amec

# BIGHT'13

Station Comments

*(Handwritten signature)*

1	Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
2	Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
3	Sediment Color: Brown, Gray, Black, Olive green, Red
4	Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
5	Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
	Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed face, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/6/13

Time: 0950

Station ID: B13-8236

Water Depth: 6.0m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) None

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) None

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8236

Arrival Date/Time: 8/6/13 0940

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8236

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y NA
DNA samples preserved with 95% ethanol?	Y NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rodolph Amec Date/Time: 8/6/13 1400

Print Name/Company: John Rodolph Amec

## STATION OCCUPATION

BIGHT'13

Agency Code RAMP

Sea State

Station ID D13-8239

Salinity (ppt)

Weather  
Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐Calm ☒  
Choppy ☐  
Rough ☐Vessel Name Early Bird

At estuary Sites only

Date 8/6/13Arrival Time 1100  
(hh:mm)

Abandoned site?

Station Fail Code None

Y or N (if Y explain in comments)

Wind

Speed (kts) 6.7

Swell

Period (s) 0Direction (4) WestHeight (ft) 0Direction (4) 0

Nav Type

DGPS ☒  
GPS ☐

Station Comments

Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1	1130	33.20793	-117.39744	7.1	55	None	16	Silt	None	Olive	N	X	X	X		N	0045-0046
Grab Event Comments:																	
2	1146	33.20787	-117.39741	7.0	49	None	16	Silt	None	Olive	N				X	N	0047-0048
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/6/13

Time: 1110

Station ID: B13-8239

Water Depth: 6.7m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Y

Samples Collected?  
(Yes / No) Y

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8289 Arrival Date/Time: 8/6/13 1100

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

#### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

#### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	Y
All invertebrates positively identified (make note of any FIDs)?	Y
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

8239

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	Y
Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	not
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	NA
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	Y
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

frozen for  
later  
formalin

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: 8/

Signature of QA/QC Personnel: John Rudolph Amec

Date/Time: 8/6/13 1400

Print Name/Company: John Rudolph Amec

## STATION OCCUPATION

BIGHT'13

Agency Code RAMP

Weather

Clear ☒Rain ☐

Sea State

Calm ☒

Nav Type

DGPS ☒Station ID 013-8239Vessel Name Early BirdOvercast ☐Thunderstorm ☐Choppy ☐GPS ☐Date 8/6/13Arrival Time 1405  
(hh:mm)Partly cloudy ☐Fog ☐Rough ☐Drizzle ☐

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 9.7Direction (4) West

Swell

Period (s) 0Height (ft) 0Direction (4) 0

Station Comments

① fouled net - net twisted

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	P/T Sensor Data (Y/N)	Community Structure (Y/N)	Tissue Chemistry (Y/N)
1	Net Over	1414	33.20830	-117.39503	6.8	200R		fouled net			
	Start Trawl	1415	33.20822	-117.39682	7.8	30					
	End Trawl	1424	33.20662	-117.40166							
	Net on Deck	1426	33.20656	-117.40157	8.1						
2	Net Over	1435	33.20849	-117.39522	6.2			None	Y	Y	Y
	Start Trawl	1437	33.20811	-117.39707	7.1	30					
	End Trawl	1445	33.20734	-117.40259	7.5						
	Net on Deck	1448	33.20770	-117.40298	7.1						
	Net Over										
	Start Trawl										
	End Trawl										
	Net on Deck										

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)



# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8239

Page 1 of 1

Date: 8/6/13

Completed by: LH, TH

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
				Gross	Tare	Net	
1 <i>Ca. Halibut</i>	1	48 mm		1.0	N/A	1.2	y.
2 <i>Round Ray</i>	1	33 (length) / 19 (width)	Y	0.4	N/A	0.4	y.
3 <i>White Sea Bass</i>	1	19.	Y	0.1			y.
4 <i>Barrel Sand Bass</i>	2	9, 16 cm		0.1			y.
5 <i>Tongue Fish</i>	3	10, 8, 9	Y	0.1			y.
6 <i>Giant Kelp Fish</i>	2	8, 8		0.1			y.
7 <i>White Perch</i>	5	20, 15, 13, 15, 17		0.8	0.375	0.425	y.
8 <i>Lizard Fish</i>	13	31, 23, 16, 13, 12, 12, 14, 14, 15, 17, 14, 12, 12		0.95	0.375	0.575	y.
9 <i>Queen Fish</i>	16	4, 4, 4, (see other sheet)	Y	0.1	NA		y.
10 <i>Spot Fin Croaker</i>	4	14, 21, 22, 22		1.05	0.375	0.675	y.
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: 0.60 kg. total. 0.375 tare (bucket)  
5 fish 3, 4, 5, 6, 9 species.

QA Pass/Fail: (circle) Yes No NA (not available)  
\*see note on fish QC form

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8239

Page 1 of 1

Date: 8/6/13

Completed by: TH, LH

Gross weight (kg) < 0.1

Tare Weight (kg) 0.375

Net weight (kg) 20.14g

Size class	N	Species: <u>Queen Fish (sm - 115)</u>	Anomalies
1			
2			
3	<u>1</u>	<u>Q1</u>	
4	<del>111</del> <u>1</u>	<u>11</u>	
5	<u>11</u>	<u>2</u>	
6	<u>11</u>	<u>2</u>	
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments: Small Queen Fish

Total Abundance

16

QA Pass/Fail: (circle) Yes No NA (not available)

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8239

Page 1 of 1

Date: 8/6/13

Completed by: Chris Strandy / Mary Tanhore

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

	Species	N	Comments (or Anomalies)	FID or Voucher #	Weight (kg)			Photos (D, L, V)
					Gross	Y/N	Net	Y/N
1	Cancer antennarius	1	Balanus sp. growing on carapace	Y photo		Y	0.150	Y
2	Portunus xantusii	10	+ Gravid	Y	0.125	Y	0.120	Y
3	Crangon nigromaculata	1		Y photo		Y	<0.1	Y
4	Penaeus californicus	1		Y		Y	<0.1	Y
5	Conus californicus	1		Y		Y	<0.1	Y
6	Bulla gouldiana	1		Y		Y	<0.1	Y
7								
8								
9	*Loose isopod sp	1		FID #1		Y	<0.1	Y
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Balan wt  
all <0.1  
orgs.

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: \* Vouchered Cancer antennarius - DNA of 1 leg only. Released crab due to being gravid.

QA Pass/Fail: (circle) Yes No NA (not available)

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8239Trawl #: 2Agency: RHMDDate: 8/6/13Previously Measured by: LHRe-Measured by: JROriginal Gross weight (kg) 20.1 Tare Weight (kg) 0.375 Net weight (kg) 20.1QC Re-weigh weight (kg) <0.1 Tare Weight (kg) 0.375 Net weight (kg) <0.1

Size Class	Original Species: Tongue fish			Anomalies
	QC Re-ID: Tongue fish			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7	1	
7		7-8		
8	1	8-9		
9	1	9-10	1	
10		10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15		15-16		
16		16-17		
17		17-18		
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total	2	Total	1	3

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	X		JR
			Count	X		
			Length		X	
			Biomass	X		
Other species Weight (kg)			Pathology	X		
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "and #"

discussed with LH, measured tongue as total length, not standard length. All others measured to st.

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8239Trawl #: 2Agency: RHMPDate: 8/6/13Previously Measured by: LHRe-Measured by: SROriginal Gross weight (kg) < 0.1 Tare Weight (kg) 0.375 Net weight (kg) < 0.1QC Re-weigh weight (kg) < 0.1 kg Tare Weight (kg) 0.375 kg Net weight (kg) < 0.1 kg

Size Class	Original Species: <i>Queenfish</i>			Anomalies
	QC Re-ID: <i>Queenfish</i>			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3	1	
3		3-4	1111 1	
4	1111	4-5	11	
5		5-6		
6	11	6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15		15-16		
16		16-17		
17		17-18		
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total	7	Total	9	16

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	X		SR
			Count	X		
			Length	X		
			Biomass	X		
Other species Weight (kg)			Pathology	X		
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixecephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

## BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM

Station: B13-8239Trawl #: 1Agency: RHMPDate: 8/6/13Previously Measured by: Mary TamborraRe-Measured by: Chris StranskySpecies #1 Portunus xantusii

Original Species name: <u>Portunus xantusii</u>				
QC Re-ID Species name: <u>Portunus xantusii</u>				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
	<u>10</u>	<u>0.125</u>	<u>.005</u>	<u>0.120</u>
Other species found in lot				
1 <u>None</u>				
2 <u>↓</u>				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #2 Conus californicus

Original Species name: <u>Conus californicus</u>				
QC Re-ID Species name: <u>Conus californicus</u>				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
<u>None</u>	<u>1</u>			<u>60.1</u>
Other species found in lot				
1 <u>None</u>				
2				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #1

QA/QC Acceptance			
Metric	Pass	Fail	Initials
ID	✓		BCS
Count	✓		BCS
Biomass	✓		BCS
Anomalies	✓		BCS

Species #2

QA/QC Acceptance			
Metric	Pass	Fail	Initials
ID	✓		BCS
Count	✓		BCS
Biomass	✓		BCS
Anomalies	✓		BCS

Notes:

ALIQUOT RECORDING AND CALCULATIONS WORKSHEET (If necessary)

## BIGHT '13 TRAWL DEBRIS FORM

Agency: RHMPPage 1 of 1Station: B13-8239 Trawl #: 2 Date: 8/6/13CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

Anthropogenic Debris - Include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment		
		Bag				Boat/Ship/Engine part				
	Bandaids				Clothing					
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt					
	Bottle				Fiberglass					
	Buoy				Food					
	Cap/Lid				Leather					
	Cigarette box/wrapper				Lumber					
	Cup				Paper					
	Filmstrip (movie)				Rag/Cloth					
	Fishing Line/Net				Rubber					
	Food Bag / Wrapper				Shoe					
	Polypropylene Rope				Tape					
	Straw				Tire					
	Toy				Other Misc. (comment req.)					
	Utensil				Metal		Count	Comment		
	Plastic Piece (unid.)				Drink Can					
	Other Plastic (comment req.)				Can - other					
	Glass	Count	Comment		Can Pull-tab					
	Beer Bottle				Fishing Gear					
	Glass Bottle/Jar -other				Wire					
	Glass Piece (unid.)				Metal Piece (unid.)					
	Other Glass (comment req.)				Other Metal (comment req.)					
Natural Debris	Marine Origin		Count	Est.*	Comment	Terrestrial Vegetation		Count	Est.*	Comment
		Foliose Algae - not kelp		<u>M</u>	<u>Egregia</u>		Leaves/Seed Pod			
		Gorgonian Sea Fan (dead)					Stick/Branch/Driftwood			
		Kelp Holdfast	<u>5</u>				Other Terrest. (comment req.)			
		Kelp Stipe/Blade	<u>9</u>			*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:				
		Rock				Low:	<u>L</u> = 2-10			
		Seagrass				Moderate:	<u>M</u> = 11-100			
	Other Marine (comment req.)				High:	<u>H</u> = > 100				

Completed by: CR

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8239

Arrival Date/Time: 8/6/13 1100

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	Y
All invertebrates positively identified (make note of any FIDs)?	Y
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

8239

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	Y
Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	NA
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	NA
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	Y
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

frozen for  
later  
formalin

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: 8/

Signature of QA/QC Personnel: John Rudolph Amec

Date/Time: 8/6/13 1400

Print Name/Company: John Rudolph Amec

Mission Bay

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/7/13

COMPLETED BY: JR

[illegible]

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page / of 1

DATE: 8/7/13

COMPLETED BY: JR

[illegible]

## STATION OCCUPATION

Agency Code THMP

Sea State

Weather  
Clear ☐  
Overcast ☒  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐Salinity (ppt) 

At estuary Sites only

Date 8/7/13Station ID 113-8145Station Fail Code NoneArrival Time 0950  
(hh:mm)Abandoned site?  
Y or N (if Y explain in comments)☒

## Wind

Speed (kts)

8.0

Direction (4)

NW

## Swell

Period (s)

0

Height (ft)

0

Direction (4)

0

## Nav Type

DGPS ☒GPS ☐

## Equipment Type

Van Veen ☐Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

Sample types (chk all that apply)																	
#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
	1034	32.76163	-17.23822	7.7	22	None	16	Silty Sand	None	Grey	N	X	X	X		N	0050 ~ 0051
Grab Event Comments:																	
	1048	32.76162	-17.23834	7.7	24	None	16	Silty Sand	None	Grey	N				X	N	0052 ~ 0054
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.),

Vessel safety (comment req.), No Access Allowed (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.),

Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Surface, &lt;5 cm Penetration, &lt;= 7 cm Penetration - biology only

BIGHT'13

CTD Field Data Sheet

Date: 8/7/13

Time: 1000

Station ID: B13-8145

Water Depth: 7.7m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Y

Samples Collected?  
(Yes / No) Y

COMMENTS: Next to Port Barge  
Quivera Basin

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-814N

Arrival Date/Time: 8/7/13 0950

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8/14/13

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1220

Print Name/Company: \_\_\_\_\_

John Rudolph Amec

## STATION OCCUPATION

BIGHT'13

Agency Code 74MP

Weather

Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐

Sea State

Rain ☐  
Thunderstorm ☐  
Fog ☐

Salinity (ppt)

☐  
At estuary Sites only

Station ID

B13-8152

Vessel Name

Eureka Bird

Overcast

☒

Thunderstorm

☐

Choppy

☒

At estuary Sites only

Date

8/7/13

Arrival Time

1325

(hh:mm)

Drizzle

☐

Thunderstorm

☐

Choppy

☒

Abandoned site?

Y or N (if Y explain in comments)

None

Station Fail Code

None

Wind

Speed (kts)

9.0

Period (s)

0

Direction (4)

NW

Height (ft)

0

Direction (4)

0

Swell

Nav Type

DGPS ☒  
GPS ☐

Station Comments

Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmmn)	Longitude (DD°MM.mmmn)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1356	32.76791	-117.24148	6.8	66	None	8	8	Grey	None	Grey	N	X	X	X		N	0060-0063
Grab Event Comments: Fine sand																	
1413	32.76791	-117.24158	6.8	60	None	8	8	Fine sand	None	Grey	N				X	N	0064-0066
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.),

Vessel safety (comment req.), No Access Allowed (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.),

Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed

Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/7/13

Time: 1340

Station ID: B13-8152

Water Depth: 6.8 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) Yes, (eelgrass)

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8152

Arrival Date/Time: 8/7/13 1325

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	<u>Y</u>
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	<u>Y</u>
Vessel has been anchored (or tied off)?	<u>Y</u>
Station DGPS coordinates ( $\pm 3$ m) recorded?	<u>Y</u>
Station occupation form completed?	<u>Y</u>

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	<u>Y</u>
--	----------

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	<u>Y</u>
Equipment washed/rinsed from previous station?	<u>Y</u>
Vessel engine has been shut off for 3-5 minutes prior to sampling?	<u>Y</u>
Sampling instrument washed with Alconox?	<u>Y</u>
Sampling instrument given site water rinse prior to deployment?	<u>Y</u>
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	<u>Y</u>
Sample bottles are lab certified, contaminant free?	<u>Y</u>
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	<u>Y</u>
Grab disposition / characteristic information recorded?	<u>Y</u>
Filtration for dissolved metals completed immediately after collection?	<u>Y</u>
Staff avoided contaminating samples at all times?	<u>Y</u>
Water samples collected on the upwind/upcurrent side of the boat?	<u>Y</u>
Equipment or field blank collected (if applicable)?	<u>NA</u>

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

PNZ

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Rodolph Arnes

# STATI OCCUPATION

BI T'13

Agency Code	Ramp	Weather	Clear	Rain	Thunderstorm	Fog	Salinity (ppt)	Station ID	B13-851
Vessel Name	Early Bird	Overcast	Partly cloudy	Drizzle			At estuary Sites only	Date	8/7/13
Arrival Time	1450							Abandoned site?	None
	(hh:mm)							Station Fail Code	None

Wind	Speed (kts)	11.0	Swell	Period (s)	0
	Direction (4)	NW		Height (ft)	0
				Direction (4)	0

Nav Type	DGPS	X	GPS	
----------	------	---	-----	--

Equipment Type	Van Veen	X	Tandem Van Veen	
----------------	----------	---	-----------------	--

Station Comments	
------------------	--

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM,mmmm)	Longitude (DD°MM,mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (V/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1515	32.76721	-117.23561	3.6	37	None	15	Silt	None	None	Olive	N	X				N	0067-0069
Grab Event Comments: Only one of tandem's cloud properly.																	
1525	32.76719	-117.23565	3.6	33	None	15	Silt	None	None	Olive	N		X	X		N	0070-0072
Grab Event Comments:																	
1540	32.76708	-117.23573	3.8	29	None	14	Silt	None	None	Olive	N				X	N	0073-0077
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Too shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



CTD Field Data Sheet

Date: 8/7/13

Time: 1500

Station ID: B13-8151

Water Depth: 3.6m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) Yes (eelgrass)

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: D13-8151

Arrival Date/Time: 8/7/13 1450

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8151

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	
Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: June - 18.0m

Signature of QA/QC Personnel: John Rodolph Amee

Date/Time: 8/8/13 1230

Print Name/Company: John Rodolph Amee

— handled  
directly  
to courier

## STATION OCCUPATION

Agency Code RumpVessel Name Early BirdArrival Time 1110  
(hh:mm)

## Weather

Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐

## Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

At estuary Sites only

Abandoned site?

Y or N (if Y explain in comments)

## Wind

Speed (kts)

7.5

Direction (°)

NW

## Swell

Period (s)

6

Height (ft)

0

Direction (°)

0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## Station Comments

BIGHT'13

Station ID

B13-8146

Date

8/7/13

Station Fail Code

None

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1	1137	32.76246	-117.23621	7.8	27	None	16	Silty Sand	None	Grey	N	X	X	X			0055-0056
Grab Event Comments:																	
2	1201	32.76245	-117.23620	7.8	25	None	16	Silty Sand	None	Grey	N			X	X		0058-0059
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/7/13

Time: 1120

Station ID: B13-8146

Water Depth: 7.8 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: ~~Yes~~ NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Y

Samples Collected?  
(Yes / No) Y

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8146

Arrival Date/Time: 8/7/13 1110

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	



8146

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Rudolph Arnee

# STATAL OCCUPATION

BI T'13

Agency Code	<u>R4M P</u>	Weather	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Overcast <input type="checkbox"/> Partly cloudy <input type="checkbox"/> Drizzle	Sea State	<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Choppy <input type="checkbox"/> Rough	Salinity (ppt)	<u>13-856</u>	Station ID	<u>13-856</u>
Vessel Name	<u>Early Bird</u>		<input type="checkbox"/> Thunderstorm <input type="checkbox"/> Fog			Date	<u>8/7/13</u>		
Arrival Time	<u>1630</u>					Abandoned site?	<u>N</u>	Station Fail Code	<u>None</u>

Wind	Speed (kts)	<u>5.5</u>	Swell	Period (s)	<u>0</u>	Nav Type	<input checked="" type="checkbox"/> DGPS <input type="checkbox"/> GPS	Station Comments	
	Direction (4)	<u>NW</u>		Height (ft)	<u>0</u>	Equipment Type	<input type="checkbox"/> Van Veen <input checked="" type="checkbox"/> Tandem Van Veen		
				Direction (4)	<u>0</u>				

## GRAB EVENTS

#	Time (hh-mm)	Latitude (DD°MM'mmmm)	Longitude (DD°MM'mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (V/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (V/N)	Photos
1	1658	32.78070	-117.24928	3.4	71	None	14	Silt	None	Olive	N	X	X	X		N	0078-0082
Grab Event Comments:																	
2	1717	32.78082	-117.24920	3.5	75	None	14	Silt	None	Olive	N				X	N	0083-0086
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O), describe in comments
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/7/13

Time: 1640

Station ID: D13-8N56

Water Depth: 3.4m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Y

Samples Collected?  
(Yes / No) Y

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8156

Arrival Date/Time: 8/7/13 1630

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

#### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

#### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8156

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

handed  
directly to  
courier

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Rudolph Amec

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/8/13

COMPLETED BY: JR

[illegible]

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/8/13

COMPLETED BY: *JR*

[illegible]

\*Special study chems collected.



# STATI OCCUPATION

BI T'13

Agency Code RLHMP  
Vessel Name Early Bird  
Arrival Time 0650  
(hh:mm)

Weather  
☒ Clear  
☐ Overcast  
☐ Partly cloudy  
☐ Drizzle  
☐ Rain  
☐ Thunderstorm  
☐ Fog

Sea State  
☒ Calm  
☐ Choppy  
☐ Rough

Salinity (ppt) 33-8/107  
At estuary Sites only  
Date 8/8/13  
Abandoned site? None  
Y or N (if Y explain in comments)

Wind  
Speed (kts) 2.1  
Direction (4) W  
Swell  
Period (s) 0  
Height (ft) 0  
Direction (4) 0

Nav Type  
☒ DGPS  
☐ GPS  
Equipment Type  
☐ Van Veen  
☒ Tandem Van Veen

## Station Comments

## GRAB EVENTS

#	Time (hh-mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (V/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
	0724	32.78294	-117.23000	3.3	15	None	16	Silt	Humic	Grey	N	X	X	X		N	0087-0089
Grab Event Comments:																	
	0739	32.78294	-117.22993	3.2	17	None	15	Silt	Humic	Grey	N				X	N	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Antropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/5/13

Time: 0705

Station ID: B13-8157

Water Depth: 3.2m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8N7 Arrival Date/Time: 8/8/13 0650

Site Acceptable for Sampling: Water: (Y) or N Sediment: (Y) or N Trawl: Y, N, or (NA)

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8/57

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	
Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: Juno Dot 7 12m

Signature of QA/QC Personnel: [Signature] Date/Time: 8/8/13 1230

Print Name/Company: John Rudolph Arnes

handed directly to courier

# STATI OCCUPATION

BI T'13

Agency Code RLKMP

Salinity (ppt)                     

Station ID B13-8160

Vessel Name Lord's Bird

At estuary Sites only

Date 8/18/13

Arrival Time 0836  
(hh:mm)

Abandoned site?

Station Fail Code None

Y or N (if Y explain in comments)

## Wind

Speed (kts) 2.1

Direction (4) West

## Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

## Nav Type

DGPS ☒

GPS ☐

## Equipment Type

Van Veen ☐

Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
	0905	32.78738	-117.20944	2.8	46	None	16	Silt	None	Olive	N	X	X	X		N	0093-0095
Grab Event Comments:																	
	0920	32.78751	-117.20929	3.0	44	None	16	Silt	None	Olive	N				X	N	0096-0097
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/8/13

Time: 0845

Station ID: B13-8160

Water Depth: 2.5m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: No

Floating Material?  
(Yes / No) Yes (eelgrass)

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8160

Arrival Date/Time: 8/8/13 0836

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y 2.8
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8160

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish?	
Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

— handed directly to courier

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Rudolph Anee

# STATI OCCUPATION

BI T'13

Agency Code	<u>14mp</u>	Weather	Clear	<input checked="" type="checkbox"/>	Rain	<input type="checkbox"/>	Salinity (ppt)	<u>13-8/63</u>	Station ID	<u>13-8/63</u>
Vessel Name	<u>Early Bird</u>	Overcast	<input type="checkbox"/>	Thunderstorm	<input type="checkbox"/>	Choppy	At estuary Sites only	Date	<u>8/8/13</u>	
Arrival Time	<u>0955</u>	Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>	Rough		Abandoned site?	<u>None</u>	Station Fail Code
		Drizzle	<input type="checkbox"/>		<input type="checkbox"/>			Y or N (if Y explain in comments)		

Wind	Speed (kts)	<u>7.5</u>	Swell	Period (s)	<u>0</u>	Nav Type	DGPS	<input checked="" type="checkbox"/>	Station Comments	
	Direction (4)	<u>West</u>		Height (ft)	<u>0</u>		GPS	<input type="checkbox"/>		
				Direction (4)	<u>0</u>	Equipment Type	Van Veen	<input type="checkbox"/>		
						Tandem Van Veen	<input checked="" type="checkbox"/>			

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
0957	32.79436	-117.2016	2.4	31	None	15	Silt	None	None	Olive	N	X	X	X	N	N	0098-0101
Grab Event Comments: Special Study Chems collected																	
1011	32.7944	-117.22	2.5	33	None	16	Silt	None	None	Olive	N	X	X	X	N	N	0102-0105
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/8/13

Time: 1047

Station ID: B13-8163

Water Depth: 2.0 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) Yes (eelgrass)

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8763

Arrival Date/Time: 8/8/13 0905

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	<u>Y</u>
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	<u>Y</u>
Vessel has been anchored (or tied off)?	<u>Y</u>
Station DGPS coordinates ( $\pm 3$ m) recorded?	<u>Y</u>
Station occupation form completed?	<u>Y</u>

\* 2.5m

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	<u>N</u>
--	----------

① sediment first

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	<u>Y</u>
Equipment washed/rinsed from previous station?	<u>Y</u>
Vessel engine has been shut off for 3-5 minutes prior to sampling?	<u>Y</u>
Sampling instrument washed with Alconox?	<u>Y</u>
Sampling instrument given site water rinse prior to deployment?	<u>Y</u>
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	<u>Y</u>
Sample bottles are lab certified, contaminant free?	<u>Y</u>
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	<u>Y</u>
Grab disposition / characteristic information recorded?	<u>Y</u>
Filtration for dissolved metals completed immediately after collection?	<u>Y</u>
Staff avoided contaminating samples at all times?	<u>Y</u>
Water samples collected on the upwind/upcurrent side of the boat?	<u>Y</u>
Equipment or field blank collected (if applicable)?	<u>NA</u>

① Site depth shallow, stirred up bottom. Therefore, sediment collected first. Moved upcurrent, upwind to collect water samples after.

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	Y
Special study sample collected (benthic bioaccumulation, if applicable)?	NA
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	
Weighing scales calibrated?	
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
PT sensor downloaded successfully?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
Trawl debris captured and processed?	
All fish positively identified (make note of any FIDs)?	
All invertebrates positively identified (make note of any FIDs)?	
All fish and invertebrates enumerated (if more than ~300 specimens of a single	

8/63

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	
Total biomass of each species group recorded?	
Composite weight of smaller specimens recorded (those <0.1 kg)?	
Any anomalies recorded?	
Photo of one representative from each species collected?	
Taxonomy voucher collected for each new species (10% formalin)?	
DNA voucher collected for each new species (95% ethanol) (outside label only)?	
Anomaly vouchers collected (10% formalin)?	
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	
Daily QA/QC field trawl audit performed by Cruise Leader?	

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

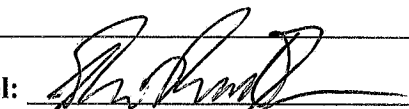
## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	NA
DNA samples preserved with 95% ethanol?	NA
Infaunal bioaccum samples stored immediately on ice and frozen asap?	NA
Plastic pollution study fish stored immediately on ice and frozen asap?	NA
Fish bioaccum specimens stored immediately on ice and frozen asap?	NA
Halibut study specimens stored immediately on ice and frozen asap?	NA
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

handed  
directly to  
courier

Additional Notes:

Signature of QA/QC Personnel:



Date/Time: 8/8/13 1230

Print Name/Company:

John Rudolph Anee

# STATI OCCUPATION

BI T'13

Agency Code RAMP  
Vessel Name Early Bird  
Arrival Time 1120  
(hh:mm)

Weather  
Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐  
Rain ☐  
Thunderstorm ☐  
Fog ☐

Sea State  
Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt) 03-859  
At estuary Sites only  
Date 8/8/13  
Station ID 03-859  
Station Fail Code None

Abandoned site?  
Y or N (If Y explain in comments)

☒

## Wind

Speed (kts) 7.5  
Direction (4) West

## Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1	1150	32.78444	-117.2538	3.8	58	None	16	Silt	None	Olive	N	X	X	X		N	0106 -
Grab Event Comments:																	
2	1206	32.78439	-117.2529	3.7	66	None	16	Silt	None	Olive	N			X		N	0107
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



CTD Field Data Sheet

Date: 8/8/13

Time: 1135

Station ID: B13-8159

Water Depth: 3.8m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8159

Arrival Date/Time: 8/8/13 1120

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	N
All invertebrates positively identified (make note of any FIDs)?	N
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

-Goby (FID)  
-Nassarius  
-Benthic  
anemone

8/59

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	NA
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	Y
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	Y
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	Y
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

handed  
directly to  
courier

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Riddolph Amec

# STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Weather

Clear ☒

Rain ☐

Sea State

Calm ☒

Nav Type

DGPS ☒

Station ID B13-8159

Vessel Name Early Bird

Overcast ☐

Thunderstorm ☐

Choppy ☐

GPS ☐

Date 8/8/13

Arrival Time 1440

(hh:mm)

Partly cloudy ☐

Fog ☐

Rough ☐

Drizzle ☐

☒

Abandoned site?

Station Fail Code None

Y or N (If Y explain in comments)

Wind

Speed (kts) 7.0

Direction (4) ✓

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	P/T Sensor Data (Y/N)	Community Structure (Y/N)	Tissue Chemistry (Y/N)
1	Net Over	1450	32.78471	-117.21457	3.8	15		None	Y	Y	Y
	Start Trawl	1450	32.78471	-117.21457	3.8						
	End Trawl	1459	32.78102	-117.21478	3.1						
	Net on Deck	1500	32.78086	-117.21448	3.1						
	Net Over										
	Start Trawl										
	End Trawl										
	Net on Deck										
	Net Over										
	Start Trawl										
	End Trawl										
	Net on Deck										

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8159

Page 1 of 1

Date: 8/8/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Vouche r #	Weight (kg)			Photos (D, L, V) Y/N
				Gross	Tare	Net	
1 yellow fin Croaker	1	16	Y	<0.1kg			y
2 Ca. Halibut	1	18		<0.1kg			y
3 Round Ray	1	total length = 29 / width = 16		0.24kg	-	0.24	y
4 Butterfly Ray	4	W=28 / W=36 / U=25 / W=37 L=19 / L=24 / L=17 / L=25	Y	1.5kg	0.37kg	1.13	y
5 Gray Smooth Round	2	33, 34	Y	0.55kg	0.37	0.18	y
6 Deepbody Anchovy	8	5, 5, 5, 5, 5, 5, 5, 5	Y	<0.1kg			y
7 Goby	1	3	FID	<0.1kg			y
8 Slough Anchovy	409	see other page	Y	<0.1			y
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: yellow fin Croaker (0.08kg) + Ca Halibut (0.07kg) + Anchovy (0.079kg)

Total <0.1 = 0.249kg

QA Pass/Fail: (circle) Yes No NA (not available)

## BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8N9

Page 1 of 1

Date: 8/8/13

Completed by: JR

Gross weight (kg) <0.1 kg Tare Weight (kg) 0.005 Net weight (kg) <0.1


[illegible]

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixecephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance

409

[illegible]

Side 3:  259 total

QA Pass/Fail: (circle)      Yes      No      NA (not available)

8/59

## ALIQOT DATA

Species:	N	Gross (kg)	Tare (kg)	Net (kg)
<u>Stagh Anchovy</u>	<u>234</u> <u>20</u>	<u>0.045</u> <u>0.014</u>	<u>0.005</u> <u>0.005</u>	<u>0.04</u> <u>0.009</u>
Record Catch gross weights here:	Show calculations here			
	Catch gross wt. - Catch tare wt. = catch Net wt.			
<u>extra</u> <u>tare</u> <u>net</u>	<u>0.094</u> - <u>0.015</u> = <u>0.079</u>			
<u>0.035</u> - <u>0.005</u> = <u>0.030</u>				
	(Catch Net wt. / Aliquot net wt.) x # in Aliquot = Abundance			
	<u>1.6122</u> x <u>254</u> = <u>409</u>			

All weights are to be recorded in kg.

Comments:

catch net wt / Aliquot net wt

$$0.079 / 0.049 = 1.6122$$



# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8N9

Page 1 of 1

Date: 8/8/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

	Species	N	Comments (or Anomalies)	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
					Gross	<sup>Type</sup> Y/N	Net	
1	<del>PENAEUS CALIFORNICUS</del>	5			23 + 100g	5g	118	Y
2	Muscolista senhausia	4					20.1	Y
3	Yellow sponge	4		FID			20.1	Y
4	Nassarius tegulus *	1		FID + V			20.1	Y
5	Benthic anemone	70	* may have missed 50+ in the Buo Zoobotryan r. Verticillium	FID	35g	5g	30g	Y
6								
7								
8	Zoobotryan Verticillium		2 50 lbs intertidal w/catch					
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Wt. of <0.1 composite <0.1

QA Pass/Fail: (circle) Yes No NA (not available)

**BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM**Station: B13-8159 Trawl #: 1 Agency: RHMPDate: 8/8/13 Previously Measured by: LHRe-Measured by: JR

Original Gross weight (kg) 1.5 Tare Weight (kg) 0.37 Net weight (kg) 1.13  
 QC Re-weigh weight (kg) 1.5 Tare Weight (kg) 0.37 Net weight (kg) 1.13

Size Class	Original Species: <i>Butterfly Ray</i>			Anomalles
	QC Re-ID: <i>Butterfly Ray</i>			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15		15-16		
16		16-17	1	
17		17-18	1	
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24	1	24-25		
25	1	25-26		
26		26-27		
27		27-28		
28		28-29		
Total	2	Total	2	

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	<u>X</u>		<u>JR</u>
			Count	<u>X</u>		<u>J</u>
			Length	<u>X</u>		<u>J</u>
			Biomass	<u>X</u>		<u>J</u>
Other species Weight (kg)			Pathology	<u>X</u>		<u>J</u>
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixecephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put “-” and #

## BIGHT '13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: MB 138159 Trawl #: 1 Agency: RHMP  
 Date: 8/8/13 Previously Measured by: LH  
 Re-Measured by: JR

Original Gross weight (kg) <0.1 Tare Weight (kg) 0.005 Net weight (kg) <0.1  
 QC Re-weigh weight (kg) <0.1 Tare Weight (kg) 0.005 Net weight (kg) <0.1

Size Class	Original Species: <i>Slough Anchovy</i>			Anomalies
	QC Re-ID: <i>Slough Anchovy</i>			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3	11	
3	11	3-4	+++ 11	
4	++++ 444	4-5		
5		5-6		
6		6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15		15-16		
16		16-17		
17		17-18		
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total	12	Total	9	

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	✓		JR
			Count	✓		
			Length	✓		
			Biomass	✓		
			Pathology	✓		
Other species Weight (kg)						
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = amebicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-and #"

\* randomly chose 20 from the batch of 409 to weigh/measure for QA

## BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM

Station: B13-8159Trawl #: 1Agency: RHMPDate: 8/8/13Previously Measured by: Mary TamburroRe-Measured by: Chris Strandy

## Species #1

Original Species name: <u>Musculista senhousia</u>				
QC Re-ID Species name: <u>Musculista senhousia</u>				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
<u>No anomalies</u>	<u>BCS 45</u>			<u>&lt;0.1</u>
Other species found in lot				
1				
2				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

## Species #2

Original Species name: <u>Nassarius tegulus</u>				
QC Re-ID Species name:				
Comments/Anomalies	N	QC Re-weigh (kg)		
		Gross	Tare	Net
<u>No anomalies</u>	<u>1</u>			<u>&lt;0.1</u>
Other species found in lot				
1				
2				
3				

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

## Species #1

QA/QC Acceptance			
Metric	Pass	Fall	Initials
ID	✓		
Count	✓		
Biomass	✓		
Anomalies	✓		

## Species #2

QA/QC Acceptance			
Metric	Pass	Fall	Initials
ID			
Count			
Biomass			
Anomalies			

Notes:

---



---



---



---



---



---



---



---

ALiquot RECORDING AND CALCULATIONS WORKSHEET (If necessary)

# BIGHT 13 TRAWL DEBRIS FORM

Agency: RKMP

Page 1 of 1

Station: B3-8/59 Trawl #: \_\_\_\_\_ Date: 8/8/13

☐ CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment		
	Bag				Boat/Ship/Engine part					
	Bandaid				Clothing					
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt					
	Bottle				Fiberglass					
	Buoy				Food					
	Cap/Lid				Leather					
	Cigarette box/wrapper				Lumber					
	Cup				Paper					
	Filmstrip (movie)				Rag/Cloth					
	Fishing Line/Net				Rubber					
	Food Bag / Wrapper				Shoe					
	Polypropylene Rope				Tape					
	Straw				Tire					
	Toy				Other Misc. (comment req.)					
	Utensil				Metal		Count	Comment		
	Plastic Piece (unid.)				Drink Can					
	Other Plastic (comment req.)				Can - other					
<b>Glass</b>		Count	Comment	Can Pull-tab						
Beer Bottle				Fishing Gear						
Glass Bottle/Jar -other				Wire						
Glass Piece (unid.)				Metal Piece (unid.)						
Other Glass (comment req.)				Other Metal (comment req.)						
Natural Debris	Marine Origin		Count	Est.*	Comment	Terrestrial Vegetation		Count	Est.*	Comment
	Foliose Algae - not kelp			<u>M</u>	<u>Red Algae</u>	Leaves/Seed Pod				
	Gorgonian Sea Fan (dead)					Stick/Branch/Driftwood				
	Kelp Holdfast					Other Terrest. (comment req.)				
	Kelp Stipe/Blade					<p><b>*For Natural Debris only</b>, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:</p> <p>Low: L = 2-10</p> <p>Moderate: M = 11-100</p> <p>High: H = &gt; 100</p>				
	Rock									
	Seagrass									
Other Marine (comment req.)			<u>H</u>	<u>Bryozoan ~50 lbs</u>	Completed by: _____					

zoobatrachian verticillatum

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8459

Arrival Date/Time: 8/8/13 1120

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates ( $\pm 3$ m) recorded?	Y
Station occupation form completed?	Y

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	Y
Grab disposition / characteristic information recorded?	Y
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel or plastic scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	Y
Equipment or field blank collected (if applicable)?	NA

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	N
All invertebrates positively identified (make note of any FIDs)?	N
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

-Goby (FID)  
-Nassarius  
-Benthic  
anemone

8/59

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	NA
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	Y
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	Y
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

## 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice, frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	Y
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

handed  
directly to  
courier

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/8/13 1230

Print Name/Company: \_\_\_\_\_

John Rudolph Amec



# RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies

## Field Datasheet

Station

Mission Bay Extra Trawls

Page 1 of 1

Date

9/11/13

Completed by:

DR

Additional Trawl Coordinates:

~~B13-8152~~ ~~515~~ ~~505~~

Line Out: 18m

0933

0934

	Time	0920	0923	0926	0929	0932	Net	Net On
	Net Set	Net	Bottom	Time 1	Time 2	Time 3	Retrieval	Board
B13-8152- <del>515</del>								
Lat (32.xxxx)		32.76451	76848	76755	76613	76529	76507	76503
Long (-117.xxxx):		-117.23897	24044	24185	24289	24387	24423	24439
Depth:		4.5	5.2	7.8	7.8	7.8	7.8	

	Time	0938	0941	0944	0947	0950	Net	Net On
	Net Set	Net	Bottom	Time 1	Time 2	Time 3	Retrieval	Board
B13-8152								
Lat (32.xxxx)		76504	76636	76712	76828	76779	76887	76898
Long (-117.xxxx):		24429	24309	24163	24064	24885	24860	24834
Depth:		7.8	8.1	7.2	5.6	3.8	3.7	3.7

	Time	1119	1120	1123	1126	1129	Net	Net On
	Net Set	Net	Bottom	Time 1	Time 2	Time 3	Retrieval	Board
8152								
Lat (32.xxxx)		76902	76825	76842	76842			
Long (-117.xxxx):		23843	23963	24131	24131			
Depth:		3.2	5.3	6.3		1241	1244	1245

	Time	1223	1234	1237	1240	1243	Net	Net On
	Net Set	Net	Bottom	Time 1	Time 2	Time 3	Retrieval	Board
8156								
Lat (32.xxxx)		78150	78809	78056	78035	78030	78035	78040
Long (-117.xxxx):		24969	24432	24746	24544	24470	24236	24186
Depth:		3.5	3.5	3.6	3.6	3.6	3.5	

	Time	1243	1244	1245	1246	1247	Net	Net On
	Net Set	Net	Bottom	Time 1	Time 2	Time 3	Retrieval	Board
Trawl 6								
Lat (32.xxxx)								
Long (-117.xxxx):								

Comments:

Debris: Trawl 8152 - 4 Algae wt G: 0.225 T: 0.095 N: 0.12

8152 Trawl 3 - net hung upon bottom under bridge pulled net up and called official

8156 Trawl 1 - lots of eelgrass

# Extra Trawls Mission Bay

## RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies Field Datasheet

Station: B13-8N52

Page 1 of 1

Date: 9/11/13

Completed by: JK

### Additional Trawl Coordinates:

Line out: 18m-30m

Trawl <del>1</del>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		0923	0926	0929	0932	0933	
Depth (m)		5.2	7.8	7.8	7.8	7.8	
Lat (32.xxxxx)	76881	76884	76755	76613	76507 <sup>29</sup>	76507	76503
Long (-117.xxxxx)	23897	24044	24185	24289	24387	24423	24429

Line out: 30-45m

Trawl 2	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		0941	0944	0947	0950	0951	
Depth (m)		8.1	7.2	5.6	3.8	3.7	
Lat (32.xxxxx)	76504	76636	76712	76825	76779	76887	76898
Long (-117.xxxxx)	24429	24309	24163	24064	24885	24860 <sup>JK</sup>	24834 <sup>JK</sup>

23860 23834

Line out: 45-28m

Trawl 3	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1119 1120	1123	1126	1129		
Depth (m)		8.2 5.0	5.3 6.0	6.3 7.7	7.7		
Lat (32.xxxxx)	76902	76875	76842	76808			
Long (-117.xxxxx)	23843	23963	24101	24239			

Trawl 4	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments: Trawl 3 - net hung on bottom at 1126. Pulled up net and ended trawl due to lots of benthic orgs caught.

Debris: 4 algae Gross: 0.225 kg - <sup>Tare</sup> 0.095 = 0.13 kg

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-SAVE SIZE

Page 1 of 1

Date: 9/11/13

Completed by: VK

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
				Gross	Tare	Net	
1 CA Lizardfish	14	11, 11, 11, 14, 12 <sup>8</sup> , 11, 12, 13, 12, 12, 12, 11, 13, 17		0.290	0.095	0.195	
2 CA Halibut	1	17		0.165	0.095	0.07	
3 CA Scorpionfish	2	10, 9		0.095	0.034	0.061	
4 Speckled Sanddab	2	8, 8		0.052	0.034	0.018	
5 Spotted Turbot	1	8		0.110	0.095	0.015	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: One Lizardfish with gill parasite

QA Pass/Fail: (circle)

Yes

No

NA (not available)

**BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM**Station: B13-8152 Trawl #: 1 Agency: RHMPDate: 9/11/13 Previously Measured by: LHRe-Measured by: JROriginal Gross weight (kg) 0.290 Tare Weight (kg) 0.095 Net weight (kg) 0.195QC Re-weigh weight (kg) 0.290 Tare Weight (kg) 0.095 Net weight (kg) 0.195

Size Class	Original Species: CA Lizardfish			Anomalies
	QC Re-ID: CA Lizardfish			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7		
7		7-8		
8		8-9		
9		9-10		
10		10-11	11	
11	111	11-12	111	
12	1	12-13	11	
13	1	13-14	1	
14		14-15		
15		15-16		
16		16-17		
17	1	17-18		
18		18-19		
19		19-20		
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total		Total		

Other Species found in sample:			QA/QC Acceptance	Pass	Fail	Initials
			Identification	<input checked="" type="checkbox"/>		
			Count	<input checked="" type="checkbox"/>		
			Length	<input checked="" type="checkbox"/>		
			Biomass	<input checked="" type="checkbox"/>		
Other species Weight (kg)			Pathology	<input checked="" type="checkbox"/>		
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

*Invert*  
BIGHT'13 DEMERSAL ~~FISH~~ IDENTIFICATION FORM

Station: B13-8052 FV2

Page 1 of 1

Date: 9/11/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth Yes ☐ No ☒

	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)(g)			Photos (D, L, V) Y/N
					Gross	Tare	Net	
1	Navanax	3			40.1	-	40.1	Y
2	Cancer/Rock crab	1		FID/V		-		
3	Dendrosten excentricus	1	2 cm	-		-		
4	Misc. shrimp	1	Red coloration in pedipalps	FID		-		
5	Unid. small red/orange sponge	1		FID		-		
6	Unid. white nudibranch	1		FID		-		
7	Amphipod 1 sp. TBD	9	Looks like Rheporynus	FID		-		
8	Polychaetes sp. TBD	14	3-4 species scored together	FID		-		
9	Isopod	1	red coloration	FID		-		
10	Amphipod 2 sp. TBD	2	Looks like Grandilocella	FID		-		
11	Ophiroids	9	Possibly 2 species, red coloration	FID		-		
	Mixed misc. sponge	-	Small dark body, prominent spines Finger sponge + yellow soft sponge	FID	750g	95g		
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

Empty Bulla snail shells - 5

Debris: eelgrass, Giant kelp - 900g - 370g

Debris: brown algae, Epomani, gracilaria, dictyota, Culpomania (225g) - 95g

2nd trawl to collect for bioaccumulation. also conducted @ 1115 -

see bioaccumulation data sheet.

QA Pass/Fail: (circle) Yes No NA (not available)

Extra Trawls - MB  
Only

FIELD SAMPLING QA CHECKLIST

Station ID: BID-8W2

Arrival Date/Time: 9/11/13 0900

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	
Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	
Vessel has been anchored (or tied off)?	
Station DGPS coordinates ( $\pm 3$ m) recorded?	
Station occupation form completed?	

2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	
--	--

3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	
Equipment washed/rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument washed with Alconox?	
Sampling instrument given site water rinse prior to deployment?	
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	
Sample bottles are lab certified, contaminant free?	
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	
Grab disposition / characteristic information recorded?	
Filtration for dissolved metals completed immediately after collection?	
Staff avoided contaminating samples at all times?	
Water samples collected on the upwind/upcurrent side of the boat?	
Equipment or field blank collected (if applicable)?	

B13-~~8002~~ 8N2

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	
Field staff wearing fresh, powder free nitrile gloves?	
Equipment washed/rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument washed with Alconox?	
Sampling instrument given site water rinse prior to deployment?	
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	
Sample bottles are lab certified, contaminant free?	
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	
Grab disposition / characteristic information recorded?	
Chem/Tox samples collected from top 5cm, and 1 cm from sides of grab?	
Sediment evenly distributed among containers?	
Stainless steel or plastic scoop used to distribute sediment?	
Staff avoided contaminating samples at all times?	
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	
Special study sample collected (benthic bioaccumulation, if applicable)?	
Equipment or field blank collected (if applicable)?	

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	✓
Weighing scales calibrated?	✓
Vessel passed through 100 m radius of station?	✓
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	✓
Trawl log info recorded (depth, tow wire length, times, coordinates)?	✓
Trawl remained within 10% of target depth?	✓
PT sensor downloaded successfully?	✓
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	✓
Fish and/or invertebrates obtained in trawl?	✓
Trawl debris captured and processed?	✓
All fish positively identified (make note of any FIDs)?	✓
All invertebrates positively identified (make note of any FIDs)?	✓
All fish and invertebrates enumerated (if more than ~300 specimens of a single	✓

-FID

8052  
8N2

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	N
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	N
DNA voucher collected for each new species (95% ethanol) (outside label only)?	N
Anomaly vouchers collected (10% formalin)?	N
Fish bioaccum target species captured and preserved on ice to be frozen?	
Plastic pollution species captured and preserved on ice to be frozen?	
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	N
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	
Toxicity samples stored cold on wet ice?	
Sediment chem. samples stored cold on wet ice or frozen within 24 hours?	
Infaunal samples relaxed and preserved with formalin?	
Voucher samples preserved with 10% formalin?	
DNA samples preserved with 95% ethanol?	
Infaunal bioaccum samples stored immediately on ice and frozen asap?	
Plastic pollution study fish stored immediately on ice and frozen asap?	
Fish bioaccum specimens stored immediately on ice and frozen asap?	
Halibut study specimens stored immediately on ice and frozen asap?	
Cooler is taped shut for transport to lab?	
Completed COC is included in plastic bag in cooler?	

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/17/13 1635

Print Name/Company: \_\_\_\_\_

John Rudolph Amec



# Extra Trawl Mission Bay

## RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies Field Datasheet

Station: B13-856

Page 1 of 1

Date: 9/11/13

Completed by: JK

### Additional Trawl Coordinates:

Line out: 15m

Trawl 1	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1234	1237	1240	1241	1244	
Depth (m)		3.5	3.6	3.6	3.6	3.5	
Lat (32.xxxxx)	78150	28809.72	78056	78038	78030	78035	78040
Long (-117.xxxxx)	24969	24492.22	24746	24644	24470	24236	24186

78064  
24861

Trawl 2	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 4	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 5	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

### Comments:

Trawl - lots of eelgrass

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: 013-8156

Page 1 of 1

Date: 9/11/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
				Gross	Tare	Net	
1 Round Ray	5	22, 29, 28, 31, 30 18, 16, 16, 19, 18		2.05	0.370	1.68	
2 Pipefish, Bay	2	15, 15	V	0.036	0.034	0.002	
3 Spotted Sand Bass	9	30, 29, 27, 27, 26, 24, 22, 24, 16		2.05, 1.6, 1.1 = 4.75	0.370	4.38	
4 Barred Sand Bass	14	13, 13, 14, 13, 12, 14, 13, 12, 13, 11, 11, 12, 13, 12		1.1	0.370	0.73	
5 CA Halibut	2	12, 11		0.050	0.034	0.016	
6 Diamond Turbot	1	25		0.750	0.370	0.038	
7 Kelp Bass	23	12, 13, 13, 13, 14, 13, 10, 13, 14, 13, 13, 14, 14 13, 13, 12, 15, 14, 13, 14, 12, 14, 7		1.55	0.370	1.18	
8							
9 Black Surfperch	26	12, 12, 11, 11, 10, 11, 11, 11, 11, 11, 21, 11, 11		2.75	0.370	2.38	
10		11, 16, 14, 15, 15, 10, 12, 11, 11, 11, 16, 22					
11 Shine Perch	8	7, 6, 7, 6, 6, 7, 7, 8		0.095	0.034	0.061	
12 Dwarf Surf Perch	5	7, 7, 5, 7, 11	V	0.110	0.034	0.076	
13 White Surf Perch	13	10, 10, 9, 9, 9, 8, 9, 9, 10, 9, 10, 10, 19		0.435	0.034	0.401	
14 Giant Kelpfish	16	8, 8, 11, 8, 5, 9, 8, 6, 9, 9, 8, 7, 9, 7, 8, 7		0.092	0.034	0.058	
15 Topsmelt	3	7, 8, 6	V	0.046	0.034	0.012	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: \* Batch wt. P = external parasite on caudal peduncle

QA Pass/Fail: (circle)

Yes

No

NA (not available)

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-856 Trawl #: 1 Agency: RHMP  
 Date: 9/11/13 Previously Measured by: LH  
 Re-Measured by: JR

Original Gross weight (kg) 0.435 Tare Weight (kg) 0.034 Net weight (kg) 0.401  
 QC Re-weigh weight (kg) 0.430 Tare Weight (kg) 0.034 Net weight (kg) 0.396

Size Class	Original Species: <i>White Surfperch</i>			Anomalies
	QC Re-ID: <i>White Surfperch</i>			
	Re-ID Count	+/-2 mm	Tweener count	
1		1-2		
2		2-3		
3		3-4		
4		4-5		
5		5-6		
6		6-7		
7		7-8	<i>1</i>	
8		8-9	<i>1</i>	
9	<i>11</i>	9-10	<i>111</i>	
10	<i>1111</i>	10-11		
11		11-12		
12		12-13		
13		13-14		
14		14-15		
15		15-16		
16		16-17		
17		17-18		
18		18-19		
19		19-20	<i>1</i>	
20		20-21		
21		21-22		
22		22-23		
23		23-24		
24		24-25		
25		25-26		
26		26-27		
27		27-28		
28		28-29		
Total		Total		

Other Species found in sample:			QA/QC Acceptance	Pass	Fall	Initials
			Identification	<u>✓</u>		
			Count	<u>✓</u>		
			Length	<u>✓</u>		
			Biomass	<u>✓</u>		
Other species Weight (kg)			Pathology	<u>✓</u>		
Gross	Tare	Net	Notes:			

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

*Invert*  
BIGHT'13 DEMERSAL ~~IDENTIFICATION~~ IDENTIFICATION FORM

Station: B13-8156

Page 1 of 1

Date: 9/11/13

Completed by: GR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	FID or Voucher #	Weight (kg)			Photos (D, L, V) Y/N
				Gross	Tare	Net	
1 Wavy Turban Snail	6	4 epifaunal slipper shells	FID	10.1			Y
2 Target Shrimp	2		FID	10.1			
3 Soft yellow sponge	1		-	10.1			
4 Van Sponge?	7	Tan/Brown group of 7	FID	10.1			
5 Bright orange mix sponge	1	2 1/2 inch * ON sm finger sponge	FID	10.1			
6 Lytechinus anamesus	2		Voucher	10.1			
7 Spiny Lobster	9		-	3.95	0.37	3.58	
8 Green eelgrass shrimp	16	bright green	FID	10.1			
9 Small anemone	1	Lg Base, on black tentacles	FID	10.1			
10 Misc shrimp - clear	2	clear w/ red coloration	FID	10.1			
11 Flat worm	1	15cm	FID	10.1			
12 Nautanax	1		-	10.1			
13 Calif. Cone Snail	1		-	10.1			
14 San Diego Scallop	3		FID	10.1			
15 Small Spindle snail?	36	0.5 to 1.0cm some w/ growth	FID	10.1			
16 Turban snail Banded?	1		FID	10.1			
17 kelp snail	1	1.3cm bright orange	FID	10.1			
18							
19							
20							
21							
22							
23							
24							
25							

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Debris - Eelgrass

(kg) Weight =  $3.45 + 3.9 + 2.2 + 2.2 + 4.3 + 4.6 + 4.0 + 3.65 + 2.6 + 3.45 + 2.55 + 1.0 = 27.9$   
Tare =  $0.37 \text{ kg}$   $\times 11 = 4.07 \text{ kg}$  mix brown/red / Zoothrixan 2.0 kg  
 $27.9 \text{ kg} - 4.07 \text{ kg} = 23.8 \text{ kg}$   
Gross Tare Net

QA Pass/Fail: (circle) Yes ☒ No ☐ NA (not available)

Eelgrass Mix  
 $27.9 \text{ kg} - 4.07 \text{ kg} = 23.8 \text{ kg}$   
Gross Tare Net

MB Extra Trawls  
Only

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8156

Arrival Date/Time: 9/11/13 1230

Site Acceptable for Sampling: Water: Y or N  
If No, provide reason: \_\_\_\_\_

Sediment: Y or N

Trawl: Y, N, or NA

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	
Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity).	
Vessel has been anchored (or tied off)?	
Station DGPS coordinates ( $\pm 3$ m) recorded?	
Station occupation form completed?	

### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	
--	--

### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	
Equipment washed/rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument washed with Alconox?	
Sampling instrument given site water rinse prior to deployment?	
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	
Sample bottles are lab certified, contaminant free?	
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	
Grab disposition / characteristic information recorded?	
Filtration for dissolved metals completed immediately after collection?	
Staff avoided contaminating samples at all times?	
Water samples collected on the upwind/upcurrent side of the boat?	
Equipment or field blank collected (if applicable)?	

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	
Field staff wearing fresh, powder free nitrile gloves?	
Equipment washed/rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument washed with Alconox?	
Sampling instrument given site water rinse prior to deployment?	
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	
Sample bottles are lab certified, contaminant free?	
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	
Grab disposition / characteristic information recorded?	
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	
Sediment evenly distributed among containers?	
Stainless steel or plastic scoop used to distribute sediment?	
Staff avoided contaminating samples at all times?	
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	
Special study sample collected (benthic bioaccumulation, if applicable)?	
Equipment or field blank collected (if applicable)?	

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
PT sensor downloaded successfully?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
Trawl debris captured and processed?	Y
All fish positively identified (make note of any FIDs)?	Y
All invertebrates positively identified (make note of any FIDs)?	Y
All fish and invertebrates enumerated (if more than ~300 specimens of a single	Y

## FIELD SAMPLING QA CHECKLIST

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	N
Anomaly vouchers collected (10% formalin)?	Y
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	Y
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	N
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

### 6. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

### 7. Sample Storage and Delivery:

Water samples stored cold on wet ice?	
Toxicity samples stored cold on wet ice?	
Sediment chem. samples stored cold on wet ice or frozen within 24 hours?	
Infaunal samples relaxed and preserved with formalin?	
Voucher samples preserved with 10% formalin?	
DNA samples preserved with 95% ethanol?	
Infaunal bioaccum samples stored immediately on ice and frozen asap?	
Plastic pollution study fish stored immediately on ice and frozen asap?	
Fish bioaccum specimens stored immediately on ice and frozen asap?	
Halibut study specimens stored immediately on ice and frozen asap?	
Cooler is taped shut for transport to lab?	
Completed COC is included in plastic bag in cooler?	

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 9/13/13 1638

Print Name/Company: John Rudolph Amec

San Diego Bay



# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/11/13

COMPLETED BY: JR

[illegible]

AGENCY: RAMP

Page 1 of 1

DATE: 8/11/13

COMPLETED BY: JR

[illegible]

# STATIC OCCUPATION

BL' Y'13

Agency Code THMP Station ID DID-8029 Salinity (ppt)           

Vessel Name Early Bird Date 8/11/03 At estuary Sites only           

Arrival Time 0756 (hh:mm) Station Fail Code None Abandoned site? N Y or N (if Y explain in comments)

Weather Clear Sea State Calm Rain           

Overcast X Choppy            Thunderstorm           

Partly cloudy            Rough            Fog           

Drizzle           

Wind Speed (kts) 3.5 Period (s) 0

Direction (4) NE Height (ft) 0

Direction (4) 0

Swell           

Nav Type DGPS X GPS           

Equipment Type Van Veen X Tandem Van Veen           

Station Comments           

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
0840	32.64690	-117.11816	9.9	19	19	Top of grab	0										
Grab Event Comments: Grab not closing properly																	
0846	32.64694	-117.11828	10.0	32	32	Shell	12	Mixed	None grey		Y						
Grab Event Comments: Saved for bioaccum. Partial grab																	
0850	32.64694	-117.11826	10.1	29	29	None	15	Mixed	None grey		Y	X	X	X			0137-0138
Grab Event Comments: Some shell debris																	
0903	32.64690	-117.11824	10.1	25	25	None	15	Mixed	None grey		Y				X	N	0139-0141
Grab Event Comments: Some shell debris																	
Grab Event Comments:																	
Grab Event Comments:																	
Grab Event Comments:																	

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/11/13

Time: 0805

Station ID: B17-8029

Water Depth: 9.8m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: D13-8029

Arrival Date/Time: 8/14/13 0756 *sed/water*  
9/5/13 0731 *trawl*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

### 2. General Sampling Procedures:

Samples collected in the following order: CTD, water, sediment, trawl?	Y
--	---

### 3. Water Sampling Procedures:

Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP?	Y
Grab disposition / characteristic information recorded?	Y
Filtration for dissolved metals completed immediately after collection?	Y
Staff avoided contaminating samples at all times?	Y
Water samples collected on the upwind/upcurrent side of the boat?	Y
Equipment or field blank collected (if applicable)?	NA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Samples collected in following order: benthic infauna, chem, tox, bioaccum?	✓
Field staff wearing fresh, powder free nitrile gloves?	✓
Equipment washed/rinsed from previous station?	✓
Vessel engine has been shut off for 3-5 minutes prior to sampling?	✓
Sampling instrument washed with Alconox?	✓
Sampling instrument given site water rinse prior to deployment?	✓
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	✓
Sample bottles are lab certified, contaminant free?	✓
Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?	✓
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	✗
Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?	✓
Grab disposition / characteristic information recorded?	✓
Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?	✓
Sediment evenly distributed among containers?	✓
Stainless steel or plastic scoop used to distribute sediment?	✓
Staff avoided contaminating samples at all times?	✓
Special study analytes collected (alkyl phenol, perflourinated, if applicable)?	NA
Special study sample collected (benthic bioaccumulation, if applicable)?	✓
Equipment or field blank collected (if applicable)?	NA

- 2 failed grab

### 5. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	✓
Weighing scales calibrated?	✓
Vessel passed through 100 m radius of station?	✓
Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?	✓
Trawl log info recorded (depth, tow wire length, times, coordinates)?	✓
Trawl remained within 10% of target depth?	✓
PT sensor downloaded successfully?	✓
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	✓
Fish and/or invertebrates obtained in trawl?	✓
Trawl debris captured and processed?	✓
All fish positively identified (make note of any FIDs)?	✓
All invertebrates positively identified (make note of any FIDs)?	✓
All fish and invertebrates enumerated (if more than ~300 specimens of a single	✓

**FIELD SAMPLING QA CHECKLIST**

species, use aliquot method of enumeration)?	
Standard length of all bony fish measured? Total length for cartilaginous fish? Measure a minimum of 250 specimens if the total catch exceeds this amount?	Y
Total biomass of each species group recorded?	Y
Composite weight of smaller specimens recorded (those <0.1 kg)?	Y
Any anomalies recorded?	Y
Photo of one representative from each species collected?	Y
Taxonomy voucher collected for each new species (10% formalin)?	Y
DNA voucher collected for each new species (95% ethanol) (outside label only)?	Y
Anomaly vouchers collected (10% formalin)?	Y
Fish bioaccum target species captured and preserved on ice to be frozen?	Y
Plastic pollution species captured and preserved on ice to be frozen?	Y
Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)	YN
Daily QA/QC field trawl audit performed by Cruise Leader?	Y

**6. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**7. Sample Storage and Delivery:**

Water samples stored cold on wet ice?	Y
Toxicity samples stored cold on wet ice?	Y
Sediment chem. samples stored cold on wet ice or frozen within 24 hours?	Y
Infaunal samples relaxed and preserved with formalin?	Y
Voucher samples preserved with 10% formalin?	Y
DNA samples preserved with 95% ethanol?	Y
Infaunal bioaccum samples stored immediately on ice and frozen asap?	Y
Plastic pollution study fish stored immediately on ice and frozen asap?	Y
Fish bioaccum specimens stored immediately on ice and frozen asap?	Y
Halibut study specimens stored immediately on ice and frozen asap?	YN
Cooler is taped shut for transport to lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph Amee

# STATIC OCCUPATION

BI 1'13

Agency Code 124MP Station ID 113-8020 Salinity (ppt)           

Vessel Name Early Bird Date 8/11/13 At estuary Sites only           

Arrival Time 1047 (hh:mm) Station Fail Code None Abandoned site? Y (If Y explain in comments)

Weather Clear Sea State Calm

Overcast            Choppier           

Partly cloudy            Rough           

Drizzle           

Rain            Thunderstorm            Fog           

Wind Speed (kts) 9.0 Nav Type DGPS

Direction (4) NW GPS           

Swell Period (s) 0 Equipment Type Van Veen

Height (ft) 0 Tandem Van Veen           

Direction (4) 0

Station Comments           

## GRAB EVENTS

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Infauna	Sed Chem	Grain Size	Sed Tox	Debris (Y/N)	Photos
1	1127	32.64179	-117.13141	5.0	39	None	16	Silt	None	Olive	N	X	X	X		N	0162-0163
2	1142	32.64182	-117.13137	5.0	35	None	16	Silt	None	Olive	N				X	N	0164-0166
3																	
4																	
5																	

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



## CTD Field Data Sheet

Date:

8/11/13

Time:

11a5-

Station ID:

B13-8020

Water Depth:

4.8m

Tide:

~~~~~

Weather:

Clear

Odor:

None

Floating Material?  
(Yes / No)

10

Photo Number:

NA

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

✓  
lev

Samples Collected?  
(Yes / No)

✓  
Yes

COMMENTS:

---

---

---

# FIELD SAMPLING QA CHECKLIST

Station ID: B17-8020

Arrival Date/Time: 8/11/13 1047 sed/water  
8/11/13 1320 trawl

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FID

8020

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | NA |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | NA |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph Amec

# STATIC OCCUPATION

BL 1713

Agency Code PLHMP  
 Vessel Name Early Bird  
 Arrival Time 1415 (hh:mm)

Weather  
 Clear ☒  
 Overcast ☐  
 Partly cloudy ☐  
 Drizzle ☐  
 Rain ☐  
 Thunderstorm ☐  
 Fog ☐

Sea State  
 Calm ☒  
 Choppy ☐  
 Rough ☐

Salinity (ppt)             
 At estuary Sites only

Station ID 8/4/13 B12-8017

Date 8/18/13

Abandoned site? ☒  
 Y or N (if Y explain in comments)

Station Fail Code None

Wind  
 Speed (kts) 6.0  
 Direction (°) North  
 Swell  
 Period (s) 0  
 Height (ft) 0  
 Direction (°) 0

Nav Type  
 DGPS ☒  
 GPS ☐  
 Equipment Type  
 Van Veen ☐  
 Tandem Van Veen ☒

Station Comments

eelgrass present in grab  
red algae

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 1443         | 32.6316              | -117.131              | 4         | 42                     | None               | 14               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 0177-0180 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 2                    | 1459         | 32.63165             | -117.13077            | 4         | 35                     | None               | 15               | Silt            | None     | Olive     | N                |         |          |            | X       | N            | 0181-0182 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/11/13

Time: 1430

Station ID: B13-8017

Water Depth: 4.2m

Tide: ✓

Weather: clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: NA

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8017

Arrival Date/Time: 8/11/13 1415 *sed/water*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

9/6/13 0708 *trawl*  
Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                           | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             |   |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |



8017

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | NA |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | NA |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | Y  |
| DNA samples preserved with 95% ethanol?                                  | Y  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y  |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/6/13 1630

Print Name/Company: \_\_\_\_\_

John Rudolph Amee

1211

[illegible]

## STATIC OCCUPATION

B1 r'13

|                                                      |            |         |                                                                                                                                                              |                                                                                                        |           |                                                                                                               |                       |                      |                   |          |
|------------------------------------------------------|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|-------------------|----------|
| Agency Code                                          | QHML       | Weather | <input checked="" type="checkbox"/> Clear<br><input type="checkbox"/> Overcast<br><input type="checkbox"/> Partly cloudy<br><input type="checkbox"/> Drizzle | <input type="checkbox"/> Rain<br><input type="checkbox"/> Thunderstorm<br><input type="checkbox"/> Fog | Sea State | <input checked="" type="checkbox"/> Calm<br><input type="checkbox"/> Choppy<br><input type="checkbox"/> Rough | Salinity (ppt)        | <input type="text"/> | Station ID        | B13-8061 |
| Vessel Name                                          | Early Bird |         |                                                                                                                                                              |                                                                                                        |           |                                                                                                               | At estuary Sites only | <input type="text"/> | Date              | 8/13/13  |
| Arrival Time                                         | 1200       |         |                                                                                                                                                              |                                                                                                        |           |                                                                                                               |                       |                      | Station Fail Code | N/A      |
| Abandoned site?<br>Y or N (If Y explain in comments) |            |         |                                                                                                                                                              |                                                                                                        |           |                                                                                                               |                       |                      |                   |          |

| Wind        |               | Swell      |             | Nav Type |     | Station Comments      |
|-------------|---------------|------------|-------------|----------|-----|-----------------------|
| Speed (kts) | Direction (°) | Period (s) | Height (ft) | DGPS     | GPS |                       |
| 10          | NW            |            |             | X        |     | Sect North St Pier 6. |
|             |               |            |             |          |     |                       |
|             |               |            |             |          |     |                       |

## GRAB EVENTS

| #                    | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmmmm) | Longitude<br>(DD°MM.mmmmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos         |
|----------------------|-----------------|---------------------------|----------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|----------------|
| 1                    | 1833            | 30-67613                  | -117.1294                  | 12           | 27                           | NONE                     | 16 hll              | silt/clay          | none        | olive green  | N                      | X       | A           | X             |            | NB              | JIC -<br>JIC 3 |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
| 2                    | 1845            | 30-67599                  | -117.12803                 | 12           | 11                           | NONE                     | 16 hll              | silt/fclg          | none        | olive sh     | N                      |         |             | X             |            | Y               | JIC -<br>JIC 6 |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |                |

- |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1   | Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 2   | Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 3   | Sediment Color: Brown, Gray, Black, Olive green, Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 4   | Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 5   | Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.) |  |
| Lab | Lab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only                                                                                                                                                                                                                        |  |

CTD Field Data Sheet

Date:

8/12/13

Time:

1215

Station ID:

B13-8069

Water Depth:

12 m.

Tide:

—

Weather:

clear

Odor:

—

Floating Material?  
(Yes / No)

No

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

—

Water Color:

clear

CTD Data Archived?  
(Yes / No)

yes

Samples Collected?  
(Yes / No)

yes

COMMENTS:

—

—

—

FIELD SAMPLING QA CHECKLIST

Station ID: B13-8069

Arrival Date/Time: 8/12/13 1200

Site Acceptable for Sampling: Water Y or N

Sediment: Y or N

Trawl: Y, N or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

*g.s. in bag*

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |            |
|-----------------------------------------------------------------------------------------|------------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>   |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>   |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>   |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>   |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>   |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>   |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>   |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>   |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>   |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>   |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>   |
| Equipment or field blank collected (if applicable)?                                     | <u>N/A</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

B13 8069

FIELD SAMPLING QA CHECKLIST

Sun distance to target: 7m

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                  | NA |
| Standard length of all bony fish measured? Total length for cartilaginous fish?               |    |
| Measure a minimum of 250 specimens if the total catch exceeds this amount?                    |    |
| Total biomass of each species group recorded?                                                 |    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                               |    |
| Any anomalies recorded?                                                                       |    |
| Photo of one representative from each species collected?                                      |    |
| Taxonomy voucher collected for each new species (10% formalin)?                               |    |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                |    |
| Anomaly vouchers collected (10% formalin)?                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                      |    |
| Plastic pollution species captured and preserved on ice to be frozen?                         |    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range) |    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                     |    |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

7. Sample Storage and Delivery:

|                                                                          |         |
|--------------------------------------------------------------------------|---------|
| Water samples stored cold on wet ice?                                    | Y       |
| Toxicity samples stored cold on wet ice?                                 | Y       |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y       |
| Infaunal samples relaxed and preserved with formalin?                    | NR NA Y |
| Voucher samples preserved with 10% formalin?                             | NA      |
| DNA samples preserved with 95% ethanol?                                  | NA      |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     |         |
| Plastic pollution study fish stored immediately on ice and frozen asap?  |         |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       |         |
| Halibut study specimens stored immediately on ice and frozen asap?       |         |
| Cooler is taped shut for transport to lab?                               | Y       |
| Completed COC is included in plastic bag in cooler?                      | Y       |

Additional Notes: Debris / trash in box / job 2 (1245)

Signature of QA/QC Personnel: [Signature] Date/Time: 8/12/13 1245

Print Name/Company: Tyler Hull A MEC



## BIC 13

Station ID


**At estuary Sites only**

Station Fail Code

## Nav Type

### Station Comments

Period (s)

DGPS 

Height (ft)

### Direction (4)

Equipment Type

ent Type

Equipment Type

**Van Veen**

**Van Veen**

## GRAB EVENTS

201-211-1959-22 (after)

[illegible]

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2 | Sediment Color: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3 | Sediment Odor: Brown, Gray, Black, Olive green, Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4 | Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5 | Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.) |
|   | Ab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Turbulent Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only                                                                                                                                                                                                  |

CTD Field Data Sheet

Date: 8/12/13

Time: ~~1600~~ 1555

Station ID: B13-8049

Water Depth: 12.5 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Y

Samples Collected?  
(Yes / No) Y

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13 - 8049

Arrival Date/Time: 8/12/13 1556

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Time distance to target 18m vs 47

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | y  |
| Equipment washed/rinsed from previous station?                                                             | y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | y  |
| Sampling instrument washed with Alconox?                                                                   | y  |
| Sampling instrument given site water rinse prior to deployment?                                            | y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | y  |
| Sample bottles are lab certified, contaminant free?                                                        | y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | y  |
| Grab disposition / characteristic information recorded?                                                    | y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | y  |
| Sediment evenly distributed among containers?                                                              | y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | y  |
| Staff avoided contaminating samples at all times?                                                          | y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

813-8049

FIELD SAMPLING QA CHECKLIST

NA

|                                                                                                                                                               |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| species, use aliquot method of enumeration)?                                                                                                                  |  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |  |  |
| Total biomass of each species group recorded?                                                                                                                 |  |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |  |  |
| Any anomalies recorded?                                                                                                                                       |  |  |
| Photo of one representative from each species collected?                                                                                                      |  |  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |  |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |  |  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |  |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |  |  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |  |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |  |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |  |  |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | NA |
| DNA samples preserved with 95% ethanol?                                  | -  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | -  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | -  |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | -  |
| Halibut study specimens stored immediately on ice and frozen asap?       | -  |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: musch/134 mts/occurrences on surface of sediment

Signature of QA/QC Personnel: [Signature] Date/Time: 8/12/13

Print Name/Company: Tyler Huff, ARMC

# STATIC OCCUPATION

Agency Code RMMP  
 Vessel Name Early 8.2.12  
 Arrival Time 1518 (hh:mm)

Weather  
 Clear ☒  
 Overcast ☐  
 Partly cloudy ☐  
 Drizzle ☐  
 Rain ☐  
 Thunderstorm ☐  
 Fog ☐

Sea State  
 Calm ☐  
 Choppy ☒  
 Rough ☐

Salinity (ppt)  
 At estuary Sites only

Station ID BI 3-8050

Date 8/12/13

Abandoned site? ☒ Y or N (if Y explain in comments)  
 Station Fail Code None

Wind  
 Speed (kts) S  
 Direction (4) SW  
 Swell  
 Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type  
 DGPS ☒  
 GPS ☐

Equipment Type  
 Van Veen ☐  
 Tandem Van Veen ☒

Station Comments

## GRAB EVENTS

Target: 32.6575 / -117.123

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1521         | 32.65778               | -117.12311              | 18.0      | 27                     | NONE               | 16cm             | Silt/clay       | None     | olive     | N                | X       | X        | X          |         | N            | 228-227 |
| 2                    | 1532         | 32.65769               | -117.12304              | 18.0      | 21                     | NONE               | 16cm             | Silt/clay       | None     | olive     | N                |         |          |            | X       |              | 228-229 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/12/13

Time: 1515

Station ID: B13-8050

Water Depth: 10 m

Tide: —

Weather: clear.

Odor: None

Floating Material?  
(Yes / No) N

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) N

Water Color: clear

CTD Data Archived?  
(Yes / No) J

Samples Collected?  
(Yes / No) J

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8050

Arrival Date/Time: 8/12/13 1518

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

5 m distance to 37 m

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

FIELD SAMPLING QA CHECKLIST

B13-8050

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  | NA |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |    |
| Total biomass of each species group recorded?                                                                                                                 |    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |    |
| Any anomalies recorded?                                                                                                                                       |    |
| Photo of one representative from each species collected?                                                                                                      |    |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |    |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |    |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |    |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |    |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | - |
| DNA samples preserved with 95% ethanol?                                  | - |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | - |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | - |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | - |
| Halibut study specimens stored immediately on ice and frozen asap?       | - |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes:

- on O+G 1L H2SO4 canker, odd spotty growth on lid  
- Replaced by new O+G Ser, but also had slight flecks on inside of lid.

Signature of QA/QC Personnel:

Date/Time: 8/12/13

Print Name/Company:

Tyler Huff AMEC

took O+G jar from extra kit to use for sample, bottle was inspected prior to sample being added. was clean.

# STATIC OCCUPATION

BI T'13

Agency Code RMM Station ID 613-8056

Vessel Name Early Bird Date 8/12/13

Arrival Time 1348 (hh:mm)

Weather: Clear ☒ Rain ☐  
 Overcast ☐ Thunderstorm ☐  
 Partly cloudy ☐ Fog ☐  
 Drizzle ☐

Sea State: Calm ☐ Chippy ☒ Rough ☐

Salinity (ppt)           

At estuary Sites only

Abandoned site? ☒ Station Fail Code None

Y or N (if Y explain in comments)

Wind: Speed (kts) 10 Period (s) 9  
 Direction (4) SW Height (ft) 0  
 Direction (4) 0

Swell:           

Nav Type: DGPS ☒ GPS ☐

Equipment Type: Van Veen ☐ Tandem Van Veen ☒

Station Comments: Outside of Navy Boom. Per 14  
 No longer ex. 133. (aerial photo shows it)

## GRAB EVENTS

target: 32.6603, -117.1073

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1408         | 32.6603                | -117.1073               | 10.3      | 50                     | NONE               | 16cm             | silt/clay       | NONE     | olive green | N                | X       | X        | X          |         | N            | see 221 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| 2                    | 1420         | 32.6607                | -117.1074               | 10.3      | 61                     | NONE               | 16cm             | silt/clay       | NONE     | olive green | N                |         |          |            | X       | N            | see 221 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/12/13

Time: 1300 - water sample

Station ID: B13-8056

Water Depth: 10.3m

Tide:

Weather: clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number:

Visible Turbidity Plume?  
(Yes / No) No

Water Color: clear

CTD Data Archived?  
(Yes / No) yes

Samples Collected?  
(Yes / No) yes

COMMENTS:

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8056

Arrival Date/Time: 1352 8/12/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                           | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

### 2. General Sampling Procedures:

*adjacent to Navy boom. In line with former Pier 14. Caerul shows it.*

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |            |
|-----------------------------------------------------------------------------------------|------------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>   |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>   |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>   |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>   |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>   |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>   |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>   |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>   |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>   |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>   |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>   |
| Equipment or field blank collected (if applicable)?                                     | <u>N/A</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

5 m Distance to boat = 50 m

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

FIELD SAMPLING QA CHECKLIST

B13-8058

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  | NA |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |    |
| Total biomass of each species group recorded?                                                                                                                 |    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |    |
| Any anomalies recorded?                                                                                                                                       |    |
| Photo of one representative from each species collected?                                                                                                      |    |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |    |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |    |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |    |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |    |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | y |
| Proper persons have signed and dated all COCs?                                                                                               | y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | y |

7. Sample Storage and Delivery:

|                                                                          |     |
|--------------------------------------------------------------------------|-----|
| Water samples stored cold on wet ice?                                    | y   |
| Toxicity samples stored cold on wet ice?                                 | y   |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | y   |
| Infaunal samples relaxed and preserved with formalin?                    | 1 y |
| Voucher samples preserved with 10% formalin?                             | 1   |
| DNA samples preserved with 95% ethanol?                                  | 1   |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | 1   |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | 1   |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | 1   |
| Halibut study specimens stored immediately on ice and frozen asap?       | 1   |
| Cooler is taped shut for transport to lab?                               | y   |
| Completed COC is included in plastic bag in cooler?                      | y   |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: \_\_\_\_\_

8/18/13 1425

Print Name/Company: \_\_\_\_\_

Tyler H. H. Huxley

# STATIC OCCUPATION

BK 713

Agency Code KUMP Station ID B13-8066 Salinity (ppt)           

Vessel Name early 8:20 II Date 8/10/13 At estuary Sites only           

Arrival Time 1000 (hh:mm) Station Fail Code NONE Abandoned site? N Y or N (If Y explain in comments)

Weather Clear Sea State Calm

Overcast            Choppiness           

Partly cloudy            Rough           

Drizzle            Rain           

Thunderstorm            Fog           

Wind 5 Swell 0

Speed (kts)            Period (s)           

Direction (4) NW Height (ft)           

Direction (4)            Direction (4)           

Nav Type DGPS Equipment Type Van Veen

GPS Tandem Van Veen

Station Comments actual station under security boom. shifted east ~ 2015 m

## GRAB EVENTS

target. 30.6718, -117.1286

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1054         | 30.67171               | -117.12831              | 12.0      | 65                     | NONE               | 16               | silt/clay       | NONE     | gray      | N                | X       | X        | X          |         | N            | 206-207 |
| 2                    | 1108         | 30.67164               | -117.12836              | 12        | 62                     | NONE               | 16               | silt/clay       | NONE     | gray      | N                |         |          |            | X       | N            | 208-209 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



CTD Field Data Sheet

Date: 8/12/13

Time: 1020

Station ID: B13-8066

Water Depth: 12.0 m

Tide: -

Weather: clear, breezy

Odor: -

Floating Material?  
(Yes / No) N

Photo Number: -

N

Visible Turbidity Plume?  
(Yes / No)

clear

Water Color:

CTD Data Archived?  
(Yes / No) y

Samples Collected?  
(Yes / No) y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8066

Arrival Date/Time: 8/12/13 1010

Site Acceptable for Sampling: Water: Y or N  
If No, provide reason: \_\_\_\_\_

Sediment: Y or N

Trawl: Y or NA

Mark each box with Y, N, or NA

## Field Procedures

Sun = 45m. distance to target

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                           | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |              |
|-----------------------------------------------------------------------------------------|--------------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>     |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>     |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>     |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>     |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>     |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y 7/8</u> |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>     |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>     |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>     |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>     |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>     |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>     |
| Equipment or field blank collected (if applicable)?                                     | <u>N/A</u>   |

90-254 crane barge going by @ 1030, near end of pier. Tight space. Engine off @ 1032/ out of area  
big passing by: @ 1035. all activity stopped @ 1038. and grab @ 1042.

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |     |
|------------------------------------------------------------------------------------------------------------|-----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | y   |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | y   |
| Equipment washed/rinsed from previous station?                                                             | y   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | y   |
| Sampling instrument washed with Alconox?                                                                   | y   |
| Sampling instrument given site water rinse prior to deployment?                                            | y   |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | y   |
| Sample bottles are lab certified, contaminant free?                                                        | y   |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | y   |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | y   |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | y   |
| Grab disposition / characteristic information recorded?                                                    | y   |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | y   |
| Sediment evenly distributed among containers?                                                              | y   |
| Stainless steel or plastic scoop used to distribute sediment?                                              | y   |
| Staff avoided contaminating samples at all times?                                                          | y   |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | N/A |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | N/A |
| Equipment or field blank collected (if applicable)?                                                        | N/A |

### 5. Trawl Sampling Procedures:

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

FIELD SAMPLING QA CHECKLIST

NA

|                                                                                                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| species, use aliquot method of enumeration)?                                                                                                                  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |  |
| Total biomass of each species group recorded?                                                                                                                 |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |  |
| Any anomalies recorded?                                                                                                                                       |  |
| Photo of one representative from each species collected?                                                                                                      |  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |  |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | — |
| DNA samples preserved with 95% ethanol?                                  | — |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | — |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | — |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | — |
| Halibut study specimens stored immediately on ice and frozen asap?       | — |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: Crane/ Barge traffic? between pier + Boom.  
allowed to submerge for sampling.  
Signature of QA/QC Personnel: [Signature] Date/Time: 8/12/13  
Print Name/Company: Rylee Huff, AMEC

# STATIC OCCUPATION

BL 1'13

Agency Code RUMP

Weather

Clear ☐  
Overcast ☒  
Partly cloudy ☐  
Drizzle ☐

Rain ☐  
Thunderstorm ☐  
Fog ☐

Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

13.3

At estuary Sites only

Station ID

1313-8064

Date

08/12/13

Vessel Name Eclypse

Arrival Time 0850

(hh:mm)

Abandoned site?

☒ Y or N (if Y explain in comments)

Station Fail Code

None

Wind

Speed (kts)

0

Direction (°)

0

Swell

Period (s)

0

Height (ft)

0

Direction (°)

0

Nav Type

DGPS ☒  
GPS ☐

Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

Station Comments

## GRAB EVENTS

target: 32.6709  
-117.124

Sample types (Chk all that apply)

| #                                                     | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (e) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|-------------------------------------------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                                                     | 0925         | 32-67104             | -117.1240             | 18m       | 18m                    | 25cm               | 3                | medium          | fail     | off       | N                | +       | +        |            | +       | +            | F21     |
| Grab Event Comments: fail, old recovery/added 8 weeks |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| 2                                                     | 0932         | 32-67096             | -117.12396            | 12        | 8m                     | none               | 16               | silt/clay       | none     | gray      | N                | +       | +        | X          | +       | N            | 202-203 |
| Grab Event Comments:                                  |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| 3                                                     | 0948         | 32-67097             | -117.12389            | 12        | 13m                    | none               | 16               | silt/clay       | none     | gray      | N                | +       | +        |            | +       | N            | 204-205 |
| Grab Event Comments:                                  |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments:                                  |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments:                                  |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments:                                  |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/12/13

Time: 0900

Station ID: B13-8064

Water Depth: 11m

Tide: -

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) N

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) N

Water Color: clear

CTD Data Archived?  
(Yes / No) yes

Samples Collected?  
(Yes / No) yes.

COMMENTS: Barge/ crane ~~removed~~ transit nearby  
in area but not during water/CTD  
collection.

# FIELD SAMPLING QA CHECKLIST

Station ID: B13 - 80 64 Arrival Date/Time: 8/12/13 0850

Site Acceptable for Sampling: Water Y or N Sediment Y or N Trawl: Y or NA  
If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

### 2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |     |
|-----------------------------------------------------------------------------------------|-----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y   |
| Equipment washed/rinsed from previous station?                                          | Y   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y   |
| Sampling instrument washed with Alconox?                                                | Y   |
| Sampling instrument given site water rinse prior to deployment?                         | Y   |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y   |
| Sample bottles are lab certified, contaminant free?                                     | Y   |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y   |
| Grab disposition / characteristic information recorded?                                 | Y   |
| Filtration for dissolved metals completed immediately after collection?                 | Y   |
| Staff avoided contaminating samples at all times?                                       | Y   |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y   |
| Equipment or field blank collected (if applicable)?                                     | N/A |

5m distance  
to target: 6m

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |        |
|------------------------------------------------------------------------------------------------------------|--------|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y      |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y      |
| Equipment washed/rinsed from previous station?                                                             |        |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y      |
| Sampling instrument washed with Alconox?                                                                   | Y      |
| Sampling instrument given site water rinse prior to deployment?                                            | Y      |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y      |
| Sample bottles are lab certified, contaminant free?                                                        | Y      |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y      |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y      |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y      |
| Grab disposition / characteristic information recorded?                                                    | Y      |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y      |
| Sediment evenly distributed among containers?                                                              | Y      |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y      |
| Staff avoided contaminating samples at all times?                                                          | Y      |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NR X N |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NR X N |
| Equipment or field blank collected (if applicable)?                                                        | NR X N |

1st  
grab  
failed.  
added  
weight  
worked  
good

### 5. Trawl Sampling Procedures:

N/A

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |



## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| species, use aliquot method of enumeration)?                                                                                                                  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |  |
| Total biomass of each species group recorded?                                                                                                                 |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |  |
| Any anomalies recorded?                                                                                                                                       |  |
| Photo of one representative from each species collected?                                                                                                      |  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

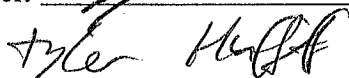
|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | NA |
| DNA samples preserved with 95% ethanol?                                  | NA |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | NA |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | NA |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 8/12/13 1000

Print Name/Company: \_\_\_\_\_



# STATIC OCCUPATION

BI T'13

Agency Code AKMP Station ID B13-8065

Vessel Name Early Breeze Date 8/12/13

Arrival Time 0715 (hh:mm) Station Fail Code None

Weather ☒ Clear ☐ Rain ☐ Thunderstorm ☐ Fog

Sea State ☒ Calm ☐ Choppy ☐ Rough

Salinity (ppt)            At estuary Sites only

Abandoned site? ☒ Y or N (if Y explain in comments)

Wind Speed (kts) 0 Period (s) 0

Direction (4) N/A Height (ft) 0

Direction (4) 0

Swell 0

Nav Type ☒ DGPS ☐ GPS

Equipment Type ☒ Van Veen ☐ Tandem Van Veen

Station Comments side-tied to YD-260  
Heavy crane barge

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 0750                 | 30.67150     | -117.11905             | 7                       | 36        | NONE                   | 16                 | silt             | NONE            | olive    | N         | X                | X       | X        | X          | N       | N            | 198-199 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| 0813                 | 30.67194     | -117.11915             | 7                       | 27        | NONE                   | 16                 | silt             | NONE            | olive    | N         | X                | X       | X        | X          | N       | N            | 200-201 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Poor closure - other (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/12/13

Time: 0720

Station ID: B13-8065

Water Depth: 6.8 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: \_\_\_\_\_

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) yes

Samples Collected?  
(Yes / No) yes

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FIELD SAMPLING QA CHECKLIST**

Station ID: B13- 0865

Arrival Date/Time: 8/12/13 0715

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: X, N, or NA

If No, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

**2. General Sampling Procedures:**

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

**3. Water Sampling Procedures:**

|                                                                                         |     |
|-----------------------------------------------------------------------------------------|-----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y   |
| Equipment washed/rinsed from previous station?                                          | Y   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y   |
| Sampling instrument washed with Alconox?                                                | Y   |
| Sampling instrument given site water rinse prior to deployment?                         | Y   |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y   |
| Sample bottles are lab certified, contaminant free?                                     | Y   |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y   |
| Grab disposition / characteristic information recorded?                                 | Y   |
| Filtration for dissolved metals completed immediately after collection?                 | Y   |
| Staff avoided contaminating samples at all times?                                       | Y   |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y   |
| Equipment or field blank collected (if applicable)?                                     | N/A |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |     |
|------------------------------------------------------------------------------------------------------------|-----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y   |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y   |
| Equipment washed/rinsed from previous station?                                                             | Y   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y   |
| Sampling instrument washed with Alconox?                                                                   | Y   |
| Sampling instrument given site water rinse prior to deployment?                                            | Y   |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y   |
| Sample bottles are lab certified, contaminant free?                                                        | Y   |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y   |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y   |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y   |
| Grab disposition / characteristic information recorded?                                                    | Y   |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y   |
| Sediment evenly distributed among containers?                                                              | Y   |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y   |
| Staff avoided contaminating samples at all times?                                                          | Y   |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | N/A |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y   |
| Equipment or field blank collected (if applicable)?                                                        | N/A |

### 5. Trawl Sampling Procedures:

|                                                                                              |     |
|----------------------------------------------------------------------------------------------|-----|
| Proper equipment used (Semi-balloon otter trawl)?                                            | N/A |
| Weighing scales calibrated?                                                                  | N/A |
| Vessel passed through 100 m radius of station?                                               | N/A |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | N/A |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | N/A |
| Trawl remained within 10% of target depth?                                                   | N/A |
| PT sensor downloaded successfully?                                                           | N/A |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | N/A |
| Fish and/or invertebrates obtained in trawl?                                                 | N/A |
| Trawl debris captured and processed?                                                         | N/A |
| All fish positively identified (make note of any FIDs)?                                      | N/A |
| All invertebrates positively identified (make note of any FIDs)?                             | N/A |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | N/A |

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| species, use aliquot method of enumeration)?                                                                                                                  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |  |
| Total biomass of each species group recorded?                                                                                                                 |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |  |
| Any anomalies recorded?                                                                                                                                       |  |
| Photo of one representative from each species collected?                                                                                                      |  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | NA |
| DNA samples preserved with 95% ethanol?                                  | NA |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | NA |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | NA |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/12/13 0835

Print Name/Company: \_\_\_\_\_

Tyler Huff AMEC

2x802  
APert.  
com +  
A/kg.

15



# STATIC OCCUPATION

BI T'13

Agency Code RNR

Weather ☒ Clear ☐ Rain ☐ Thunderstorm ☐ Fog

Sea State ☒ Calm ☐ Choppy ☐ Rough

Salinity (ppt)           

Station ID B13-8071

Vessel Name Early Bird II

Weather ☒ Clear ☐ Rain ☐ Thunderstorm ☐ Fog

Sea State ☒ Calm ☐ Choppy ☐ Rough

Salinity (ppt)           

Date 8/13/13

Arrival Time 1139 (hh:mm)

☒

Abandoned site?           

Station Fail Code NONE

Wind 7.0 Speed (kts)

Nav Type ☒ DGPS ☐ GPS

Station Comments Starbuck's Chem (grab 1) for pet. chlor. + Alkyl: (2x8.2).

Direction (4) West

Period (s) 0 Height (ft) 0 Direction (4) 0

32.6866  
-117.13416  
-117.134

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1201         | 32.68661               | -117.13409              | 10.0      | 13                     | NONE               | 16               | Silt/clay       | NONE     | olive green | N                | X       | X        | X          |         | N            | 251-252 |
| 2                    | 1217         | 32.68664               | -117.13402              | 10.0      | 5                      | NONE               | 16               | Silt/clay       | NONE     | olive green | N                |         |          | X          | X       | N            | 253-255 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/13/13

Time:

1135

Station ID:

B13-8077

Water Depth:

1000m

Tide:

~

Weather:

clear

Odor:

None

Floating Material?  
(Yes / No)

N, some

light foam/bubbles, less than prev.  
site. (8076)

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

clear

CTD Data Archived?  
(Yes / No)

y  
y

Samples Collected?  
(Yes / No)

yy

COMMENTS:

★ on white board  
for

B13-8077-  
grab 1

(photos

251-252)

photoshop in "7"

to be B13-8077.

## FIELD SAMPLING QA CHECKLIST

Station ID: 813-8077

Arrival Date/Time: 1139, 8/13/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

#### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

#### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

B13-8077

Juno  
d34 20m

## FIELD SAMPLING QA CHECKLIST

## 4. Sediment Sampling Procedures:

B13-8077

|                                                                                                            |     |
|------------------------------------------------------------------------------------------------------------|-----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y   |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y   |
| Equipment washed/rinsed from previous station?                                                             | Y   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y   |
| Sampling instrument washed with Alconox?                                                                   | Y   |
| Sampling instrument given site water rinse prior to deployment?                                            | Y   |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y   |
| Sample bottles are lab certified, contaminant free?                                                        | Y   |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y   |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y   |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y   |
| Grab disposition / characteristic information recorded?                                                    | Y   |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y   |
| Sediment evenly distributed among containers?                                                              | Y   |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y   |
| Staff avoided contaminating samples at all times?                                                          | Y   |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | yes |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | —   |
| Equipment or field blank collected (if applicable)?                                                        | —   |

yes

## 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

B13-8077

## FIELD SAMPLING QA CHECKLIST

NA

|                                                                                                                                                               |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| species, use aliquot method of enumeration)?                                                                                                                  |  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |  |  |
| Total biomass of each species group recorded?                                                                                                                 |  |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |  |  |
| Any anomalies recorded?                                                                                                                                       |  |  |
| Photo of one representative from each species collected?                                                                                                      |  |  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |  |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |  |  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |  |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |  |  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |  |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |  |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |  |  |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                         |   |
|-------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                   | Y |
| Toxicity samples stored cold on wet ice?                                | Y |
| Sediment chem. samples stored cold on wet ice, frozen within 24 hours?  | Y |
| Infaunal samples relaxed and preserved with formalin?                   | Y |
| Voucher samples preserved with 10% formalin?                            | — |
| DNA samples preserved with 95% ethanol?                                 | — |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?    | — |
| Plastic pollution study fish stored immediately on ice and frozen asap? | — |
| Fish bioaccum specimens stored immediately on ice and frozen asap?      | — |
| Halibut study specimens stored immediately on ice and frozen asap?      | — |
| Cooler is taped shut for transport to lab?                              | Y |
| Completed COC is included in plastic bag in cooler?                     | Y |

Additional Notes:

Signature of QA/QC Personnel:

[Signature]

Date/Time:

8/13/13 1225

Print Name/Company:

Tyler Huff / Ameri

# STATIC OCCUPATION

BI Y'13

Agency Code RKMP Station ID 613-8076

Weather Partly cloudy Salinity (ppt)   

Vessel Name Early Bird Date 8/13/13

Arrival Time 1045 (hh:mm) Station Fail Code None

Sea State    At estuary Sites only   

Abandoned site?    Y or N (if Y explain in comments)

Wind 4 Speed (kts) 0 Period (s) 0

Direction (4) 0 Height (ft) 0

Swell 0 Direction (4) 0

Nav Type    DGPS    GPS   

Equipment Type    Van Veen    Tandem Van Veen   

Station Comments   

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)  | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|------------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1045         | 32.68665             | -117.13847            | 10.0      | 63                     | None               | 16               | silt/clay       | None     | olive grey | N                | X       | X        | X          | X       | N            | 246-246 |
| 2                    | 1101         | 32.68615             | -117.13886            | 10.0      | 91                     | None               | 16               | silt/clay       | None     | olive grey | N                | X       | X        | X          | X       | Y            | 247-250 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/13/13

Time:

1025

Station ID:

B13-8076

Water Depth:

10.0m

Tide:

—

Weather:

clear

Odor:

none

Floating Material?  
(Yes / No)

SR ~~yes~~ Y (see comment)

Photo Number:

N

Visible Turbidity Plume?  
(Yes / No)

clear

Water Color:

CTD Data Archived?  
(Yes / No)

Y

Samples Collected?  
(Yes / No)

Y

COMMENTS:

small groups of  
protein / air forms on water through out area. photo.  
~~under stick up~~ from ship / photo 0244.  
activity in area?

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8076 Arrival Date/Time: 1045 8/13/13

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N Trawl: Y or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible? <u>adjacent to concrete box float.</u>                                                                                    | <u>Y</u> |
| Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |            |
|-----------------------------------------------------------------------------------------|------------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>   |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>   |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>   |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>   |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>   |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>   |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>   |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>   |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>   |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>   |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>   |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>   |
| Equipment or field blank collected (if applicable)?                                     | <u>N/A</u> |



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Sum distance: 39

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | y  |
| Equipment washed/rinsed from previous station?                                                             | y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | y  |
| Sampling instrument washed with Alconox?                                                                   | y  |
| Sampling instrument given site water rinse prior to deployment?                                            | y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | y  |
| Sample bottles are lab certified, contaminant free?                                                        | y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | y  |
| Grab disposition / characteristic information recorded?                                                    | y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | y  |
| Sediment evenly distributed among containers?                                                              | y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | y  |
| Staff avoided contaminating samples at all times?                                                          | y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

B13- 8076

## FIELD SAMPLING QA CHECKLIST

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                  | NA |
| Standard length of all bony fish measured? Total length for cartilaginous fish?               |    |
| Measure a minimum of 250 specimens if the total catch exceeds this amount?                    |    |
| Total biomass of each species group recorded?                                                 |    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                               |    |
| Any anomalies recorded?                                                                       |    |
| Photo of one representative from each species collected?                                      |    |
| Taxonomy voucher collected for each new species (10% formalin)?                               |    |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                |    |
| Anomaly vouchers collected (10% formalin)?                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                      |    |
| Plastic pollution species captured and preserved on ice to be frozen?                         |    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range) |    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                     |    |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                   | Y  |
| Toxicity samples stored cold on wet ice?                                | Y  |
| Sediment chem. samples stored cold on wet ice, frozen within 24 hours?  | Y  |
| Infaunal samples relaxed and preserved with formalin?                   | Y  |
| Voucher samples preserved with 10% formalin?                            | NA |
| DNA samples preserved with 95% ethanol?                                 | NA |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?    | NA |
| Plastic pollution study fish stored immediately on ice and frozen asap? | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?      | NA |
| Halibut study specimens stored immediately on ice and frozen asap?      | NA |
| Cooler is taped shut for transport to lab?                              | Y  |
| Completed COC is included in plastic bag in cooler?                     | Y  |

Additional Notes:

Signature of QA/QC Personnel:

Date/Time:

8/13/13

Print Name/Company:

Tyler H. H.

Rei 1/00



CTD Field Data Sheet

Date: 8/13/13

Time: 0900

Station ID: B13-8074

Water Depth: 10.2 m

Tide: overcast.

Weather: None

Odor: N

Floating Material?  
(Yes / No) -

Photo Number: N

Visible Turbidity Plume?  
(Yes / No) clear

Water Color: y

CTD Data Archived?  
(Yes / No) y

Samples Collected?  
(Yes / No) y

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8074 Arrival Date/Time: 0909 8/13/13

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N Trawl: Y, N or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NR</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

Sun distance: 10.2 m

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y |
| Equipment washed/rinsed from previous station?                                                             | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y |
| Sampling instrument washed with Alconox?                                                                   | Y |
| Sampling instrument given site water rinse prior to deployment?                                            | Y |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y |
| Sample bottles are lab certified, contaminant free?                                                        | Y |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y |
| Grab disposition / characteristic information recorded?                                                    | Y |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y |
| Sediment evenly distributed among containers?                                                              | Y |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y |
| Staff avoided contaminating samples at all times?                                                          | Y |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | — |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | — |
| Equipment or field blank collected (if applicable)?                                                        | — |

### 5. Trawl Sampling Procedures:

|                                                                                              |    |
|----------------------------------------------------------------------------------------------|----|
| Proper equipment used (Semi-balloon otter trawl)?                                            | NA |
| Weighing scales calibrated?                                                                  |    |
| Vessel passed through 100 m radius of station?                                               |    |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |    |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |    |
| Trawl remained within 10% of target depth?                                                   |    |
| PT sensor downloaded successfully?                                                           |    |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |    |
| Fish and/or invertebrates obtained in trawl?                                                 |    |
| Trawl debris captured and processed?                                                         |    |
| All fish positively identified (make note of any FIDs)?                                      |    |
| All invertebrates positively identified (make note of any FIDs)?                             |    |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |    |

8074

# FIELD SAMPLING QA CHECKLIST

NA

|                                                                                               |  |
|-----------------------------------------------------------------------------------------------|--|
| species, use aliquot method of enumeration)?                                                  |  |
| Standard length of all bony fish measured? Total length for cartilaginous fish?               |  |
| Measure a minimum of 250 specimens if the total catch exceeds this amount?                    |  |
| Total biomass of each species group recorded?                                                 |  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                               |  |
| Any anomalies recorded?                                                                       |  |
| Photo of one representative from each species collected?                                      |  |
| Taxonomy voucher collected for each new species (10% formalin)?                               |  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                |  |
| Anomaly vouchers collected (10% formalin)?                                                    |  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                      |  |
| Plastic pollution species captured and preserved on ice to be frozen?                         |  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range) |  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                     |  |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                   | Y  |
| Toxicity samples stored cold on wet ice?                                | Y  |
| Sediment chem. samples stored cold on wet ice, frozen within 24 hours?  | Y  |
| Infaunal samples relaxed and preserved with formalin?                   | Y  |
| Voucher samples preserved with 10% formalin?                            | NA |
| DNA samples preserved with 95% ethanol?                                 | NA |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?    | NA |
| Plastic pollution study fish stored immediately on ice and frozen asap? | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?      | NA |
| Halibut study specimens stored immediately on ice and frozen asap?      | NA |
| Cooler is taped shut for transport to lab?                              | Y  |
| Completed COC is included in plastic bag in cooler?                     | Y  |

Additional Notes:

Signature of QA/QC Personnel:

*[Handwritten Signature]*  
Tyler H. H.

Date/Time:

8/13/13

0930

Print Name/Company:

## STATION OCCUPATION

BI T'13

Agency Code RAMP

Weather

Clear ☐  
Overcast ☒  
Partly cloudy ☐  
Drizzle ☐

Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

☐

At estuary Sites only

Rain ☐  
Thunderstorm ☐  
Fog ☐Vessel Name Early Bird IIArrival Time 0805am

(hh:mm)

0812

Abandoned site?

Y or N (If Y explain in comments)

☒

Station Fail Code

NONE

Station ID

B13-8075

Date

8/13/13

Wind

Speed (kts)

0

Direction (°)

070

Swell

Period (s)

0

Height (ft)

0

Direction (°)

0

Nav Type

DGPS ☒GPS ☐

Equipment Type

Van Veen ☐Tandem Van Veen ☒

Station Comments

-Sandy silt  
-init'd grab next to pier was rocky/shell hash  
-moved about 20m away from pier for red grabs

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (N/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (N/N) | Photos       |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|--------------|
| 1                    | 0815         | 32.68564               | -117.13416              | 9.2m      | 82                     | NONE               | 16               | silt/clay       | NONE     | olive green | N                | X       | X        | X          |         | N            | 0236<br>0037 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| 2                    | 0830         | 32.68567               | -117.13386              | 10m       | 83                     | NONE               | 16               | silt/clay       | NONE     | olive green | N                |         |          |            | X       | N            | 0238<br>0039 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| 3                    |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
|                      |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
|                      |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
|                      |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
|                      |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |

Sample types (Chk all that apply)

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity &lt;25psu, Too Shallow (comment req.), Too many Event Failures (comment req.),

req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, &lt; 5 cm Penetration, &lt;= 7 cm Penetration - biology only



CTD Field Data Sheet

Date: 8/13/13

Time: 0745

Station ID: B13 - 8075

Water Depth: 9.2m

Tide: —

Weather: overcast

Odor: NONE

Floating Material?  
(Yes / No) ~~NR~~ No Yes (see comment)

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) NO

Water Color: clear

CTD Data Archived?  
(Yes / No) y

Samples Collected?  
(Yes / No) y

COMMENTS: slight sheen (oil) on  
surface of water.  
sampled closer to pier than sed.  
moved away from pier ~ 70 feet  
to do sed sampling.

## FIELD SAMPLING QA CHECKLIST

Station ID: RHMP B13-8075 Arrival Date/Time: 8/13/13 0812

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                           | <u>Y</u> |
| Depth and benthic salinity recorded? are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

FIELD SAMPLING QA CHECKLIST

13-8075

4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

5. Trawl Sampling Procedures:

NA

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| Proper equipment used (Semi-balloon otter trawl)?                                            |  |
| Weighing scales calibrated?                                                                  |  |
| Vessel passed through 100 m radius of station?                                               |  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       |  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        |  |
| Trawl remained within 10% of target depth?                                                   |  |
| PT sensor downloaded successfully?                                                           |  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? |  |
| Fish and/or invertebrates obtained in trawl?                                                 |  |
| Trawl debris captured and processed?                                                         |  |
| All fish positively identified (make note of any FIDs)?                                      |  |
| All invertebrates positively identified (make note of any FIDs)?                             |  |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               |  |

B13-8075

# FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  | NA |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? |    |
| Total biomass of each species group recorded?                                                                                                                 |    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               |    |
| Any anomalies recorded?                                                                                                                                       |    |
| Photo of one representative from each species collected?                                                                                                      |    |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               |    |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                |    |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      |    |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         |    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 |    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     |    |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                         |   |
|-------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                   | Y |
| Toxicity samples stored cold on wet ice?                                | Y |
| Sediment chem. samples stored cold on wet ice, frozen within 24 hours?  | Y |
| Infaunal samples relaxed and preserved with formalin?                   | Y |
| Voucher samples preserved with 10% formalin?                            | — |
| DNA samples preserved with 95% ethanol?                                 | — |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?    | — |
| Plastic pollution study fish stored immediately on ice and frozen asap? | — |
| Fish bioaccum specimens stored immediately on ice and frozen asap?      | — |
| Halibut study specimens stored immediately on ice and frozen asap?      | — |
| Cooler is taped shut for transport to lab?                              | Y |
| Completed COC is included in plastic bag in cooler?                     | Y |

Additional Notes: initial sed grab @ pre produced Rocks/ shell Kays

Signature of QA/QC Personnel: [Signature] Date/Time: 8/13/13 0850

Print Name/Company: Tyler Hunt / AMEC

if needed  
make a data entry.  
(GPS of center) good grab.  
moved slightly away from pier.

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RAMP

Page 1 of 1

DATE: 8/26/13

COMPLETED BY: VR

[illegible]

\* Special study chems and dops

14

## STATION OCCUPATION

BIGHT'13

|                         |                   |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                          |                                                      |                                     |
|-------------------------|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|------------------------------------------------------|-------------------------------------|
| Agency Code             | <u>PHMP</u>       | Weather | <input checked="" type="checkbox"/> Clear<br><input type="checkbox"/> Overcast<br><input type="checkbox"/> Partly cloudy<br><input type="checkbox"/> Drizzle | Rain         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | Sea State | <input checked="" type="checkbox"/> Calm<br><input type="checkbox"/> Choppy<br><input type="checkbox"/> Rough | Salinity (ppt)        | <input type="checkbox"/> | Station ID                                           | <u>013-8014</u>                     |
| Vessel Name             | <u>Early Bird</u> |         |                                                                                                                                                              | Thunderstorm | <input type="checkbox"/>                                                         |           |                                                                                                               | At estuary Sites only |                          | Date                                                 | <u>8/26/13</u>                      |
| Arrival Time<br>(hh:mm) | <u>0917</u>       |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                          | Station Fail Code                                    | <u>None</u>                         |
|                         |                   |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                          | Abandoned site?<br>Y or N (if Y explain in comments) | <input checked="" type="checkbox"/> |

|      |               |           |       |               |          |                |                                                                                          |                  |             |
|------|---------------|-----------|-------|---------------|----------|----------------|------------------------------------------------------------------------------------------|------------------|-------------|
| Wind | Speed (kts)   | <u>2</u>  | Swell | Period (s)    | <u>0</u> | Nav Type       | <input checked="" type="checkbox"/> DGPS<br><input type="checkbox"/> GPS                 | Station Comments | <div></div> |
|      | Direction (4) | <u>NE</u> |       | Height (ft)   | <u>0</u> | Equipment Type | <input type="checkbox"/> Van Veen<br><input checked="" type="checkbox"/> Tandem Van Veen |                  |             |
|      |               |           |       | Direction (4) | <u>0</u> |                |                                                                                          |                  |             |

## GRAB EVENTS

| #                                            | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmmmm) | Longitude<br>(DD°MM.mmmmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos    |
|----------------------------------------------|-----------------|---------------------------|----------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-----------|
|                                              |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 0944                                         | 32.62664        | -117.13434                | 3.0                        | 64           | None                         | 16                       | Humic Grey          | Silt               | Humic       | Grey         | N                      | X       | X           | X             |            | N               | 0286-0287 |
| Grab Event Comments: Filamentous Green Algae |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 0957                                         | 32.62649        | -117.13472                | 3.0                        | 26           | None                         | 16                       | Humic Grey          | Silt               | Humic       | Grey         | N                      |         |             |               | X          | N               | 0288-0289 |
| Grab Event Comments: Filamentous Green Algae |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                         |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                         |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                         |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                         |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                         |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Coronado Cays

Date: 8/26/13

Time: 0930

Station ID: B13-8014

Water Depth: 3.0

Tide: —

Weather: Overcast

Odor: Slight burnt smell in air

Floating Material?  
(Yes / No) No

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8014

Arrival Date/Time: 8/26/13 0917

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/26/13 1800

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

|              |                        |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                      |                   |                 |
|--------------|------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|-------------------|-----------------|
| Agency Code  | <u>1144m?</u>          | Weather | <input type="checkbox"/> Clear<br><input checked="" type="checkbox"/> Overcast<br><input type="checkbox"/> Partly cloudy<br><input type="checkbox"/> Drizzle | Rain         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | Sea State | <input checked="" type="checkbox"/> Calm<br><input type="checkbox"/> Choppy<br><input type="checkbox"/> Rough | Salinity (ppt)        | <input type="text"/> | Station ID        | <u>B13-80/3</u> |
| Vessel Name  | <u>Early Bird</u>      |         |                                                                                                                                                              | Thunderstorm | <input type="checkbox"/>                                                         |           |                                                                                                               | At estuary Sites only |                      | Date              | <u>8/26/13</u>  |
| Arrival Time | <u>0743</u><br>(hh:mm) |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                      | Abandoned site?   | <u>None</u>     |
|              |                        |         |                                                                                                                                                              |              |                                                                                  |           |                                                                                                               |                       |                      | Station Fail Code | <u>None</u>     |

Y or N (if Y explain in comments)

|      |               |          |       |               |          |                |                                                                                          |                  |             |
|------|---------------|----------|-------|---------------|----------|----------------|------------------------------------------------------------------------------------------|------------------|-------------|
| Wind | Speed (kts)   | <u>0</u> | Swell | Period (s)    | <u>0</u> | Nav Type       | <input checked="" type="checkbox"/> DGPS<br><input type="checkbox"/> GPS                 | Station Comments | <div></div> |
|      | Direction (4) | <u>—</u> |       | Height (ft)   | <u>0</u> | Equipment Type | <input type="checkbox"/> Van Veen<br><input checked="" type="checkbox"/> Tandem Van Veen |                  |             |
|      |               |          |       | Direction (4) | <u>0</u> |                |                                                                                          |                  |             |

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
|                      | 0818         | 32.62360               | -117.13346              | 3         | 52                     | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 276-278 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|                      | 0834         | 32.62370               | -117.13346              | 3         | 55                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | N            | 279-280 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

Sample types (Chk all that apply)

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/26/13

Time: 0740

Station ID: B13-8013

Water Depth: 3.0m

Tide: —

Weather: Overcast

Odor: No

Floating Material? Yes foam bubbles on surface, a couple of  
(Yes / No) oil blotches on surface

Photo Number: —

Visible Turbidity Plume? No  
(Yes / No)

Water Color: light green

CTD Data Archived? Yes  
(Yes / No)

Samples Collected? Yes  
(Yes / No)

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Coronado Cays

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-5013

Arrival Date/Time: 8/26/13 0743

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

### 2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 8/26/13 1800

Print Name/Company: John Rudolph AMEC

# BIGH'13

Salinity (ppt)

Date 8/26/13

|                 |                   |
|-----------------|-------------------|
| Abandoned site? | Station Fail Code |
|                 | 1/10/02           |

## Nav Type

X  
GPS

GPS

Equipment Type

**Van Veen**

Tandem Van Veen

## Sample types (Chk all that apply)

[illegible]

Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

Sediment Color: Brown, Gray, Black, Olive green, Red

Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

Station Fail codes: None, Temporary - sea conditions (

Station 1 can codes: none, temporary access allowed, no access allowed, vessel safety (comment req.), no access allowed (comment req.).

Anthropogenic obstruction (comment req.), Natural ha

des: None, Outside Radius Limit, Outside Target Depth, Premat

surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 5/26/13

Time: 1120

Station ID: B13-8028

Water Depth: 12.0

Tide: ✓

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No  
✓

Photo Number: \_\_\_\_\_

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) No Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## FIELD SAMPLING QA CHECKLIST

Station ID: B13-5028

Arrival Date/Time: 8/26/13 1107

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/26/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGH 1'13

|              |            |               |       |              |           |      |                       |                                   |          |
|--------------|------------|---------------|-------|--------------|-----------|------|-----------------------|-----------------------------------|----------|
| Agency Code  | THMP       | Weather       | Clear | Rain         | Sea State | Calm | Salinity (ppt)        | Station ID                        | B13-8030 |
| Vessel Name  | Early Bird | Overcast      | X     | Thunderstorm | Choppy    |      | At estuary Sites only | Date                              | 8/26/13  |
| Arrival Time | 1303       | Partly cloudy |       | Fog          | Rough     |      |                       | Station Fail Code                 | None     |
|              |            | Drizzle       |       |              |           |      |                       | Abandoned site?                   | N        |
|              |            |               |       |              |           |      |                       | Y or N (if Y explain in comments) |          |

|                  |             |   |                 |   |
|------------------|-------------|---|-----------------|---|
| Wind             | Speed (kts) | 2 | Direction (4)   | N |
| Swell            | Period (s)  | 0 | Height (ft)     | 0 |
|                  |             |   | Direction (4)   | 0 |
| Nav Type         | DGPS        | X | GPS             |   |
| Equipment Type   | Van Veen    |   | Tandem Van Veen | X |
| Station Comments |             |   |                 |   |

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos      |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-------------|
| 1321                 | 32.64727     | -17.11667            | 13                    | 36        | None                   | 15                 | None             | Fine Sand       | None     | Gray      | Y                | X       | X        | X          |         | Y            | 296 - 300   |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| 1336                 | 32.64754     | -17.11667            | 13                    | 58        | None                   | 16                 | None             | Fine Sand       | None     | Grey      | Y                |         |          |            | X       | N            | 0301 - 0302 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |             |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

8/26/13

Time:

1310

Station ID:

B13-8030

Water Depth:

~~11.6~~ 12.6

Tide:

**Keywords:** *Self-esteem, self-esteem threat, self-esteem threat sensitivity, self-esteem threat sensitivity scale, self-esteem threat sensitivity scale-2*

Weather:

Overcast

Odor:

None

Floating Material?  
(Yes / No)



Photo Number:

Weekend and Holiday Hours:

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

*(continued)*

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8030

Arrival Date/Time: 8/26/13 1303

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 8/26/13 1500

Print Name/Company: John Rudolph AMEC

## STATION OCCUPATION

BIGHT '13

|              |                   |               |                                     |                          |                          |                          |                       |                                   |                |                   |
|--------------|-------------------|---------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-----------------------|-----------------------------------|----------------|-------------------|
| Agency Code  | <u>RAMP</u>       | Weather       | Clear                               | <input type="checkbox"/> | Rain                     | <input type="checkbox"/> | Salinity (ppt)        | <u>313-8636</u>                   | Station ID     | <u>313-8636</u>   |
| Vessel Name  | <u>Early Bird</u> | Overcast      | <input checked="" type="checkbox"/> | Thunderstorm             | <input type="checkbox"/> | Choppy                   | At estuary Sites only | Date                              | <u>8/26/13</u> |                   |
| Arrival Time | <u>1402</u>       | Partly cloudy | <input type="checkbox"/>            | Fog                      | <input type="checkbox"/> | Rough                    |                       | Abandoned site?                   | <u>N</u>       | Station Fail Code |
|              |                   | Drizzle       | <input type="checkbox"/>            |                          |                          |                          |                       | Y or N (if Y explain in comments) | <u>None</u>    |                   |

|      |               |            |       |               |          |                |                 |                                     |                  |  |
|------|---------------|------------|-------|---------------|----------|----------------|-----------------|-------------------------------------|------------------|--|
| Wind | Speed (kts)   | <u>9.1</u> | Swell | Period (s)    | <u>0</u> | Nav Type       | DGPS            | <input checked="" type="checkbox"/> | Station Comments |  |
|      | Direction (4) | <u>W</u>   |       | Height (ft)   | <u>0</u> |                | GPS             | <input type="checkbox"/>            |                  |  |
|      |               |            |       | Direction (4) | <u>0</u> | Equipment Type | Van Veen        | <input checked="" type="checkbox"/> |                  |  |
|      |               |            |       |               |          |                | Tandem Van Veen |                                     |                  |  |

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox       | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------------|--------------|-----------|
|                      | 1428         | 32.64786             | -117.11614            | 12        | 51                     | None               | 16               | Silt Sand       | None     | Grey      | Y                | X       | X        | X          | <del>40</del> | N            | 0304-0305 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
|                      | 1441         | 32.64786             | -117.11623            | 12        | 54                     | None               | 16               | Sand            | None     | Grey      | Y                |         |          |            | X             | N            | 306-0308  |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |               |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Vessel safety obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/26/13

Time: 1415

Station ID: B13-8036

Water Depth: 12.1

Tide: \_\_\_\_\_

Weather: *Overcast*

Odor: None

Floating Material?  
(Yes / No) None

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

Samples Collected? Yes  
(Yes / No)

COMMENTS: \_\_\_\_\_

\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8036

Arrival Date/Time: 8/26/13 1402

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/26/13 1800

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGH'13

| Wind | Speed (kts) | Direction (4) | Swell | Period (s) | Height (ft) | Direction (4) | Nav Type | DGPS | GPS | Equipment Type | Van Veen | Tandem | Station Comments |
|------|-------------|---------------|-------|------------|-------------|---------------|----------|------|-----|----------------|----------|--------|------------------|
|      | 10.1        | W             |       | 0          | 0           | 0             |          | X    |     |                |          |        |                  |

Sample types (Chk all that apply)

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

8/26/13

Time:

1520

Station ID:

B13-8038

Water Depth:

12

Tide:

**© 1999 Datasoft**

Weather:

Overcast

Odor:

None

Floating Material?  
(Yes / No)

No

Photo Number:

**Pharmacokinetic Parameters**

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

[illegible]

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-5038

Arrival Date/Time: 8/26/13 N70

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/26/13 1:00

Print Name/Company: \_\_\_\_\_

John Rudolf AMEC

## STATION OCCUPATION

BIGH 1'13

|              |                   |               |          |              |           |          |                       |                                   |                |
|--------------|-------------------|---------------|----------|--------------|-----------|----------|-----------------------|-----------------------------------|----------------|
| Agency Code  | <u>RKMP</u>       | Weather       | Clear    | Rain         | Sea State | <u>X</u> | Salinity (ppt)        | Station ID                        | <u>BD-8040</u> |
| Vessel Name  | <u>Early Bird</u> | Overcast      |          | Thunderstorm | Choppy    |          | At estuary Sites only | Date                              | <u>8/26/13</u> |
| Arrival Time | <u>1619</u>       | Partly cloudy | <u>X</u> | Fog          | Rough     |          |                       | Station Fail Code                 | <u>None</u>    |
|              |                   | Drizzle       |          |              |           |          |                       | Abandoned site?                   | <u>N</u>       |
|              |                   |               |          |              |           |          |                       | Y or N (if Y explain in comments) |                |

|      |               |            |       |               |          |                |                 |          |                  |
|------|---------------|------------|-------|---------------|----------|----------------|-----------------|----------|------------------|
| Wind | Speed (kts)   | <u>7.0</u> | Swell | Period (s)    | <u>6</u> | Nav Type       | DGPS            | <u>X</u> | Station Comments |
|      | Direction (4) | <u>W</u>   |       | Height (ft)   | <u>0</u> |                | GPS             |          |                  |
|      |               |            |       | Direction (4) | <u>0</u> | Equipment Type | Van Veen        |          |                  |
|      |               |            |       |               |          |                | Tandem Van Veen | <u>X</u> |                  |

## GRAB EVENTS

| #                                             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|-----------------------------------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1636                                          | 32.64922     | -117.11006           | 4.4                   | 25        | None                   | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 214-0216  |
| Grab Event Comments: Special Study Chem + Dup |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1651                                          | 32.6491      | -117.1100            | 4.4                   | 29        | None                   | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | N            | 0217-0220 |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                          |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Poor closure - other (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

8/26/13

Time:

1630

Station ID:

B13-F040

Water Depth:

4.4 m

Tide:

**Keywords:** *workplace spirituality, organizational commitment, organizational trust, organizational identification, organizational citizenship behaviors*

Weather:

P. Cloudy

Odor:

None

Floating Material?  
(Yes / No)

No

Photo Number:

◆ 442 ◆

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

---

---

---



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-5040

Arrival Date/Time: 8/26/13 1619

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

+dyps

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/26/13 1800

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/27/13

COMPLETED BY: TR

[illegible]

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 8/27/13

COMPLETED BY: JR

[illegible]

\* Make note on COC for Dups, MS/MSD

## STATION OCCUPATION

BIGHT'13

|              |                        |               |                                           |                                       |           |                                          |                       |                   |                 |
|--------------|------------------------|---------------|-------------------------------------------|---------------------------------------|-----------|------------------------------------------|-----------------------|-------------------|-----------------|
| Agency Code  | <u>RHMP</u>            | Weather       | <input checked="" type="checkbox"/> Clear | <input type="checkbox"/> Rain         | Sea State | <input checked="" type="checkbox"/> Calm | Salinity (ppt)        | Station ID        | <u>B03-8052</u> |
| Vessel Name  | <u>Ealy Bird</u>       | Overcast      | <input type="checkbox"/>                  | <input type="checkbox"/> Thunderstorm | Choppy    | <input type="checkbox"/>                 | At estuary Sites only | Date              | <u>8/27/13</u>  |
| Arrival Time | <u>0720</u><br>(hh:mm) | Partly cloudy | <input type="checkbox"/>                  | <input type="checkbox"/> Fog          | Rough     | <input type="checkbox"/>                 |                       | Abandoned site?   | <u>None</u>     |
|              |                        | Drizzle       | <input type="checkbox"/>                  |                                       |           | <input checked="" type="checkbox"/>      |                       | Station Fail Code | <u>None</u>     |

Y or N (if Y explain in comments)

|      |               |            |       |               |          |                |                 |                                     |                  |
|------|---------------|------------|-------|---------------|----------|----------------|-----------------|-------------------------------------|------------------|
| Wind | Speed (kts)   | <u>1.0</u> | Swell | Period (s)    | <u>0</u> | Nav Type       | DGPS            | <input checked="" type="checkbox"/> | Station Comments |
|      | Direction (4) | <u>LV</u>  |       | Height (ft)   | <u>0</u> |                | GPS             | <input type="checkbox"/>            |                  |
|      |               |            |       | Direction (4) | <u>0</u> | Equipment Type | Van Veen        | <input type="checkbox"/>            |                  |
|      |               |            |       |               |          |                | Tandem Van Veen | <input checked="" type="checkbox"/> |                  |

## GRAB EVENTS

| #                    | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmm) | Longitude<br>(DD°MM.mmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(V/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos    |
|----------------------|-----------------|-------------------------|--------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-----------|
|                      | 0819            | 32.65834                | -117.14422               | 5.1          | 21                           | None                     | 16                  | Silt               | None        | Olive        | N                      | X       | X           | X             |            | N               | 0324-0326 |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
|                      | 0835            | 32.65833                | -117.14422               | 5.1          | 25                           | None                     | 16                  | Silt               | None        | Olive        | N                      |         |             |               | X          | N               | 0327-0329 |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive-green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

8/27/13

Time:

0734

Station ID:

B13-5052

Water Depth:

51

Tide:

**DE GRUYTER**

Weather:

Clear

Odor:

None

Floating Material?  
(Yes / No)

None

Photo Number:

© All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without prior written permission from the publisher.

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

Source: <http://www.fishbase.org>.

bioRxiv preprint doi: <https://doi.org/10.1101/2019.05.20.256468>; this version posted May 20, 2019. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

Journal of Management Inquiry 22(1) 3-16  
© The Author(s) 2013  
Reprints and permissions: [sagepub.com/journalsPermissions.nav](http://sagepub.com/journalsPermissions.nav)  
DOI: 10.1177/1056492613505111  
jmi.sagepub.com

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8052

Arrival Date/Time: 8/27/13 0720 *sed/water*  
9/15/13 1016 *trawl*

Site Acceptable for Sampling: Water: ☒ or N

Sediment: ☒ or N

Trawl: ☒ N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |                 |
|------------------------------------------------------------------------------------------------------------|-----------------|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y               |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y               |
| Equipment washed/rinsed from previous station?                                                             | Y               |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y               |
| Sampling instrument washed with Alconox?                                                                   | Y               |
| Sampling instrument given site water rinse prior to deployment?                                            | Y               |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y               |
| Sample bottles are lab certified, contaminant free?                                                        | Y               |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y               |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y               |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y               |
| Grab disposition / characteristic information recorded?                                                    | Y               |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y               |
| Sediment evenly distributed among containers?                                                              | Y               |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y               |
| Staff avoided contaminating samples at all times?                                                          | Y               |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA              |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | <del>NA</del> Y |
| Equipment or field blank collected (if applicable)?                                                        | NA              |

### 5. Trawl Sampling Procedures:

|                                                                                              |         |
|----------------------------------------------------------------------------------------------|---------|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y       |
| Weighing scales calibrated?                                                                  | Y       |
| Vessel passed through 100 m radius of station?                                               | Y       |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y       |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y       |
| Trawl remained within 10% of target depth?                                                   | Y       |
| PT sensor downloaded successfully?                                                           | Y       |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y       |
| Fish and/or invertebrates obtained in trawl?                                                 | Y       |
| Trawl debris captured and processed?                                                         | Y       |
| All fish positively identified (make note of any FIDs)?                                      | Y       |
| All invertebrates positively identified (make note of any FIDs)?                             | N - FID |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y       |



8052

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | N |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

Agency Code TLAMP Station ID 313-8060 Salinity (ppt)           

Vessel Name Ecol B rd Date 8/27/13 At estuary Sites only           

Arrival Time 1040 (hh:mm) Station Fail Code None Abandoned site? N  
 Y or N (if Y explain in comments)

Weather Clear Sea State Calm

Overcast            Choppier           

Partly cloudy            Rough           

Drizzle           

Rain            Thunderstorm            Fog           

Wind            Swell           

Speed (kts) 8.5 Period (s) 0

Direction (4) W Height (ft) 0

Direction (4) 0

## Station Comments

Nav Type           

DGPS           

GPS           

Equipment Type           

Van Veen           

Tandem Van Veen           

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 1120         | 32.66518             | -117.14980            | 4.3       | 36                     | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 0331-0333 |
| 2                    | 1134         | 32.66521             | -117.14979            | 4.3       | 40                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | N            | 0334-0336 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/27/13

Time: 1100

Station ID: B13-8060

Water Depth: 4.3 m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No)       NB      

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

Samples Collected?  
(Yes / No) Yes

COMMENTS:

---

---

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8060

Arrival Date/Time: 8/27/13 1040 *sed/water*  
9/4/13 0932 *trawl*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FIDs

8060

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/4/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGH'13

| Nav Type | Equipment Type  |
|----------|-----------------|
| DGPS     | Van Veen        |
| GPS      | Tandem Van Veen |

## Sample types (Chk all that apply)

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fall codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not samplable - other (comment req.)

## CTD Field Data Sheet

Date:

8/27/13

Time:

1450

Station ID:

B13-8078

Water Depth:

13.0

Tide:

~~CONFIDENTIAL~~

Weather:

Clear

Odor:

No

Floating Material?  
(Yes / No)

20

Photo Number:

**Quadrupole mass filter**

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

U  
ies

COMMENTS:

**Abstract**



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8078

Arrival Date/Time: 8/27/13 1430 sed/water

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

9/4/13 0716 trawl  
Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | ✓ |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

— FIDs

8078

### FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| species, use aliquot method of enumeration)?                                                                                                                  |      |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y    |
| Total biomass of each species group recorded?                                                                                                                 | Y    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y    |
| Any anomalies recorded?                                                                                                                                       | N    |
| Photo of one representative from each species collected?                                                                                                      | Y    |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | NA Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y    |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA   |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y    |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y    |

#### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

#### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/4/13 1700

Print Name/Company: John Rudolph AMEC

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 5/28/13

COMPLETED  
BY: J/R

[illegible]

AGENCY: RHMP

Page 1 of 1

DATE: 8/28/13

COMPLETED BY: JR

[illegible]

## STATION OCCUPATION

BIGHT'13

|              |            |               |       |   |              |  |           |      |   |                       |  |                                   |         |
|--------------|------------|---------------|-------|---|--------------|--|-----------|------|---|-----------------------|--|-----------------------------------|---------|
| Agency Code  | RTMP       | Weather       | Clear | X | Rain         |  | Sea State | Calm | X | Salinity (ppt)        |  | Station ID                        | 03-8033 |
| Vessel Name  | Early Dick | Overcast      |       |   | Thunderstorm |  | Choppy    |      |   | At estuary Sites only |  | Date                              | 8/28/13 |
| Arrival Time | 1608       | Partly cloudy |       |   | Fog          |  | Rough     |      |   |                       |  | Station Fail Code                 | None    |
|              |            | Drizzle       |       |   |              |  |           |      |   |                       |  | Abandoned site?                   | N       |
|              |            |               |       |   |              |  |           |      |   |                       |  | Y or N (if Y explain in comments) |         |

|      |               |     |       |               |   |                |                 |   |                  |  |
|------|---------------|-----|-------|---------------|---|----------------|-----------------|---|------------------|--|
| Wind | Speed (kts)   | 9.7 | Swell | Period (s)    | 0 | Nav Type       | DGPS            | X | Station Comments |  |
|      | Direction (4) | W   |       | Height (ft)   | 0 |                | GPS             |   |                  |  |
|      |               |     |       | Direction (4) | 0 | Equipment Type | Van Veen        |   |                  |  |
|      |               |     |       |               |   |                | Tandem Van Veen | X |                  |  |

## GRAB EVENTS

| #                                            | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------------------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1640                                         | 32.64749     | -17.1972               | 8.1                     | 43        | None                   | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         |              | 0379-0381 |
| Grab Event Comments: Lots of Muscalista mats |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1711                                         | 32.64749     | -17.1967               | 8.0                     | 46        | None                   | None               | 16               | Silt            | None     | Olive     | N                |         |          | X          | X       | N            | 0382-0386 |
| Grab Event Comments: Lots of Muscalista mats |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1728                                         | 32.64752     | -17.1945               | 8.4                     | 60        | None                   | None               | 16               | Silt            | None     | Olive     | N                |         |          | X          | X       | N            | 0387-0391 |
| Grab Event Comments:                         |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                         |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                         |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                         |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

8/28/13

Time:

1625

Station ID:

B13-8033

Water Depth:

*J. L. M.*

Tide:

~~VALUATION REPORT~~

Weather:

Clear

Odor:

No

Floating Material?  
(Yes / No)

No

Photo Number:

**A** **END OF THE LINE**

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear / Light Green

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

✓  
les

COMMENTS:

\_\_\_\_\_

\*\*\*\*\*

[illegible]

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8033

Arrival Date/Time: 8/28/13 1608

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/28/13 1815

Print Name/Company: \_\_\_\_\_

John Rodolph AMEC

# STATION OCCUPATION

BIGH 1'13

Agency Code 24mp Station ID 213-8109 Salinity (ppt)           

Vessel Name Elly Bird Date 8/28/13 At estuary Sites only           

Arrival Time 0705 (hh:mm) Station Fail Code None Abandoned site? N

Y or N (if Y explain in comments)

Weather Clear Sea State Calm

Overcast            Choppier           

Partly cloudy            Rough           

Drizzle           

Rain            Thunderstorm            Fog           

Wind            Swell           

Speed (kts) 1 Period (s) 0

Direction (4) West Height (ft) 0

Direction (4) 0

## Station Comments

Nav Type            DGPS            GPS           

Equipment Type           

Van Veen            Tandem Van Veen X

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 0743                 | 32.71496     | -117.18291             | 12.1                    | 10        | None                   | 16                 | Sand             | None            | None     | Olive     | N                | X       | X        | X          |         | N            | 346-348 |
| 0802                 | 32.71496     | -117.18291             | 12.0                    | 10        | None                   | 16                 | Sand             | None            | None     | Olive     | N                |         |          |            | X       | N            | 349-350 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/28/13

Time: 0715

Station ID: B13-8109

Water Depth: 12m

Tide: -

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8109

Arrival Date/Time: 8/28/13 0700 *red/late*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

-FIDs

8/09

# FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| species, use aliquot method of enumeration)?                                                                                                                  |   |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y |
| Total biomass of each species group recorded?                                                                                                                 | Y |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y |
| Any anomalies recorded?                                                                                                                                       | Y |
| Photo of one representative from each species collected?                                                                                                      | Y |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | Y |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y |

- Spotted  
Perch

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: [Signature] Date/Time: 9/3/13 1830

Print Name/Company: John Rudolph AMEC

# BIGH'13

Station ID BB-8118

Date 8/28/13

Station Fail Code None

### Station Comments

|    |  |   |
|----|--|---|
| pe |  | X |
|----|--|---|

Sample types (Chk all that apply)

[illegible]

- |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2 | Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3 | Sediment Color: Brown, Gray, Black, Olive green, Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4 | Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5 | Station Fall codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not samplable - other (comment req.) |
|   | Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Lumping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only                                                                                                                                                                                                |

## CTD Field Data Sheet

Date:

8/28/13

Time:

1020

Station ID:

B13-5118

Water Depth:

11.2m

Tide:

[illegible]

Weather:

Clear

Odor:

No

Floating Material?  
(Yes / No)

No

Photo Number:

**Abstract**

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

[illegible]



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8/18

Arrival Date/Time: 8/28/13 1005 sed/water  
9/3/13 1052 trawl

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1 cm from sides of grab?                                      | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FIDs

8/15

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| species, use aliquot method of enumeration)?                                                                                                                  | Y |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y |
| Total biomass of each species group recorded?                                                                                                                 | Y |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y |
| Any anomalies recorded?                                                                                                                                       | Y |
| Photo of one representative from each species collected?                                                                                                      | Y |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | — |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | ✓ |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | — |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/3/13 1830

Print Name/Company: John Rudolph

## STATION OCCUPATION

BIGHT'13

|              |                        |               |                                           |                                       |           |                                          |                       |                   |                                          |
|--------------|------------------------|---------------|-------------------------------------------|---------------------------------------|-----------|------------------------------------------|-----------------------|-------------------|------------------------------------------|
| Agency Code  | <u>LHMP</u>            | Weather       | <input checked="" type="checkbox"/> Clear | <input type="checkbox"/> Rain         | Sea State | <input checked="" type="checkbox"/> Calm | Salinity (ppt)        | Station ID        | <u>B13-8122</u>                          |
| Vessel Name  | <u>Early Bird</u>      | Overcast      | <input type="checkbox"/>                  | <input type="checkbox"/> Thunderstorm | Choppy    | <input type="checkbox"/>                 | At estuary Sites only | Date              | <u>8/28/13</u>                           |
| Arrival Time | <u>1310</u><br>(hh:mm) | Partly cloudy | <input type="checkbox"/>                  | <input type="checkbox"/> Fog          | Rough     | <input type="checkbox"/>                 |                       | Abandoned site?   | <input checked="" type="checkbox"/> None |
|              |                        | Drizzle       | <input type="checkbox"/>                  |                                       |           |                                          |                       | Station Fail Code | <u>None</u>                              |

|      |               |            |       |               |          |                |                                                     |                  |
|------|---------------|------------|-------|---------------|----------|----------------|-----------------------------------------------------|------------------|
| Wind | Speed (kts)   | <u>6.0</u> | Swell | Period (s)    | <u>0</u> | Nav Type       | <input checked="" type="checkbox"/> DGPS            | Station Comments |
|      | Direction (4) | <u>W</u>   |       | Height (ft)   | <u>0</u> |                | <input type="checkbox"/> GPS                        |                  |
|      |               |            |       | Direction (4) | <u>0</u> | Equipment Type | <input checked="" type="checkbox"/> Van Veen        |                  |
|      |               |            |       |               |          |                | <input checked="" type="checkbox"/> Tandem Van Veen |                  |

## GRAB EVENTS

| #                    | Time<br>(hh:mm) | Latitude<br>(DD°MM'N) | Longitude<br>(DD°MM'W) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(V/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos    |
|----------------------|-----------------|-----------------------|------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-----------|
|                      | 1348            | 32.72415              | -117.18298             | 5.1          | 17                           | None                     | 14                  | Sand               | None        | Grey         | N                      | X       | X           | X             |            | N               | 0366-0369 |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
|                      | 1401            | 32.72419              | -117.18295             | 5.0          | 13                           | None                     | 12                  | Sand               | None        | Grey         | N                      |         |             |               | X          | N               | 0370-0371 |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments: |                 |                       |                        |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/28/13

Time:

1325

Station ID:

B13-8122

Water Depth:

5.2m

Tide:

—

Weather:

Clear

Odor:

No

Floating Material?  
(Yes / No)

No

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8/22

Arrival Date/Time: 8/28/13 1310 *sed/water*  
9/3/13 0839 *trawl*

Site Acceptable for Sampling: Water Y or N

Sediment Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                           | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                       | <u>Y</u> |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | <u>Y</u> |
| Station occupation form completed?                                                                                                            | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |     |
|----------------------------------------------------------------------------------------------|-----|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y   |
| Weighing scales calibrated?                                                                  | Y   |
| Vessel passed through 100 m radius of station?                                               | Y   |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y   |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y   |
| Trawl remained within 10% of target depth?                                                   | #/N |
| PT sensor downloaded successfully?                                                           | Y   |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y   |
| Fish and/or invertebrates obtained in trawl?                                                 | Y   |
| Trawl debris captured and processed?                                                         | Y   |
| All fish positively identified (make note of any FIDs)?                                      | Y   |
| All invertebrates positively identified (make note of any FIDs)?                             | N   |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y   |

- 7m to 12m

- FIDs

8/22

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | Y  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | N  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | NA |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

- Halibut  
- Barred  
Sand  
Bass

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | Y  |
| DNA samples preserved with 95% ethanol?                                  | Y  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y  |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/3/13 1830

Print Name/Company: \_\_\_\_\_

John Rudolph Amec



\* Extra bottles for PAH, OTC QA MS/MSD

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RAMP

Page 1 of 1

DATE: 8/29/13

COMPLETED BY: JR

[illegible]

## STATION OCCUPATION

BIGHT'13

|              |                   |               |                          |                                     |                          |                          |                          |                                   |                                     |                   |
|--------------|-------------------|---------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-----------------------------------|-------------------------------------|-------------------|
| Agency Code  | <u>TKMP</u>       | Weather       | Clear                    | <input checked="" type="checkbox"/> | Rain                     | <input type="checkbox"/> | Salinity (ppt)           | <u>13-8093</u>                    | Station ID                          | <u>13-8093</u>    |
| Vessel Name  | <u>Early Bird</u> | Overcast      | <input type="checkbox"/> | Thunderstorm                        | <input type="checkbox"/> | Fog                      | <input type="checkbox"/> | Date                              | <u>8/28/13</u>                      |                   |
| Arrival Time | <u>0647</u>       | Partly cloudy | <input type="checkbox"/> |                                     | <input type="checkbox"/> |                          | <input type="checkbox"/> | Abandoned site?                   | <input checked="" type="checkbox"/> | Station Fail Code |
|              |                   | Drizzle       | <input type="checkbox"/> |                                     | <input type="checkbox"/> |                          |                          | Y or N (if Y explain in comments) | <u>None</u>                         |                   |

|      |               |            |       |               |          |                |                 |                                     |                  |
|------|---------------|------------|-------|---------------|----------|----------------|-----------------|-------------------------------------|------------------|
| Wind | Speed (kts)   | <u>9.1</u> | Swell | Period (s)    | <u>0</u> | Nav Type       | DGPS            | <input checked="" type="checkbox"/> | Station Comments |
|      | Direction (4) | <u>NW</u>  |       | Height (ft)   | <u>0</u> |                | GPS             | <input type="checkbox"/>            |                  |
|      |               |            |       | Direction (4) | <u>0</u> | Equipment Type | Van Veen        | <input type="checkbox"/>            |                  |
|      |               |            |       |               |          |                | Tandem Van Veen | <input checked="" type="checkbox"/> |                  |

## GRAB EVENTS

| #                                                                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------------------------------------------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 0734                                                                 | 32-69560     | -17.16256              | 14                      | 41        | None                   | 15                 | Sand             | None            | None     | Grey      | N                | X       | X        | X          |         | N            | 0392-0393 |
| Grab Event Comments:                                                 |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 0746                                                                 | 32-69559     | -17.16266              | 14                      | 32        | None                   | 15                 | Sand             | None            | None     | Grey      | N                |         |          |            | X       | N            | 0394-0396 |
| Grab Event Comments: Only used one side of TVV, one side washed out. |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 0753                                                                 | 32-69561     | -17.16266              | 14                      | 32        | None                   | 16                 | Sand             | None            | None     | Grey      | N                |         |          |            | X       | N            | 0397-0399 |
| Grab Event Comments:                                                 |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                 |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                 |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                 |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/29/13

Time: 0700

Station ID: B13-8093

Water Depth: 14.1

Tide: —

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B/B-8093

Arrival Date/Time: 8/29/13 0647

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

\* extra volume for MS/MSD QA

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1800

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

|              |                   |               |                          |                                     |                          |                          |                       |                                   |                |                   |             |
|--------------|-------------------|---------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-----------------------|-----------------------------------|----------------|-------------------|-------------|
| Agency Code  | <u>RLAMP</u>      | Weather       | Clear                    | <input checked="" type="checkbox"/> | Rain                     | <input type="checkbox"/> | Salinity (ppt)        | <u>13-8100</u>                    | Station ID     | <u>B13-8100</u>   |             |
| Vessel Name  | <u>Early Bird</u> | Overcast      | <input type="checkbox"/> | Thunderstorm                        | <input type="checkbox"/> | Fog                      | At estuary Sites only | Date                              | <u>8/29/13</u> |                   |             |
| Arrival Time | <u>0808</u>       | Partly cloudy | <input type="checkbox"/> | Drizzle                             | <input type="checkbox"/> |                          |                       | Abandoned site?                   | <u>N</u>       | Station Fail Code | <u>NONE</u> |
|              | (hh:mm)           |               |                          |                                     |                          |                          |                       | Y or N (if Y explain in comments) |                |                   |             |

|      |               |           |       |               |          |                |          |                                     |                 |                          |                  |  |
|------|---------------|-----------|-------|---------------|----------|----------------|----------|-------------------------------------|-----------------|--------------------------|------------------|--|
| Wind | Speed (kts)   | <u>2</u>  | Swell | Period (s)    | <u>0</u> | Nav Type       | DGPS     | <input checked="" type="checkbox"/> | GPS             | <input type="checkbox"/> | Station Comments |  |
|      | Direction (4) | <u>NW</u> |       | Height (ft)   | <u>0</u> |                |          |                                     |                 |                          |                  |  |
|      |               |           |       | Direction (4) | <u>0</u> | Equipment Type | Van Veen | <input checked="" type="checkbox"/> | Tandem Van Veen | <input type="checkbox"/> |                  |  |

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
|                      | 0844         | 32.70240               | -117.16178              | 9.1       | X 23                   | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | X            | 0400-0402 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|                      | 0857         | 32.70257               | -117.16174              | 9.0       | 38                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | X            | 0403-0405 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**CTD Field Data Sheet**

Date: 8/29/13

Time: 0825

Station ID: B13-8100

Water Depth: 9.1m

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material? None  
(Yes / No)

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? Yes  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No) 11

(Yes / No) Yes

Samples Collected? Yes

(Yes / No)

COMMENTS: \_\_\_\_\_

\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8100

Arrival Date/Time: 8/29/13 0808

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGHT'13

|             |            |                         |                                                                                                                                                              |                                                                                                        |           |                                                                                                               |                |                                                              |            |          |
|-------------|------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------|------------|----------|
| Agency Code | RHMP       | Weather                 | <input checked="" type="checkbox"/> Clear<br><input type="checkbox"/> Overcast<br><input type="checkbox"/> Partly cloudy<br><input type="checkbox"/> Drizzle | <input type="checkbox"/> Rain<br><input type="checkbox"/> Thunderstorm<br><input type="checkbox"/> Fog | Sea State | <input checked="" type="checkbox"/> Calm<br><input type="checkbox"/> Choppy<br><input type="checkbox"/> Rough | Salinity (ppt) | <input type="text"/><br><small>At estuary Sites only</small> | Station ID | B13-8099 |
| Vessel Name | Early Bird | Arrival Time<br>(hh:mm) | 0920                                                                                                                                                         | Abandoned site?<br>Y or N (If Y explain in comments)                                                   |           | Station Fail Code                                                                                             | None           | Date                                                         | 8/29/13    |          |

| Wind                                              | Swell | Period (s) | Height (ft) | Direction (4) | Nav Type                                                                                                   | Station Comments |
|---------------------------------------------------|-------|------------|-------------|---------------|------------------------------------------------------------------------------------------------------------|------------------|
| Speed (kts) <u>3.1</u><br>Direction (4) <u>NW</u> |       | <u>0</u>   | <u>0</u>    | <u>0</u>      | DGPS <input checked="" type="checkbox"/><br>GPS <input type="checkbox"/>                                   |                  |
|                                                   |       |            |             |               | Equipment Type<br>Van Veen <input type="checkbox"/><br>Tandem Van Veen <input checked="" type="checkbox"/> |                  |

Sample types (Chk all that apply)

[illegible]

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/29/13

Time: 0930

Station ID: B13-8099

Water Depth: 9.9

Tide: \_\_\_\_\_

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

(Yes / No) ✓

Samples Collected? 125

(Yes / No)

COMMENTS: \_\_\_\_\_

---

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8099

Arrival Date/Time: 8/29/13 0920

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1 cm from sides of grab?                                      | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

Agency Code RHMP  
Vessel Name Early Bird  
Arrival Time 1035  
(hh:mm)

Weather  
Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐

Rain ☐  
Thunderstorm ☐  
Fog ☐

Sea State  
Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)   
At estuary Sites only

Date 8/29/13

Station ID 313-8098  
Station Fail Code None  
Abandoned site? ☐  
Y or N (if Y explain in comments)

## Wind

Speed (kts) 5.8  
Direction (4) NW

## Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

| #                                                                                 | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmm) | Longitude<br>(DD°MM.mmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos    |
|-----------------------------------------------------------------------------------|-----------------|-------------------------|--------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-----------|
| 1106                                                                              | 32.69977        | -117.16098              | 14.5                     | 4            | None                         | 16                       | Sand                | None               | None        | light        | N                      | X       | X           | X             |            | N               | 0413-0414 |
| Grab Event Comments:                                                              |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 1120                                                                              | 32.69983        | -117.16085              | 14.4                     | 14           | None                         | 14                       | Sand                | None               | None        | light        | N                      |         |             | X             |            | N               | 0416-0418 |
| Grab Event Comments: Only one of TVU grabbed, used for tox                        |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 1130                                                                              | 32.69994        | -117.16110              | 14.5                     | 18           | None                         | 14                       | Sand                | None               | None        | light        | N                      |         |             | X             |            | N               | 0419-0420 |
| Grab Event Comments: One TVU partially washed, used other for tox additional Sed. |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                                                              |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                                                              |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                                                              |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                                                              |                 |                         |                          |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/29/13

Time: 1045

Station ID: B13-8098

Water Depth: 14.3m

Tide: \_\_\_\_\_

Weather: Clear

Odor: No

Floating Material? No  
(Yes / No)

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8098

Arrival Date/Time: 8/29/13 1030

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1 cm from sides of grab?                                      | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGHT'13

| Wind                | Swell              | Nav Type                                            | Station Comments |
|---------------------|--------------------|-----------------------------------------------------|------------------|
| Speed (kts)<br>11.2 | Period (s)<br>0    | DGPS <input checked="" type="checkbox"/>            |                  |
| Direction (4)<br>NW | Height (ft)<br>0   | GPS <input type="checkbox"/>                        |                  |
|                     | Direction (4)<br>0 |                                                     |                  |
|                     |                    | Equipment Type                                      |                  |
|                     |                    | Van Veen <input type="checkbox"/>                   |                  |
|                     |                    | Tandem Van Veen <input checked="" type="checkbox"/> |                  |

[illegible]

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Color: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Odor: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Shab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Turbured Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: ~~B/D 5096~~ 8/29/13

Time: 1215

Station ID: B13-5096

Water Depth: 14.3m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material? No  
(Yes / No)

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

FIELD SAMPLING QA CHECKLIST

Station ID: B3-8096

Arrival Date/Time: 8/29/13 1158

Site Acceptable for Sampling: Water Y or N

Sediment Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1800

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# BIGHT'13

|                                          |                                                              |                                                                                          |                         |
|------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------|
| <b>Wind</b>                              | <b>Swell</b>                                                 | <b>Nav Type</b>                                                                          | <b>Station Comments</b> |
| Speed (kts) _____<br>Direction (4) _____ | Period (s) _____<br>Height (ft) _____<br>Direction (4) _____ | DGPS <input checked="" type="checkbox"/><br>GPS <input type="checkbox"/>                 |                         |
|                                          |                                                              |                                                                                          |                         |
|                                          |                                                              | <b>Equipment Type</b>                                                                    |                         |
|                                          |                                                              | Van Veen <input type="checkbox"/><br>Tandem Van Veen <input checked="" type="checkbox"/> |                         |

## Sample types (Chk all that apply)

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/29/13

Time: 1405

Station ID: BIB-8095

Water Depth: 13.3m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

© 2006 The Authors  
Journal compilation © 2006 Blackwell Publishing Ltd



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-80N

Arrival Date/Time: 8/29/13 1349

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

Agency Code TLHMP Weather Clear Sea State Calm Salinity (ppt) 30-8087 Station ID 30-8087

Vessel Name Early Bird Overcast X Thunderstorm    Chippy    Date 8/29/13

Arrival Time 1449 Drizzle    Fog    Abandoned site?    Station Fail Code None

(hh:mm)

Y or N (if Y explain in comments)

Wind Speed (kts) 6.2 Period (s) 0 Station Comments   

Direction (4) 11W Height (ft) 0

Direction (4) 0

Nav Type DGPS X GPS   

Equipment Type Van Veen    Tandem Van Veen X

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 1516         | 32.69172               | -17.15322               | 13.1      | 22                     | None               | 12               | Sand            | None     | light     | N                | X       | X        | X          |         | N            | 437-439   |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 2                    | 1527         | 32.69169               | -17.15309               | 13.0      | 16                     | None               | 11               | Sand            | None     | light     | N                |         |          |            | X       | Y            | 0440-0441 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/29/13

Time: 1505

Station ID: B13-8087

Water Depth: 13.2 m

Tide: \_\_\_\_\_

Weather: Overcast

Odor: None

Floating Material? No  
(Yes / No)

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Clear

CTD Data Archived? Yes  
(Yes / No)

(Yes / No) Yes

Samples Collected?  
(Yes / No)

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-80807

Arrival Date/Time: 8/29/13 1449

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem, samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1500

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

Agency Code RHMP  
Vessel Name Early Bird  
Arrival Time 1609  
(hh:mm)

Weather  
Clear ☐  
Overcast ☐  
Partly cloudy ☒  
Drizzle ☐

Rain ☐  
Thunderstorm ☐  
Fog ☐

Sea State  
Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)  
At estuary Sites only

Station ID RB-8073

Date 8/29/13

Station Fail Code None

Abandoned site?

Y or N (if Y explain in comments)

## Wind

Speed (kts) 5.8  
Direction (4) N

## Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

| #                    | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmmmm) | Longitude<br>(DD°MM.mmmmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos      |
|----------------------|-----------------|---------------------------|----------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-------------|
|                      |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| 1638                 | 32.68051        | -17.17472                 | 5.4                        | 26           | None                         | 16                       | None                | Sand               | None        | Grey         | N                      | X       | X           | X             |            | N               | 442-<br>445 |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| 1648                 | 32.68033        | -17.17489                 | 5.4                        | 22           | None                         | 16                       | None                | Sand               | None        | Grey         | N                      |         |             |               | X          | N               | 449-<br>453 |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
| Grab Event Comments: |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date: 8/29/13

Time: 1620

Station ID: B43-8073

Water Depth: 5.4 m

Tide: \_\_\_\_\_

Weather: Partly Cloudy

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: \_\_\_\_\_

Visible Turbidity Plume? No  
(Yes / No)

Water Color: Light Green

CTD Data Archived? *Yes*

CTD Data Archived? Yes  
(Yes / No)

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

1000

\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: R13-8073

Arrival Date/Time: 8/29/13 1400

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 8/29/13 1000

Print Name/Company: \_\_\_\_\_

John Rudolph ANEC

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RMP

Page 1 of 1

DATE: 8/30/13

COMPLETED BY: Tyler Huff

[illegible]

Vine

AGENCY: RHMP

Page 1 of 1

DATE: 8/30/13

COMPLETED BY: Tyler Huff

7

7

[illegible]

WZue1  
count

## STATION OCCUPATION

Agency Code RHMPVessel Name Early Bird IIArrival Time 0752  
(hh:mm)

## Weather

Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐

## Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

At estuary Sites only

Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code

## Wind

Speed (kts) 0  
Direction (4) 0

## Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

## Nav Type

DGPS ☒  
GPS ☐

## Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## Station Comments

## GRAB EVENTS

Target: 32.67552  
-117.14389

| # | Time<br>(hh:mm)      | Latitude<br>(DD°MM.mmmmm) | Longitude<br>(DD°MM.mmmmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos      |
|---|----------------------|---------------------------|----------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-------------|
| 1 | 0811                 | 32.67547                  | -117.14384                 | 5.1          | 17                           | NONE                     | 13                  | f.g.s.             | NONE        | Dark<br>lt.  | N                      | X       | X           | X             |            | N               | 458-<br>459 |
| 2 | 0823                 | 32.67535                  | -117.14381                 | 5.1          | 18                           | NONE                     | 13                  | f.g.s.             | NONE        | lt. brn      | N                      |         |             |               | X          | N               | 460<br>462  |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |
|   | Grab Event Comments: |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |             |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/30/13

Time: 0755

Station ID: B13-8068

Water Depth: 5.1 m

Tide: —

Weather: clear

Odor: none

Floating Material?  
(Yes / No) NO

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) NO

Water Color: clear

CTD Data Archived?  
(Yes / No) yes

Samples Collected?  
(Yes / No) yes

COMMENTS: —

### FIELD SAMPLING QA CHECKLIST

Station ID: B13 - 8068

Arrival Date/Time: 0750 8/30/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

#### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

#### 2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

#### 3. Water Sampling Procedures:

|                                                                                         |          |
|-----------------------------------------------------------------------------------------|----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u> |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u> |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u> |
| Sampling instrument washed with Alconox?                                                | <u>Y</u> |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u> |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u> |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u> |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u> |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u> |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u> |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u> |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u> |
| Equipment or field blank collected (if applicable)?                                     | <u>Y</u> |

B13-8068

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | y  |
| Equipment washed/rinsed from previous station?                                                             | y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | y  |
| Sampling instrument washed with Alconox?                                                                   | y  |
| Sampling instrument given site water rinse prior to deployment?                                            | y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | y  |
| Sample bottles are lab certified, contaminant free?                                                        | y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | y  |
| Grab disposition / characteristic information recorded?                                                    | y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | y  |
| Sediment evenly distributed among containers?                                                              | y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | y  |
| Staff avoided contaminating samples at all times?                                                          | y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | y |
| Proper persons have signed and dated all COCs?                                                                                               | y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | y |
| Toxicity samples stored cold on wet ice?                                 | y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | y |
| Cooler is taped shut for transport to lab?                               | y |
| Completed COC is included in plastic bag in cooler?                      | y |

handed to courier

Additional Notes:

Signature of QA/QC Personnel:

Date/Time:

8/30/13 0835

Print Name/Company:

Tyler Hart



## STATION OCCUPATION

Agency Code RKMPVessel Name Early 4/16Arrival Time 1206  
(hh:mm)

## Weather

Clear ☒ Overcast ☐ Partly cloudy ☐ Drizzle ☐

Rain ☐ Thunderstorm ☐ Fog ☐

## Sea State

Calm ☒ Choppy ☐ Rough ☐

Salinity (ppt)

32.64759  
At estuary Sites only

Station ID

817-8031

Date

8/30/13

Abandoned site?

☐ Y or N (if Y explain in comments)

Station Fail Code

NONE

## Wind

Speed (Kts)

4

Period (s)

0

Height (ft)

0

Direction (4)

W

## Swell

Period (s)

0

Height (ft)

0

Direction (4)

0

## Nav Type

DGPS ☒ GPS ☐

## Equipment Type

Van Veen ☐ Tandem Van Veen ☒

## Station Comments

Dense clay / picked olive green below the 1cm silt layer dense. Needs to be added to spreadsheet for B13-8031-1.  
B13-8031-3, under silt 1-2m below clay.

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)  | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|------------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 1203         | 32.64758               | -117.12148              | 10.8      | 46                     | NONE               | 10               | egg silt        | NONE     | dark green | N                | X       | X        | X          |         | N            | 0474-0475 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| 2                    | 1243         | 32.64768               | -117.12154              | 12.9      | 56                     | NONE               | 11               | egg silt        | NONE     | dark green | N                | X       | X        | X          |         | N            | 0476-0478 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| 3                    | 1252         | 32.64758               | -117.12159              | 12.9      | 57                     | NONE               | 8                | silt w          | NONE     | dark green | N                | X       | X        | X          |         | N            | 0479-0480 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |            |                  |         |          |            |         |              |           |

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/30/13

Time:

1200

Station ID:

B13-8031

Water Depth:

12.8m

Tide:

—

Weather:

Clear

Odor:

—

Floating Material?  
(Yes / No)

~~Y~~ N

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Y

Samples Collected?  
(Yes / No)

Y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8031

Arrival Date/Time: 1200 8/30/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

FIELD SAMPLING QA CHECKLIST

B-3-8031

4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes:

Signature of QA/QC Personnel:

Date/Time:

12 45 8/30/13

Print Name/Company:

Tyler Hunt, AMCC

## STATION OCCUPATION

Agency Code RMHupVessel Name Early BirdArrival Time 0900  
(hh:mm)

## Weather

Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐Rain ☐  
Thunderstorm ☐  
Fog ☐

## Sea State

Calm ☒  
Choppy ☐  
Rough ☐

Salinity (ppt)

At estuary Sites only

Abandoned site?

Y or N (if Y explain in comments)

## Wind

Speed (Kts)

Direction (4)

## Swell

Period (s)

Height (ft)

Direction (4)

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1)      | Odor (2) | Color (3)   | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|----------------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 0936         | 32.69288               | -117.14754              | 7.7       | 71                     | NONE               | 16               | silt/clay w/ f.g.-s. |          | olive green | N                | X       | X        | X          |         | N            | 463-465 |
| 2                    | 0950         | 32.69279               | -117.14754              | 7.7       | 84                     | NONE               | 26               | silt/clay w/ f.g.-s. |          | NONE        | N                |         |          |            | X       | N            | 466-467 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                      |          |             |                  |         |          |            |         |              |         |

Sample types (chk all that apply)

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/30/13

Time:

0905

Station ID:

B13-8090

Water Depth:

7.7 m.

Tide:

—

Weather:

clear

Odor:

—

Floating Material?  
(Yes / No)

N

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

clear

CTD Data Archived?  
(Yes / No)

y

Samples Collected?  
(Yes / No)

y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8090 Arrival Date/Time: 8/30/13 0920

Site Acceptable for Sampling: Water: Y or N Sediment: Y or N  
If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded: *Barges/cranes*

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

## 2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

## 3. Water Sampling Procedures:

|                                                                                         |             |
|-----------------------------------------------------------------------------------------|-------------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>    |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>    |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>    |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>    |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>    |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>    |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>    |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>    |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>    |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>    |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>    |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>    |
| Equipment or field blank collected (if applicable)?                                     | <u>Y NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 8/30/13-1000

Print Name/Company: tyler Hud



## STATION OCCUPATION

BIGHT'13

Agency Code RMF

Salinity (ppt)

Station ID 813-804Vessel Name Party Boat

At estuary Sites only

Date 9/30/13Arrival Time 1053  
(hh:mm)

Abandoned site?

Station Fail Code ANR

Y or N (if Y explain in comments)

Wind 3.0

Speed (kts)

Swell 0

Period (s)

Direction (4)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

silt w/ sand.

## GRAB EVENTS

Sample types (Chk all that apply)

| #                    | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmm) | Longitude<br>(DD°MM.mmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1)   | Odor<br>(2) | Color<br>(3)  | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos       |
|----------------------|-----------------|-------------------------|--------------------------|--------------|------------------------------|--------------------------|---------------------|----------------------|-------------|---------------|------------------------|---------|-------------|---------------|------------|-----------------|--------------|
| 1                    | 1110            | 32.65155                | -117.12244               | 11.8         | 53                           | N/A                      | 16                  | silt/clay<br>w/ sand | None        | white<br>gray | N                      | X       | X           | X             |            | N               | 0470<br>0471 |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| 2                    | 1125            | 32.65160                | -117.12244               | 11.8         | 39                           | N/A                      | 16                  | silt/clay<br>w/ sand | None        | white<br>gray | N                      |         |             |               | X          | N               | 0472<br>0473 |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |
| Grab Event Comments: |                 |                         |                          |              |                              |                          |                     |                      |             |               |                        |         |             |               |            |                 |              |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

8/30/13

Time:

1045

Station ID:

B13 - 8045

Water Depth:

11.8 m

Tide:

-

Weather:

clear

Odor:

-

Floating Material?  
(Yes / No)

~~Y~~ N

Photo Number:

-

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

clear

CTD Data Archived?  
(Yes / No)

Y

Samples Collected?  
(Yes / No)

Y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FIELD SAMPLING QA CHECKLIST**

Station ID: B13-8045

Arrival Date/Time: 8/30/13

~~1053~~ 1053

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

FIELD SAMPLING QA CHECKLIST

B13-8045

4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NK |
| Equipment or field blank collected (if applicable)?                                                        | NA |

5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes:

Signature of QA/QC Personnel: [Signature] Date/Time: 8/30/13 1130  
Print Name/Company: 7/65 Hill ARMEC

## STATION OCCUPATION

BIGHT'13

Agency Code RAMP Station ID B13-8058

Weather Clear Salinity (ppt) —

Vessel Name Buoy Bndt # Date 8/30/13

Arrival Time 0710 (hh:mm) Station Fail Code NONE

Sea State ✓ Calm ✓ Choppy ✓ Rough ✓

Abandoned site? ✓ Y or N (if Y explain in comments)

Wind Speed (kts) 0 Direction (4) 0

Swell Period (s) 0 Height (ft) 0 Direction (4) 0

Nav Type ✓ DGPS ✓ GPS ✓

Equipment Type ✓ Van Veen ✓ Tandem Van Veen ✓

Station Comments

## GRAB EVENTS

| # | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|---|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1 | 0710         | 32.66147               | -117.14410              | 46        | 42                     | NONE               | 16 full          | F.g.s           | NONE     | LT. GRAY  | N                | X       | X        | X          |         | N            | 454-455 |
| 2 | 0705         | 32.66142               | -117.14411              | 46        | 37                     | NONE               | 16 full          | F.g.s           | NONE     | LT. GRAY  | N                |         |          |            | X       | N            | 456-457 |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 8/30/13

Time: 0650

Station ID: B13-8058

Water Depth: 5m

Tide: —

Weather: clear

Odor: none

NO

Floating Material?  
(Yes / No)

Photo Number: — NO

NO

Visible Turbidity Plume?  
(Yes / No)

Water Color: clear / 1

CTD Data Archived?  
(Yes / No) yes

Samples Collected?  
(Yes / No) yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: D13-8058

Arrival Date/Time: 8/30/13 0650

red water  
trawl

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |         |
|----------------------------------------------------------------------------------------------|---------|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y       |
| Weighing scales calibrated?                                                                  | Y       |
| Vessel passed through 100 m radius of station?                                               | Y       |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y       |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y       |
| Trawl remained within 10% of target depth?                                                   | Y       |
| PT sensor downloaded successfully?                                                           | Y       |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y       |
| Fish and/or invertebrates obtained in trawl?                                                 | Y       |
| Trawl debris captured and processed?                                                         | Y       |
| All fish positively identified (make note of any FIDs)?                                      | Y       |
| All invertebrates positively identified (make note of any FIDs)?                             | N - FID |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y       |



## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | NA |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | NA |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | - |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | - |
| Halibut study specimens stored immediately on ice and frozen asap?       | - |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 9/4/13 1700

Print Name/Company: John Rudolph AMEC

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 9/6/13

COMPLETED BY: Tyler H. H

[illegible]

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHmp

Page 1 of 1

DATE: 9/6/13

COMPLETED BY: Tyler Hight

[illegible]

# STATIC OCCUPATION

BI/ 1'13

Agency Code  Station ID  Salinity (ppt)

Vessel Name  Date  At estuary Sites only

Arrival Time  Station Fail Code  Abandoned site?  Y or N (if Y explain in comments)

Weather  Sea State

Overcast  Chippy

Partly cloudy  Rough

Drizzle  Fog

Wind  Period (s)  Swell

Speed (kts)  Height (ft)

Direction (4)  Direction (4)

Nav Type

GPS

Equipment Type

Tandem Van Veen

Station Comments

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1259                 | 32.65837     | -117.11977             | 5.0                     | 26        | None                   | 9                  | Sand             | None            | None     | None      | N                | X       | X        | X          | X       | N            | 2271-2277 |
| 1311                 | 32.65844     | -117.14883             | 4.9                     | 17        | None                   | 9.11               | Sand             | None            | None     | None      | N                | X       | X        | X          | X       | N            | 2278-2284 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O), describe in comments
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 9/6/13

Time: 1230

Station ID: B13-8053

Water Depth: 5.2 m

Tide: —

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: —

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

| pH        | ODO       |
|-----------|-----------|
| 25.8°C    | 25.8°C    |
| 50132 SPC | 757.4 μS  |
| 50535 EC  | 97.2% DO  |
| 34.3 Sal  | 6.59 mg/L |
| 7.97 pH   |           |

CTD

25.8°C

34.6 Salinity

pH 7.4 pH

50448 SPC

90.73% DO

6.85 mg/L DO

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-803

Arrival Date/Time: 9/6/13 1216

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/6/13 1730

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

Agency Code RAM Weather Clear Salinity (ppt) 13-80 Station ID 13-80

Vessel Name Early Bird Overcast X At estuary Sites only None Date 8/26/13

Arrival Time 09:05 Partly cloudy 10:12 Drizzle 10:12 Station Fail Code None

Sea State X Calm Choppy Rough None Abandoned site? Y Y or N (if Y explain in comments)

Wind Speed (kts) 3 Period (s) 0

Direction (°) 244 Height (ft) 0

Direction (°) 0

Swell Target 37.634

-117.107

## Station Comments

Nav Type DGPS X GPS None

Equipment Type Van Veen None Tandem Van Veen X

Station Comments By core, tide rising, actual point 20 m to SW, but is on land, meters

## GRAB EVENTS

| # | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|---|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1 | 10:14        | 32.63417             | -117.10733            | 1         | 36                     | None               | 7                | Fine sand       | ND       | lt. brn.  | N                |         | X        | X          |         | N            | 2755-2258 |
| 2 | 10:44        | 32.63413             | -117.10733            | 1         | 34                     | None               | 10               | Fgs             | N        | lt. brn.  | N                |         | X        | X          | X       | N            | 2259-2263 |
| 3 | 11:05        | 32.63440             | -117.10739            | 1         | 43                     | None               | 7                | Fgs             | N        | lt. brn   | N                | X       |          |            | X       | N            | 2264-2270 |
|   |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|   |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|   |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|   |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|   |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



9/6/13

| CTD       |          | 5025     |          | 3151     |          | PO-PHs    |           |
|-----------|----------|----------|----------|----------|----------|-----------|-----------|
|           |          | PO DO    |          | PO DO    |          | PH        |           |
|           |          | ETD      |          | PH       |          | PH        |           |
| 26.1°C    | 26.2°C   | 26.2°C   | 26.2°C   | 26.2°C   | 26.2°C   | 26.2°C    | 26.2°C    |
| 53505PC   | 758 m    | 758 m    | 758 m    | 758 m    | 758 m    | 53562-SPC | 53562-SPC |
| 6.8 pH    | 86.2% DO | 86.2% DO | 86.2% DO | 86.2% DO | 86.2% DO | 54765 EC  | 54765 EC  |
| 35.3 sal. | 5.75 m/L | 5.75 m/L | 5.75 m/L | 5.75 m/L | 5.75 m/L | 35.34 Sal | 35.34 Sal |
| 5.50 m/L  | DO       | DO       | DO       | DO       | DO       | 7.91 PH   | 7.91 PH   |
| 83.4 % DO |          |          |          |          |          |           |           |

Dep 11  
3.3 feet

CTD Field Data Sheet

Date: JR ~~8/26/13~~ 9/6/13

Time: 0930

Station ID: B13-8018

Water Depth: 1.2m

Tide: -

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FIELD SAMPLING QA CHECKLIST

Station ID: B13-8018

Arrival Date/Time: 8/26/13 9/6/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | Y        |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | N - 1.2m |
| Vessel has been anchored (or tied off)?                                                                                                              | Y        |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y        |
| Station occupation form completed?                                                                                                                   | Y        |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 7/6/13 1800

Print Name/Company: John Rodolfo AMEC

AGENCY: RHP

Page 1 of 1

DATE: 9/9/13

COMPLETED BY: Tyler Huff

[illegible]

# BIGHT'13 WATER SAMPLE TRACKING FORM

AGENCY: *RH mp*

Page 1 of 1

DATE: 9/9/13

COMPLETED BY: Tyler Huff

[illegible]

MS/MSD

# STATIC OCCUPATION

BL "13

Agency Code KHMP Station ID 813-8121

Vessel Name Early Bird II Date 9/9/13

Arrival Time (hh:mm) 1704 Station Fail Code NONE

Weather: Clear ☒ Rain ☐ Thunderstorm ☐ Fog ☐  
 Overcast ☐ Partly cloudy ☐ Drizzle ☐

Sea State: Calm ☒ Choppy ☐ Rough ☐

Salinity (ppt) — At estuary Sites only

Abandoned site? ☒ Y or N (if Y explain in comments)

Wind: Speed (kts) 5 Period (s) 0  
 Direction (4) west Height (ft) 0  
 Direction (4) 0

Nav Type: DGPS ☒ GPS ☐

Equipment Type: Van Veen ☐ Tandem Van Veen ☒

Station Comments

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (V/N) | Photos       |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|--------------|
| 1                    | 1720         | 32.72436               | -117.22481              | 3.1       | 25                     | NONE               | 16cm             | Silt/clay       | None     | olive green | N                | X       | X        | X          |         | N            | 0515<br>0516 |
| 2                    | 1731         | 32.72408               | -117.22485              | 3.1       | 17                     | NONE               | 16cm             | Silt/clay       | None     | olive green | N                |         |          |            | X       |              | 0517<br>0518 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |              |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Debris (comment req.), Live animal (comment req.), Heavily Contaminated, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

9/9/13

Time:

1700

Station ID:

B13-8121

Water Depth:

*pericarditis*

Tide:

44-38861-10A

Weather:

clear

Odor:

NONE

Floating Material?  
(Yes / No)

N

Photo Number:

**✓**

Visible Turbidity Plume?  
(Yes / No)

~~SECRET~~ N

Water Color:

dear

CTD Data Archived?  
(Yes /-No)

9

Samples Collected?  
(Yes / No)

3

COMMENTS:

Journal of Management Inquiry 23(1) 3-17  
© The Author(s) 2014  
Reprints and permissions: [sagepub.com/journalsPermissions.nav](http://sagepub.com/journalsPermissions.nav)  
DOI: 10.1177/1056492614525001

© 2006 The Authors  
Journal compilation © 2006 Blackwell Publishing Ltd

| Circumstance                             | Percentage of Respondents (%) |
|------------------------------------------|-------------------------------|
| If someone is attacking you              | 45                            |
| If someone is threatening you            | 55                            |
| If someone is using force against you    | 65                            |
| If someone is using a weapon against you | 75                            |
| If someone is using a gun against you    | 85                            |



### FIELD SAMPLING QA CHECKLIST

Station ID: B13-8121 Arrival Date/Time: 9/9/13 1709

Site Acceptable for Sampling: Water Y or N Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

#### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Print Name/Company: \_\_\_\_\_

9/12/13 1740

Tyler H. G. Amec

# STATION OCCUPATION

BI '13

Agency Code RKMP Station ID B13-8187

Weather Clear Salinity (ppt) —

Vessel Name Early bird Date 9/9/13

Arrival Time 1635 (hh:mm)

Sea State Calm At estuary Sites only

Abandoned site? N Station Fail Code None

Y or N (if Y explain in comments)

Wind Speed (kts) 3 Station Comments possible odor / sewage smell? nothing visible.

Direction (4) 045

Swell Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type DGPS

Equipment Type Van Veen

Tandem Van Veen N

## GRAB EVENTS

| # | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (N/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (N/N) | Photos |
|---|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|--------|
| 1 | 1601         | 38.75670             | -117.20270            | 4.0       | 36                     | None               | 16               | silt/clay       | none     | olive green | N                | X       | +        | X          |         | N            | 511    |
| 2 | 1618         | 38.72676             | -117.20250            | 4.0       | 49                     | None               | 16               | silt/clay       | none     | olive green | N                |         |          |            | X       | N            | 512    |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              | 0513   |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              | 0514   |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |
|   |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |        |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Debris (comment req.), Heavily Contaminated, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

9/9/13

Time:

1540

Station ID:

B13-8127

Water Depth:

4.0m

Tide:

clear

Weather:

NO

Odor:

y

Floating Material?  
(Yes / No)

N

Photo Number:

N

Visible Turbidity Plume?  
(Yes / No)

clear

Water Color:

y

CTD Data Archived?  
(Yes / No)

y

Samples Collected?  
(Yes / No)

COMMENTS:

Poop / sewage odor? No pump-out  
occursy with sight, but constant smell.  
MS/MSD site.

extra <sup>additional</sup> N.P.  
4/2x 4x1L → PAM  
3x 1L wile  
10304  
amber

# FIELD SAMPLING QA CHECKLIST

Station ID: 813-8187

Arrival Date/Time: 9/9/13 1535

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |          |
|-----------------------------------------------------------------------------------------|----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u> |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u> |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u> |
| Sampling instrument washed with Alconox?                                                | <u>Y</u> |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u> |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u> |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u> |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u> |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u> |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u> |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u> |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u> |
| Equipment or field blank collected (if applicable)?                                     | <u>Y</u> |

AMS/MSD

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified; contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 8/2/13 1625

Print Name/Company: tyler Hull ANGEC

# STATIC OCCUPATION

BI '13

Agency Code RMV Station ID 813-8128

Vessel Name Bay Bridge Date 9/9/13

Arrival Time 1908 (hh:mm)

Weather Clear Salinity (ppt) —

Partly cloudy Overcast Chilly

Drizzle Thunderstorm Rain

Fog

Abandoned site? N Station Fail Code None

Y or N (if Y explain in comments)

Wind Speed (kts) 6 Station Comments Silt w/ k.g.s

Direction (4) West

Swell Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type DGPS GPS

Equipment Type Van Veen Tandem Van Veen

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1431         | 32.72714               | -117.19804              | 5.1       | 22                     | NONE               | 16               | silt/clay       | NONE     | olive green | N                | X       | X        | X          |         | N            | 507-508 |
| 2                    | 1443         | 32.72713               | -117.19803              | 5.0       | 15m                    | NONE               | 16               | silt/clay       | NONE     | olive green | N                |         |          |            | X       | N            | 509-510 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O), describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surfaces, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

7/9/13

Time:

1415

Station ID:

B13-8128

Water Depth:

5.1

Tide:

—

Weather:

Clear

Odor:

None

Floating Material?  
(Yes / No)

N

Photo Number:

N

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

y

Samples Collected?  
(Yes / No)

y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: 613-8128

Arrival Date/Time: 7408 9/9/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

FIELD SAMPLING QA CHECKLIST

B13-8128

4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes:

Signature of QA/QC Personnel: [Signature] Date/Time: 9/9/13 1450  
Print Name/Company: Nyle H. H. AM EC

# STATIC OCCUPATION

BI '13

Agency Code RLMP Station ID B13-8184

Vessel Name Early Bird Date 9/2/13

Arrival Time 1308 (hh:mm)

Weather ☒ Clear ☐ Rain ☐ Thunderstorm ☐ Fog

☐ Overcast ☐ Chilly ☐ Rough

☐ Partly cloudy ☐ Drizzle

Salinity (ppt) —

At estuary Sites only

Abandoned site? ☒ Station Fail Code None

Y or N (if Y explain in comments)

Wind Speed (kts) 5 Period (s) 0

Direction (°) 225 Height (ft) 0

Direction (°) 0

Swell

Nav Type DGPS ☒ GPS ☐

Equipment Type Van Veen ☐ Tandem Van Veen ☒

Station Comments f.g.s. w/ silt.

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1330         | 32.72630             | -117.18664            | 4.2       | 35                     | NONE               | 16               | f.g.s.          | NONE     | lt br     | N                | X       | X        | X          |         | N            | 503-504 |
| 2                    | 1342         | 32.72619             | -117.18654            | 4.2       | 32                     | NONE               | 16               | f.g.s.          | NONE     | lt br     | N                |         |          |            | X       | N            | 505-506 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

9/9/13

1310

B13-8124

4.5

\_\_\_\_\_

clear.

N

2

+

N

cheer.

7

5

100

# FIELD SAMPLING QA CHECKLIST

Station ID: 813-8124 Arrival Date/Time: 1308 9/9/13

Site Acceptable for Sampling: Water: (Y) or N Sediment: (Y) or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

# FIELD SAMPLING QA CHECKLIST

## 4. Sediment Sampling Procedures:

B13-8124

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified; contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

## 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes:

Signature of QA/QC Personnel:

*[Signature]*

Date/Time:

9/9/13 1:340

Print Name/Company:

Tyler Hart AMEC

# STATIC OCCUPATION

BI '13

Agency Code AMT Station ID B13-8133

Weather Clear Salinity (ppt)           

Vessel Name Early Bird II Date 9/9/13

Arrival Time 1143 (hh:mm)

Sea State X Calm           

Thunderstorm            Choppo           

Fog            Rough           

Abandoned site? X Station Fail Code NONE

Y or N (if Y explain in comments)

Wind Speed (kts) 5 Period (s) 0

Direction (4) West Height (ft) 0

Direction (4) 0

Nav Type X DGPS           

GPS           

Equipment Type X Van Veen           

Tandem Van Veen           

Station Comments By coast guard station, NO chg/sift.

## GRAB EVENTS

| # | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|---|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1 | 1303         | 32.78502               | -117.18368              | 5.5m      | 32                     | NONE               | 16               | P.g.s.          | NONE     | lt brn    | N                | X       | X        | X          |         | N            | 499-500 |
| 2 | 1313         | 32.72501               | -117.18367              | 5.5m      | 34                     | NONE               | 16               | P.g.s.          | NONE     | lt brn    | N                |         |          |            | X       | N            | 501-502 |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

9/9/13

Time:

1145

Station ID:

B13-8123

Water Depth:

5.5

Tide:

—

Weather:

clear

Odor:

None

Floating Material?  
(Yes / No)

y

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

~~yes~~ N

Water Color:

clear.

CTD Data Archived?  
(Yes / No)

y

Samples Collected?  
(Yes / No)

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8123

Arrival Date/Time: 1143 9/11/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

FIELD SAMPLING QA CHECKLIST

B13 -  
8123

4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified; contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | ✓  |
| Equipment or field blank collected (if applicable)?                                                        | NK |

5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: None

Signature of QA/QC Personnel: [Signature]

Date/Time: 9/9/13 1200

Print Name/Company: Tyle Hunt, ANEC

# STATION OCCUPATION

BI '13

Agency Code NHMP Station ID B13-8500

Vessel Name Barry B. Jones Date 9/2/13

Arrival Time 1051 (hh:mm)

Weather Clear Salinity (ppt) —

Partly cloudy Overcast Chilly

Drizzle Thunderstorm Fog

Sea State Calm At estuary Sites only

Abandoned site? N Station Fail Code NONE

Y or N (if Y explain in comments)

Wind S Speed (kts) 0 Period (s) 0

Direction (4) W Height (ft) 0

Direction (4) 0

Nav Type DGPS Station Comments In fresh water out pit/ anchorage. #b.w. F.g.s @ surface darker, clay - esp. below 2 cm.

Equipment Type Van Veen

Tandem Van Veen

## GRAB EVENTS

Targets 32.7272  
-117.177

| # | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|---|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1 | 1104         | 32.72705               | -117.17755              | 35        | 16                     | NONE               | 16               | F.g.s.          | NONE     | U.b.w.    | N                | X       | X        | X          |         | N            | 495-496 |
| 2 | 1114         | 32.72717               | -117.17755.6            | 51        | 16                     | NONE               | 16               | F.g.s.          | NONE     | U.b.w.    | N                | X       | X        | X          |         | Y            | 497-498 |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
|   |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

9/9/13

Time:

1045

Station ID:

B13-8500

Water Depth:

5.5m

Tide:

—

Weather:

clear

Odor:

wave

Floating Material?  
(Yes / No)

N

Photo Number:

N

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

clear

CTD Data Archived?  
(Yes / No)

y

Samples Collected?  
(Yes / No)

y

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8500

Arrival Date/Time: 9/9/13 10/0

Site Acceptable for Sampling: Water (Y) or N

Sediment: (Y) or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment? | <u>Y</u> |
|-----------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

1313-8500

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified; contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Cooler is taped shut for transport to lab?                               | YY |
| Completed COC is included in plastic bag in cooler?                      |    |

Additional Notes:

Anchorage

Signature of QA/QC Personnel:

*[Signature]*  
Tyler H.

Date/Time:

2/2/13 1130

Print Name/Company:

*[Signature]*  
Amec

# STATION OCCUPATION

BI '13

Agency Code RUMF Station ID B3-8112

Vessel Name Early Bird Date 9/2/13

Arrival Time 0940 (hh:mm)

Weather: Clear ☒ Rain ☐ Thunderstorm ☐ Fog ☐  
 Overcast ☐ Partly cloudy ☐ Drizzle ☐

Sea State: Calm ☒ Chippy ☐ Rough ☐

Salinity (ppt) —

At estuary Sites only

Abandoned site? ☒ Station Fail Code NONE

Y or N (if Y explain in comments)

Wind: Speed (kts) 0 Direction (4) 0

Swell: Period (s) 0 Height (ft) 0 Direction (4) 0

Nav Type: DGPS ☒ GPS ☐

Equipment Type: Van Veen ☒ Tandem Van Veen ☐

Station Comments: Zoo-bogton heavy in grab. Not considered debris (trash) for this study.

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 0958         | 32.71619               | -117.17624              | 13        | 24                     | NONE               | 16               | Silt/clay       | NONE     | olive green | N                | X       | X        | X          |         | N            | 0489 0491 |
| 2                    | 1010         | 32.7162                | -117.176                | 13        | 24                     | NONE               | 16               | Silt/clay       | NONE     | olive green | N                |         |          |            | X       | N            | 0492 0494 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Temporary - Too Shallow (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

9/9/13

Time:

0940 ~~0951~~ CTD Cgt

Station ID:

B13-8112

Water Depth:

13 m

Tide:

—

Weather:

Clear.

Odor:

None

Floating Material?  
(Yes / No)

N

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

N

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Y

Samples Collected?  
(Yes / No)

Y.

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



FIELD SAMPLING QA CHECKLIST

9/9/13  
0940

Station ID: B13 - 8112

Arrival Date/Time: \_\_\_\_\_

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | y  |
| Equipment washed/rinsed from previous station?                                                             | y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | y  |
| Sampling instrument washed with Alconox?                                                                   | y  |
| Sampling instrument given site water rinse prior to deployment?                                            | y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | y  |
| Sample bottles are lab certified, contaminant free?                                                        | y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | y  |
| Grab disposition / characteristic information recorded?                                                    | y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | y  |
| Sediment evenly distributed among containers?                                                              | y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | y  |
| Staff avoided contaminating samples at all times?                                                          | y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | y |
| Proper persons have signed and dated all COCs?                                                                                               | y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | y |
| Toxicity samples stored cold on wet ice?                                 | y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | y |
| Cooler is taped shut for transport to lab?                               | y |
| Completed COC is included in plastic bag in cooler?                      | y |

Additional Notes: Boat got heavy in both grabs.

Signature of QA/QC Personnel: [Signature] Date/Time: 10:30 - 9/9/13

Print Name/Company: Tyler [Signature]

# STATIC OCCUPATION

BI '13

Agency Code ANAP Station ID B13-8111 Salinity (ppt) —  
 Vessel Name Early Bird Date 9/9/13 At estuary Sites only  
 Arrival Time 0830 (hh:mm) Station Fail Code None Abandoned site? N  
 Y or N (if Y explain in comments)

Weather: Clear ☐ Rain ☐ Thunderstorm ☐ Fog ☐  
 Overcast ☐ Partly cloudy ☐ Drizzle ☐  
 Sea State: Calm ☒ Chippy ☐ Rough ☐

Wind: 0 Swell: 0  
 Speed (kts) 0 Period (s) 0  
 Direction (4) 0 Height (ft) 0  
 Direction (4) 0

Nav Type: DGPS ☒ GPS ☐  
 Equipment Type: Van Veen ☐ Tandem Van Veen ☒

Station Comments: adjacent to boundary p.t.

## GRAB EVENTS

Target: 32.716 = 117.174

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3)   | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-------------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1                    | 0853         | 32.71609             | -117.17345            | 12        | 11                     | NONE               | 16               | silt/clay       | NONE     | olive green | N                | X       | +        | +          |         | N            | 0485 0482 |
| 2                    | 0903         | 32.71607             | -117.17343            | 12        | 20                     | NONE               | 16               | silt/clay       | NONE     | olive green | N                |         |          |            | X       | Y            | 0487 0488 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |             |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Temporary - Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Station Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

$a \mid a \mid 13$

0830

B13-8111

11m

| Year | Actual (%) | Projected (%) |
|------|------------|---------------|
| 1950 | 7.5        | -             |
| 1960 | 8.5        | -             |
| 1970 | 9.5        | -             |
| 1980 | 10.5       | -             |
| 1990 | 11.5       | -             |
| 2000 | 12.5       | 10.5          |
| 2010 | -          | 13.5          |
| 2020 | -          | 16.0          |
| 2030 | -          | 17.5          |
| 2040 | -          | 18.0          |
| 2050 | -          | 18.5          |

Overcast

none

20

~~CONFIDENTIAL~~

no

clear

Yes

yes

---

---

---

# FIELD SAMPLING QA CHECKLIST

Station ID: 613-8111

Arrival Date/Time: 0830 9/9/13

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

### 2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y |
| Equipment washed/rinsed from previous station?                                                             | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y |
| Sampling instrument washed with Alconox?                                                                   | Y |
| Sampling instrument given site water rinse prior to deployment?                                            | Y |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y |
| Sample bottles are lab certified; contaminant free?                                                        | Y |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y |
| Grab disposition / characteristic information recorded?                                                    | Y |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y |
| Sediment evenly distributed among containers?                                                              | Y |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y |
| Staff avoided contaminating samples at all times?                                                          | Y |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y |
| Equipment or field blank collected (if applicable)?                                                        | Y |

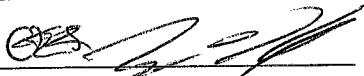
### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 9/9/13 0845

Print Name/Company: Tyler Huff AMEC

# BIGHT'13 SEDIMENT SAMPLE TRACKING FORM

AGENCY: RHMP

Page 1 of 1

DATE: 9/10/13

COMPLETED  
BY: JR

[illegible]

[illegible]



# STATI OCCUPATION

BI T'13

Agency Code 72KMP

Salinity (ppt)           

Station ID DD-8102

Vessel Name Early Bird

At estuary Sites only

Date 9/10/13

Arrival Time 1620  
(hh:mm)

Station Fail Code None

Abandoned site?

Y or N (if Y explain in comments)

Wind

Speed (kts) 3

Direction (4) ✓

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS ☒

GPS ☐

Equipment Type

Van Veen ☐

Tandem Van Veen ☒

Station Comments

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos     |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|------------|
|                      | 1650         | 32.71154             | -117.23255            | 6.6       | 54                     | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 569 - 0574 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
|                      | 1700         | 32.71144             | -117.23257            | 6.6       | 54                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | N            |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |            |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 9/10/13

Time: 1630

Station ID: DB-810Z

Water Depth: 5.9

Tide: -

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Light Green

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8102

Arrival Date/Time: 9/10/13 1620

Site Acceptable for Sampling: Water Y or N

Sediment Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |   |
|-----------------------------------------------------------------------------------------|---|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y |
| Equipment washed/rinsed from previous station?                                          | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y |
| Sampling instrument washed with Alconox?                                                | Y |
| Sampling instrument given site water rinse prior to deployment?                         | Y |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y |
| Sample bottles are lab certified, contaminant free?                                     | Y |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y |
| Grab disposition / characteristic information recorded?                                 | Y |
| Filtration for dissolved metals completed immediately after collection?                 | Y |
| Staff avoided contaminating samples at all times?                                       | Y |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y |
| Equipment or field blank collected (if applicable)?                                     | Y |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓ |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓ |
| Equipment washed/rinsed from previous station?                                                             | ✓ |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓ |
| Sampling instrument washed with Alconox?                                                                   | ✓ |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓ |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓ |
| Sample bottles are lab certified, contaminant free?                                                        | ✓ |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓ |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓ |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓ |
| Grab disposition / characteristic information recorded?                                                    | ✓ |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓ |
| Sediment evenly distributed among containers?                                                              | ✓ |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓ |
| Staff avoided contaminating samples at all times?                                                          | ✓ |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | ✓ |
| Equipment or field blank collected (if applicable)?                                                        | ✓ |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1830

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# STATN OCCUPATION

BI 1'13

Agency Code RAMP  
Vessel Name Early Bird  
Arrival Time 1521 (hh:mm)

Weather  
☒ Clear  
☐ Overcast  
☐ Partly cloudy  
☐ Drizzle

Sea State  
☒ Calm  
☐ Choppy  
☐ Rough

Salinity (ppt) 00-8106  
At estuary Sites only  
Date 9/10/13  
Abandoned site? N  
Station Fail Code None  
Y or N (if Y explain in comments)

Wind  
Speed (kts) 8  
Direction (4) SW

Swell  
Period (s) 0  
Height (ft) 0  
Direction (4) 0

Station Comments

Nav Type  
☒ DGPS  
☐ GPS

Equipment Type  
☐ Van Veen  
☒ Tandem Van Veen

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
|                      | 1549         | 32.71233             | -117.23213            | 5.5       | 33                     | None               | 16               | Silt            | None     | olive     | N                | X       | X        | X          |         | Y            | 564-0566  |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
|                      | 1600         | 32.71231             | -117.23204            | 5.5       | 33                     | None               | 16               | Silt            | None     | olive     | N                |         |          |            | X       | Y            | 0567-0569 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

Sample types (Chk all that apply)  
*biothic*  
*sample*

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Anthropogenic obstruction (comment req.), Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 9/10/13

Time: 1530

Station ID: B13-8106

Water Depth: 5.5

Tide: -

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8106

Arrival Date/Time: 7/10/13 1521

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |   |
|-----------------------------------------------------------------------------------------|---|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y |
| Equipment washed/rinsed from previous station?                                          | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y |
| Sampling instrument washed with Alconox?                                                | Y |
| Sampling instrument given site water rinse prior to deployment?                         | Y |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y |
| Sample bottles are lab certified, contaminant free?                                     | Y |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y |
| Grab disposition / characteristic information recorded?                                 | Y |
| Filtration for dissolved metals completed immediately after collection?                 | Y |
| Staff avoided contaminating samples at all times?                                       | Y |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y |
| Equipment or field blank collected (if applicable)?                                     | Y |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓ |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓ |
| Equipment washed/rinsed from previous station?                                                             | ✓ |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓ |
| Sampling instrument washed with Alconox?                                                                   | ✓ |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓ |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓ |
| Sample bottles are lab certified, contaminant free?                                                        | ✓ |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓ |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓ |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓ |
| Grab disposition / characteristic information recorded?                                                    | ✓ |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓ |
| Sediment evenly distributed among containers?                                                              | ✓ |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓ |
| Staff avoided contaminating samples at all times?                                                          | ✓ |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | ✓ |
| Equipment or field blank collected (if applicable)?                                                        | ✓ |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1830

Print Name/Company: \_\_\_\_\_

John R. Rodolph AMEC



# STAT OCCUPATION

BI T'13

Agency Code PLUMP  
Vessel Name Early Bird  
Arrival Time 1424 (hh:mm)

Weather  
☒ Clear  
☐ Overcast  
☐ Partly cloudy  
☐ Drizzle

Sea State  
☒ Calm  
☐ Choppy  
☐ Rough

Salinity (ppt)             
At estuary Sites only  
Date 9/10/13

Station ID B13-8108  
Station Fail Code None  
Abandoned site? ☒ Y or N (if Y explain in comments)

Wind  
Speed (kts) 9  
Direction (4) SW

Nav Type  
☒ DGPS  
☐ GPS

Station Comments

Equipment Type  
☐ Van Veen  
☒ Tandem Van Veen

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (V/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos  |
|----------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|---------|
| 1                    | 1446         | 32.71449               | -117.23011              | 5.1       | 10                     | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 559-561 |
| 2                    | 1457         | 32.71455               | -117.23019              | 5.1       | 15                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       | N            | 562-563 |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |
| Grab Event Comments: |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |         |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmospheric (comment req.), Temporary - mechanical (comment req.), Temporary - abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Contd, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 7/10/13

Time: 1435

Station ID: B13-8108

Water Depth: 5.1m

Tide: -

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8108

Arrival Date/Time: 9/10/13 1424

Site Acceptable for Sampling: Water: (Y) or N

Sediment: (Y) or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓ |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓ |
| Equipment washed/rinsed from previous station?                                                             | ✓ |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓ |
| Sampling instrument washed with Alconox?                                                                   | ✓ |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓ |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓ |
| Sample bottles are lab certified; contaminant free?                                                        | ✓ |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓ |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓ |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓ |
| Grab disposition / characteristic information recorded?                                                    | ✓ |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓ |
| Sediment evenly distributed among containers?                                                              | ✓ |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓ |
| Staff avoided contaminating samples at all times?                                                          | ✓ |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | ✓ |
| Equipment or field blank collected (if applicable)?                                                        | ✓ |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | ✓ |
| Proper persons have signed and dated all COCs?                                                                                               | ✓ |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | ✓ |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | ✓ |
| Toxicity samples stored cold on wet ice?                                 | ✓ |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | ✓ |
| Cooler is taped shut for transport to lab?                               | ✓ |
| Completed COC is included in plastic bag in cooler?                      | ✓ |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1530

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# STATI OCCUPATION

BI T'13

Agency Code PKMT

Weather

Clear ☒  
Overcast ☐  
Partly cloudy ☐  
Drizzle ☐

Sea State

Rain ☐  
Thunderstorm ☐  
Fog ☐

Salinity (ppt)

☒ Calm  
☐ Choppy  
☐ Rough

Station ID BZ-8116

Date 9/10/13

At estuary Sites only

Station Fail Code None

Abandoned site?

N

Y or N (if Y explain in comments)

Wind

Speed (kts) 8

Direction (4) SW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS ☒  
GPS ☐

Station Comments

Equipment Type

Van Veen ☐  
Tandem Van Veen ☒

## GRAB EVENTS

| #                                                                               | Time (hh:mm) | Latitude (DD°MM.mmmmm) | Longitude (DD°MM.mmmmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|---------------------------------------------------------------------------------|--------------|------------------------|-------------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1343                                                                            | 32.71850     | -117.73051             | 3.8                     | 65        | No                     | 15                 | Sand             | None Olive      | N        | N         | N                | X       |          |            |         | N            | 0551-0553 |
| Grab Event Comments: Only used one side of tandem for bottom. Other washed out. |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1351                                                                            | 32.71834     | -117.73024             | 3.8                     | 42        | No                     | 15                 | Sand             | None Olive      | N        | N         | N                | X       |          |            |         | N            | 0554-0556 |
| Grab Event Comments:                                                            |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1402                                                                            | 32.71838     | -117.73036             | 3.8                     | 46        | No                     | 16                 | Sand             | None Olive      | N        | N         | N                | X       |          |            |         | N            | 0557-0558 |
| Grab Event Comments:                                                            |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                            |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                            |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments:                                                            |              |                        |                         |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Temporary - atmospheric (comment req.), Too Shallow (comment req.), Too many Event Failures (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 9/10/13

Time: 1330

Station ID: B13-8116

Water Depth: 3.8 m

Tide: -

Weather: Clear

Odor: No

Floating Material?  
(Yes / No) No

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS:

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8116

Arrival Date/Time: 9/10/16 1321

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rodolph

Date/Time: 9/10/13 1830

Print Name/Company: John Rodolph AMEC



**BI T'13**

## Weather

## Overcast

## Drizzle

## Sea State

## Calm

## Choppy

## Rough

## Rain

**term**

Fog

## Swell

Period (s)

Height (ft)

### reaction (4)

de

7

### ent Type

1

X

### Station Comments

Timble Tds. Grab C

25917-23

Sample types (Chk all that apply)

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, < 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

9/10/13

Time:

1200

Station ID:

B13-8113

Water Depth:

4.5

Tide:

**1782**

Weather:

Clec

Odor:

None

Floating Material?  
(Yes / No)

Yes

Photo Number:

© 1999 Blackwell Science Ltd

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

light green

CTD Data Archived?  
(Yes /-No)

ter

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

[illegible]

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8113

Arrival Date/Time: 9/10/13 1149

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |   |
|-----------------------------------------------------------------------------------------|---|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y |
| Equipment washed/rinsed from previous station?                                          | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y |
| Sampling instrument washed with Alconox?                                                | Y |
| Sampling instrument given site water rinse prior to deployment?                         | Y |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y |
| Sample bottles are lab certified, contaminant free?                                     | Y |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y |
| Grab disposition / characteristic information recorded?                                 | Y |
| Filtration for dissolved metals completed immediately after collection?                 | Y |
| Staff avoided contaminating samples at all times?                                       | Y |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y |
| Equipment or field blank collected (if applicable)?                                     | N |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y |
| Equipment washed/rinsed from previous station?                                                             | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y |
| Sampling instrument washed with Alconox?                                                                   | Y |
| Sampling instrument given site water rinse prior to deployment?                                            | Y |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y |
| Sample bottles are lab certified; contaminant free?                                                        | Y |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y |
| Grab disposition / characteristic information recorded?                                                    | Y |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y |
| Sediment evenly distributed among containers?                                                              | Y |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y |
| Staff avoided contaminating samples at all times?                                                          | Y |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y |
| Equipment or field blank collected (if applicable)?                                                        | N |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1830

Print Name/Company: \_\_\_\_\_

John Redolph AMEC

## STATION OCCUPATION

BIG H 1'13

Agency Code XXXXP Weather ☒ Clear ☐ Rain ☐ Thunderstorm ☐ Fog

Vessel Name Early Bird ☒ Overcast ☐ Partly cloudy ☐ Drizzle

Arrival Time 1049 (hh:mm)

Salinity (ppt) 212-8117 Station ID 212-8117

At estuary Sites only ☒ Date 9/10/13

Abandoned site? ☒ Station Fail Code None

Y or N (if Y explain in comments)

Wind Speed (kts) 6.1 Swell Period (s) 0

Direction (4) 1 Height (ft) 0

Direction (4) 0

Nav Type ☒ DGPS ☐ GPS

Equipment Type ☒ Van Veen ☐ Tandem Van Veen

Station Comments Next to fuel dock

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 1107                 | 32.71857     | -117.22611           | 8.4                   | 6.0       | 18                     | None               | 16               | Silt            | None     | Olive     | N                | X       | X        | X          |         | N            | 0541-0543 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| 1119                 | 32.71858     | -117.22614           | 6.0                   | 18        | 18                     | None               | 16               | Silt            | None     | Olive     | N                |         |          |            | X       |              | 0544-0546 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.), Poor closure - other (comment req.), Debris (comment req.), Live animal (comment req.), Flipped, Rocks/gravel, Dead shell, Premature closure, biology only

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Poor closure - other (comment req.), Heavily Contaminated, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date: 9/10/13

Time: 1100

Station ID: B13-8117

Water Depth: 6.1m

Tide: -

Weather: Clear

Odor: None

Floating Material?  
(Yes / No) None

Photo Number: -

Visible Turbidity Plume?  
(Yes / No) No

Water Color: Clear

CTD Data Archived?  
(Yes / No) Yes

Samples Collected?  
(Yes / No) Yes

COMMENTS: At ~~the~~ fuel dock shelter island

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8117

Arrival Date/Time: 9/10/13 1049

Site Acceptable for Sampling: Water Y or N

Sediment Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Equipment or field blank collected (if applicable)?                                                        | N  |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1830

Print Name/Company: \_\_\_\_\_

John Redolph  
AMEC



# BIGY '13

Station ID

**At estuary Sites only**

## Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

|               |   |               |   |
|---------------|---|---------------|---|
| Speed (kts)   | 5 | Period (s)    | 0 |
| Direction (4) | W | Height (ft)   | 0 |
|               |   | Direction (4) | 0 |

|                                                                                   |  |
|-----------------------------------------------------------------------------------|--|
|  |  |
|-----------------------------------------------------------------------------------|--|

### Station Comments

Equipment Type

Van Veen  
Tandem Van Veen

Sample types (Chk all that apply)

| #                                     | Time<br>(hh:mm) | Latitude<br>(DD°MM.mmmmm) | Longitude<br>(DD°MM.mmmmm) | Depth<br>(m) | Distance<br>to target<br>(m) | Grab<br>Fail<br>Code (6) | Penetration<br>(cm) | Composition<br>(1) | Odor<br>(2) | Color<br>(3) | Shell<br>Hash<br>(Y/N) | Infauna | Sed<br>Chem | Grain<br>Size | Sed<br>Tox | Debris<br>(Y/N) | Photos    |
|---------------------------------------|-----------------|---------------------------|----------------------------|--------------|------------------------------|--------------------------|---------------------|--------------------|-------------|--------------|------------------------|---------|-------------|---------------|------------|-----------------|-----------|
| 0946                                  | 32.71228        | -117.21397                | 3.7                        | 90           | None                         | 13                       | Sand                | None               | Grey        | N            | X                      | X       | X           | X             |            | N               | 0527-0531 |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 0958                                  | 32.71235        | -117.21359                | 5.0                        | 93           | None                         | 12                       | Sand                | None               | Grey        | N            |                        |         |             | X             |            | N               | 0532-0535 |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| 1009                                  | 32.71245        | -117.21383                | 6.0                        | 79           | None                         | 11                       | Sand                | None               | Grey        | N            |                        |         |             | X             |            | N               | 0536-0539 |
| Grab Event Comments: more sed for tox |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |
| Grab Event Comments:                  |                 |                           |                            |              |                              |                          |                     |                    |             |              |                        |         |             |               |            |                 |           |

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
3 Sediment Color: Brown, Gray, Black, Olive green, Red  
4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Dead shell, Live animal (comment req.), Debris (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

## CTD Field Data Sheet

Date:

9/10/13

Time:

0930

Station ID:

B13-8105

Water Depth:

1.7m

Tide:

~~WANDER JOURNALS~~

Weather:

Clec

Odor:

No

Floating Material?  
(Yes / No)

Feigra

Photo Number:

**Abstract**

Visible Turbidity Plume?  
(Yes / No)

No.

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

[illegible]

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8105

Arrival Date/Time: 9/16/13 0920

Site Acceptable for Sampling: Water Y or N

Sediment Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y |
| Equipment washed/rinsed from previous station?                                                             | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y |
| Sampling instrument washed with Alconox?                                                                   | Y |
| Sampling instrument given site water rinse prior to deployment?                                            | Y |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y |
| Sample bottles are lab certified; contaminant free?                                                        | Y |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y |
| Grab disposition / characteristic information recorded?                                                    | Y |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y |
| Sediment evenly distributed among containers?                                                              | Y |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y |
| Staff avoided contaminating samples at all times?                                                          | Y |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | N |
| Equipment or field blank collected (if applicable)?                                                        | N |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph

Date/Time: 9/10/13 1830

Print Name/Company: John Rudolph AMEC

# STATION OCCUPATION

BL' '13

Agency Code PLKMP Station ID 113-8085 Salinity (ppt)           

Vessel Name Early Bird Date 9/10/13 At estuary Sites only           

Arrival Time (hh:mm) 0732 Station Fail Code None Abandoned site? N Y or N (if Y explain in comments)

Weather Clear Sea State Calm Nav Type DGPS

Overcast Choppy GPS

Partly cloudy Rough Van Veen

Drizzle            Tandem Van Veen

Wind Speed (kts) 4.0 Station Comments had to move station occupation after being saved. Naval security asked us to move away from gate.

Direction (4) W

Swell Period (s) 0

Height (ft) 0

Direction (4) 0

Equipment Type X

## GRAB EVENTS

| #                    | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Distance to target (m) | Grab Fail Code (6) | Penetration (cm) | Composition (1) | Odor (2) | Color (3) | Shell Hash (Y/N) | Infauna | Sed Chem | Grain Size | Sed Tox | Debris (Y/N) | Photos    |
|----------------------|--------------|----------------------|-----------------------|-----------|------------------------|--------------------|------------------|-----------------|----------|-----------|------------------|---------|----------|------------|---------|--------------|-----------|
| 0838                 | 32.69169     | -117.23824           | 14.9                  | 67        | None                   | 16                 | Silt             | None            | Olive    | N         | X                | X       | X        | X          | N       | N            | 0523-0526 |
| 0849                 | 32.69164     | -117.23824           | 15.2                  | 64        | None                   | 16                 | Silt             | None            | Olive    | N         | X                | X       | X        | X          | N       | N            | 0523-0526 |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |
| Grab Event Comments: |              |                      |                       |           |                        |                    |                  |                 |          |           |                  |         |          |            |         |              |           |

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

CTD Field Data Sheet

Date:

9/10/13

Time:

0810

Station ID:

B13-808V

Water Depth:

14.0m

Tide:

—

Weather:

Overcast

Odor:

None

Floating Material?  
(Yes / No)

None

Photo Number:

—

Visible Turbidity Plume?  
(Yes / No)

No

Water Color:

Clear

CTD Data Archived?  
(Yes / No)

Yes

Samples Collected?  
(Yes / No)

Yes

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FIELD SAMPLING QA CHECKLIST

9/10/13

Station ID: B13-5055

Arrival Date/Time: 0732 0743

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment? | Y |
|-----------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |   |
|-----------------------------------------------------------------------------------------|---|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y |
| Equipment washed/rinsed from previous station?                                          | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y |
| Sampling instrument washed with Alconox?                                                | Y |
| Sampling instrument given site water rinse prior to deployment?                         | Y |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y |
| Sample bottles are lab certified, contaminant free?                                     | Y |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y |
| Grab disposition / characteristic information recorded?                                 | Y |
| Filtration for dissolved metals completed immediately after collection?                 | Y |
| Staff avoided contaminating samples at all times?                                       | Y |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y |
| Equipment or field blank collected (if applicable)?                                     | N |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------|---|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y |
| Equipment washed/rinsed from previous station?                                                             | Y |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y |
| Sampling instrument washed with Alconox?                                                                   | Y |
| Sampling instrument given site water rinse prior to deployment?                                            | Y |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y |
| Sample bottles are lab certified, contaminant free?                                                        | Y |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y |
| Grab disposition / characteristic information recorded?                                                    | Y |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y |
| Sediment evenly distributed among containers?                                                              | Y |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y |
| Staff avoided contaminating samples at all times?                                                          | Y |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | N |
| Equipment or field blank collected (if applicable)?                                                        | N |

### 5. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 6. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/10/13 1830

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC



## STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Weather

Clear ☒Rain ☐Overcast ☐Thunderstorm ☐Partly cloudy ☐Fog ☐Drizzle ☐

Sea State

Calm ☒Choppy ☐Rough ☐

Nav Type

DGPS ☒GPS ☐Station ID B13-8109Date 9/3/13Arrival Time 1410

(hh:mm)



Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 9.1Direction (4) W

Swell

Period (s) 0Height (ft) 0Direction (4) 0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 1417         | 32.71699             | -117.18601            | 11.3      | 50       | —                      | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 1419         | 32.71629             | -117.18457            | 10.4 11.3 |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1428         | 32.71259             | -117.18102            | 10.4      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1431         | 32.71229             | -117.18087            | 10.4      |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8109

Page 1 of 1

Date: 9/3/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

| Species                | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more abundant spp. | FID or Voucher # | Weight (kg)      |       |       | Photos (D, L, V)<br>Y/N |
|------------------------|----|------------------------------------------------------------------------------------------------------------|------------------|------------------|-------|-------|-------------------------|
|                        |    |                                                                                                            |                  | Gross            | Tare  | Net   |                         |
| 1 Bat Ray              | 1  | L 78<br>W 47                                                                                               |                  | —                | —     | 1.85  | Y                       |
| 2 Shortnose Guitarfish | 1  | <del>840</del> 84                                                                                          | Y                | —                | —     | 1.97  |                         |
| 3 Grey Smoothhound     | 1  | 62                                                                                                         |                  | —                | —     | 0.65  |                         |
| 4 Butterfly Ray        | 1  | L 30<br>W 46                                                                                               |                  | —                | —     | 0.80  |                         |
| 5 White Seabass        | 1  | 24                                                                                                         |                  | —                | —     | 0.14  |                         |
| 6 Diamond Turbot       | 1  | 22                                                                                                         |                  | 0.365            | 0.095 | 0.27  |                         |
| 7 Fantail Sole         | 1  | 22                                                                                                         | Y                | 0.380            | 0.095 | 0.285 |                         |
| 8 Spotted Turbot       | 8  | 11, 15, 13, 14, 16, 15, 16, 15                                                                             |                  | 0.765            | 0.095 | 0.67  |                         |
| 9 CA Halibut           | 7  | 41, 15, 21, 26, 21, 16, 13                                                                                 |                  | 2.05             | 0.370 | 1.68  |                         |
| 10 CA Tonguefish       | 15 | 9, 9, 11, 10, 10, 10, 10, 10, 9, 10, 9, 11, 9, 9                                                           |                  | 0.240            | 0.055 | 0.145 |                         |
| 11 Speckled Midshipman | 5  | 18, 20, 18, 6, 6                                                                                           | Y                | 0.200            | 0.055 | 0.205 |                         |
| CA Lizardfish          | 75 | see other sheet                                                                                            |                  | 2.35             | 0.37  | 1.98  |                         |
| Barred Sand Bass       | 2  | 13, 18                                                                                                     |                  | 0.265            | 0.095 | 0.17  |                         |
| 14 Spotted Sand Bass   | 11 | 18, 19, 19, 20, 20, 18, 18, 20, 20, 18, 19                                                                 | 2780             | <del>0.220</del> | 0.370 | 1.83  |                         |
| 15 Round Sting Ray     | 54 | see other sheet                                                                                            |                  | 12.9             | 0.74  | 12.16 | Y                       |
| 16                     |    |                                                                                                            |                  |                  |       |       |                         |
| 17                     |    |                                                                                                            |                  |                  |       |       |                         |
| 18                     |    |                                                                                                            |                  |                  |       |       |                         |
| 19                     |    |                                                                                                            |                  |                  |       |       |                         |
| 20                     |    |                                                                                                            |                  |                  |       |       |                         |
| 21                     |    |                                                                                                            |                  |                  |       |       |                         |
| 22                     |    |                                                                                                            |                  |                  |       |       |                         |
| 23                     |    |                                                                                                            |                  |                  |       |       |                         |
| 24                     |    |                                                                                                            |                  |                  |       |       |                         |
| 25                     |    |                                                                                                            |                  |                  |       |       |                         |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: 2 spotted turbot w/ anomaly - fin deformation, ambicoloration (see pics)

QA Pass/Fail: (circle)

Yes

No

(NA) (not available) - performed at B13-8122

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8109

Page 1 of 1

Date: 9/3/13

Completed by: VR

Gross weight (kg) 2.35

Tare Weight (kg) 0.370

Net weight (kg) 1.98

| Size class | N         | Species: <u>CA Lizardfish</u> | Anomalies |
|------------|-----------|-------------------------------|-----------|
| 1          |           |                               |           |
| 2          |           |                               |           |
| 3          |           |                               |           |
| 4          |           |                               |           |
| 5          |           |                               |           |
| 6          |           |                               |           |
| 7          |           |                               |           |
| 8          |           |                               |           |
| 9          | <u>1</u>  | <u>1</u>                      |           |
| 10         | <u>1</u>  | <u>1</u>                      |           |
| 11         | <u>10</u> | <u>     </u>                  |           |
| 12         | <u>26</u> | <u>     </u>                  |           |
| 13         | <u>15</u> | <u>     </u>                  |           |
| 14         | <u>10</u> | <u>     </u>                  |           |
| 15         | <u>3</u>  | <u>   </u>                    |           |
| 16         | <u>2</u>  | <u>  </u>                     |           |
| 17         | <u>1</u>  | <u>1</u>                      |           |
| 18         |           |                               |           |
| 19         |           |                               |           |
| 20         |           |                               |           |
| 21         |           |                               |           |
| 22         | <u>1</u>  | <u>1</u>                      |           |
| 23         |           |                               |           |
| 24         |           |                               |           |
| 25         | <u>1</u>  | <u>1</u>                      |           |
| 26         |           |                               |           |
| 27         | <u>2</u>  | <u>  </u>                     |           |
| 28         |           |                               |           |
| 29         | <u>2</u>  | <u>  </u>                     |           |
| 30         |           |                               |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

Total Abundance 75

QA Pass/Fail: (circle)

Yes

No

NA (not available)

- performed at B13-8122

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8109

Page 1 of 1

Date: 9/3/13

Completed by: JK

Gross weight (kg) 6.4 + 6.5 = 12.9 Tare Weight (kg) 0.370 x 2 = 0.74 Net weight (kg) 12.16

| Size class | N         | Species: <u>Round Sting Ray</u>                       | Anomalies |
|------------|-----------|-------------------------------------------------------|-----------|
| 1          |           |                                                       |           |
| 2          |           |                                                       |           |
| 3          |           |                                                       |           |
| 4          |           |                                                       |           |
| 5          |           |                                                       |           |
| 6          |           |                                                       |           |
| 7          |           |                                                       |           |
| 8          |           |                                                       |           |
| 9          |           |                                                       |           |
| 10         |           |                                                       |           |
| 11         |           |                                                       |           |
| 12         |           |                                                       |           |
| 13         |           |                                                       |           |
| 14         |           |                                                       |           |
| 15         |           |                                                       |           |
| 16         |           |                                                       |           |
| 17         |           |                                                       |           |
| 18         |           |                                                       |           |
| 19         |           |                                                       |           |
| 20         |           |                                                       |           |
| 21         |           |                                                       |           |
| 22         |           |                                                       |           |
| 23         | <u>1</u>  | <u>13</u>                                             |           |
| 24         | <u>3</u>  | <u>14, 14, 14,</u>                                    |           |
| 25         | <u>7</u>  | <u>15, 14, 14, 14, 14, 14, 14,</u>                    |           |
| 26         | <u>10</u> | <u>15, 15, 15, 15, 15, 15, 14, 15, 15, 14</u>         |           |
| 27         | <u>13</u> | <u>16, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15</u>     |           |
| 28         | <u>13</u> | <u>17, 15, 16, 17, 16, 16, 15, 16, 15, 16, 16, 15</u> |           |
| 29         | <u>3</u>  | <u>17, 16, 16,</u>                                    |           |
| 30         | <u>3</u>  | <u>17, 17, 17</u>                                     |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments: Numbers written in column to left are widths

Total Abundance 54

QA Pass/Fail: (circle)

Yes

No

NA (not available)

- performed at B13-8122

## BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

2106  
375  
2585Station: B13-8109Page 1 of 1Date: 9/3/13Completed by: Kelly TartData from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                      | N | Comments<br>(or Anomalies)       | FID or<br>Voucher<br># | Weight (kg)     |                 |                 | Photos<br>(D, L, V) |
|----|------------------------------|---|----------------------------------|------------------------|-----------------|-----------------|-----------------|---------------------|
|    |                              |   |                                  |                        | Gross           | Tare<br>Y/N     | Net             |                     |
| 1  | <i>Panulirus interruptus</i> | 1 | female                           |                        | 345             | 100             | 245             | Y-D                 |
| 2  | <i>Elthusa vulgaris</i>      | 2 | found on round rays              |                        | 20.1            | 20.1            | 20.1            | Y-D                 |
| 3  | <i>Acanthoptilum</i> sp.     | 3 |                                  |                        | 20.1            | 20.1            | 20.1            | Y-D                 |
| 4  | Brown sponge                 | 1 | very large                       | FID/DNA                | <del>315g</del> | <del>100g</del> | <del>215g</del> | <del>Y-D</del>      |
| 5  |                              |   | -already FID'd,<br>saved for DNA |                        | 2900g           | 375g            | 2525g           | N                   |
| 6  |                              |   |                                  |                        |                 |                 |                 |                     |
| 7  |                              |   |                                  |                        |                 |                 |                 |                     |
| 8  |                              |   |                                  |                        |                 |                 |                 |                     |
| 9  |                              |   |                                  |                        |                 |                 |                 |                     |
| 10 |                              |   |                                  |                        |                 |                 |                 |                     |
| 11 |                              |   |                                  |                        |                 |                 |                 |                     |
| 12 |                              |   |                                  |                        |                 |                 |                 |                     |
| 13 |                              |   |                                  |                        |                 |                 |                 |                     |
| 14 |                              |   |                                  |                        |                 |                 |                 |                     |
| 15 |                              |   |                                  |                        |                 |                 |                 |                     |
| 16 |                              |   |                                  |                        |                 |                 |                 |                     |
| 17 |                              |   |                                  |                        |                 |                 |                 |                     |
| 18 |                              |   |                                  |                        |                 |                 |                 |                     |
| 19 |                              |   |                                  |                        |                 |                 |                 |                     |
| 20 |                              |   |                                  |                        |                 |                 |                 |                     |
| 21 |                              |   |                                  |                        |                 |                 |                 |                     |
| 22 |                              |   |                                  |                        |                 |                 |                 |                     |
| 23 |                              |   |                                  |                        |                 |                 |                 |                     |
| 24 |                              |   |                                  |                        |                 |                 |                 |                     |
| 25 |                              |   |                                  |                        |                 |                 |                 |                     |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Zoobrytron - 31 g in catch

QA Pass/Fail: (circle)

Yes

No

NA (not available)

## BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM

Station: B13-<sup>BCS</sup>8118, Trawl #: 2 Agency: RHMP  
 Date: 9/3/13 Previously Measured by: Kelly Tait  
 Re-Measured by: Cross Stransky

Species #1

Site 8118

| Original Species name: <u>Farfantepenaeus californiensis</u> |          |                    |            |             |
|--------------------------------------------------------------|----------|--------------------|------------|-------------|
| QC Re-ID Species name: <u>Farfantepenaeus californiensis</u> |          |                    |            |             |
| Comments/Anomalies                                           | N        | QC Re-weigh (kg) g |            |             |
|                                                              |          | Gross              | Tare       | Net         |
| <u>None observed</u>                                         | <u>2</u> | <u>200g</u>        | <u>95g</u> | <u>105g</u> |
| Other species found in lot                                   |          |                    |            |             |
| 1                                                            |          |                    |            |             |
| 2                                                            |          |                    |            |             |
| 3                                                            |          |                    |            |             |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #2

Site 8109

| Original Species name: <u>Panulirus interruptus</u> |          |                    |            |            |
|-----------------------------------------------------|----------|--------------------|------------|------------|
| QC Re-ID Species name: <u>Panulirus interruptus</u> |          |                    |            |            |
| Comments/Anomalies                                  | N        | QC Re-weigh (kg) g |            |            |
|                                                     |          | Gross              | Tare       | Net        |
| <u>None observed</u>                                | <u>1</u> | <u>345</u>         | <u>100</u> | <u>245</u> |
| Other species found in lot                          |          |                    |            |            |
| 1                                                   |          |                    |            |            |
| 2                                                   |          |                    |            |            |
| 3                                                   |          |                    |            |            |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #1

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               | ✓    |      | BCS      |
| Count            | ✓    |      | BCS      |
| Biomass          | ✓    |      | BCS      |
| Anomalies        | ✓    |      | BCS      |

Species #2

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               | ✓    |      | BCS      |
| Count            | ✓    |      | BCS      |
| Biomass          | ✓    |      | BCS      |
| Anomalies        | ✓    |      | BCS      |

Notes:

ALIQOT RECORDING AND CALCULATIONS WORKSHEET (If necessary)

# BIGHT 13 TRAWL DEBRIS FORM

Agency: ILHMP

Page 1 of 1

Station: B3-8109 Trawl #: \_\_\_\_\_ Date: 9/3/13



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

| Anthropogenic Debris - include Brand Names in Comments if known | Plastic                      |       | Count   | Comment                              | Misc. Items/Pieces         |                               | Count   | Comment |       |         |
|-----------------------------------------------------------------|------------------------------|-------|---------|--------------------------------------|----------------------------|-------------------------------|---------|---------|-------|---------|
|                                                                 | Bag                          |       |         |                                      | Boat/Ship/Engine part      |                               |         |         |       |         |
|                                                                 | Bandaid                      |       |         |                                      | Clothing                   |                               |         |         |       |         |
|                                                                 | Balloon (mylar/latex)/Ribbon |       |         |                                      | Concrete/Asphalt           |                               |         |         |       |         |
|                                                                 | Bottle                       |       |         |                                      | Fiberglass                 |                               |         |         |       |         |
|                                                                 | Buoy                         |       |         |                                      | Food                       |                               |         |         |       |         |
|                                                                 | Cap/Lid                      |       |         |                                      | Leather                    |                               |         |         |       |         |
|                                                                 | Cigarette box/wrapper        |       |         |                                      | Lumber                     |                               |         |         |       |         |
|                                                                 | Cup                          |       |         |                                      | Paper                      |                               |         |         |       |         |
|                                                                 | Filmstrip (movie)            |       |         |                                      | Rag/Cloth                  |                               |         |         |       |         |
|                                                                 | Fishing Line/Net             |       |         |                                      | Rubber                     |                               |         |         |       |         |
|                                                                 | Food Bag / Wrapper           |       |         |                                      | Shoe                       |                               |         |         |       |         |
|                                                                 | Polypropylene Rope           |       |         |                                      | Tape                       |                               |         |         |       |         |
|                                                                 | Straw                        |       |         |                                      | Tire                       |                               |         |         |       |         |
|                                                                 | Toy                          |       |         |                                      | Other Misc. (comment req.) |                               |         |         |       |         |
| Utensil                                                         |                              |       |         | <b>Metal</b>                         |                            | Count                         | Comment |         |       |         |
| Plastic Piece (unid.)                                           |                              |       |         | Drink Can                            |                            |                               |         |         |       |         |
| Other Plastic (comment req.)                                    |                              |       |         | Can - other                          |                            |                               |         |         |       |         |
| <b>Glass</b>                                                    |                              | Count | Comment | Can Pull-tab                         |                            |                               |         |         |       |         |
| Beer Bottle                                                     |                              |       |         | Fishing Gear                         |                            |                               |         |         |       |         |
| Glass Bottle/Jar -other                                         |                              |       |         | Wire                                 |                            |                               |         |         |       |         |
| Glass Piece (unid.)                                             |                              |       |         | Metal Piece (unid.)                  |                            |                               |         |         |       |         |
| Other Glass (comment req.)                                      |                              |       |         | Other Metal (comment req.)           |                            |                               |         |         |       |         |
| Natural Debris                                                  | Marine Origin                |       | Count   | Est.*                                | Comment                    | Terrestrial Vegetation        |         | Count   | Est.* | Comment |
|                                                                 | Foliose Algae - not kelp     |       |         |                                      |                            | Leaves/Seed Pod               |         |         |       |         |
|                                                                 | Gorgonian Sea Fan (dead)     |       |         |                                      |                            | Stick/Branch/Driftwood        |         |         |       |         |
|                                                                 | Kelp Holdfast                |       |         |                                      |                            | Other Terrest. (comment req.) |         |         |       |         |
|                                                                 | Kelp Stipe/Blade             |       |         |                                      |                            |                               |         |         |       |         |
|                                                                 | Rock                         |       |         |                                      |                            |                               |         |         |       |         |
|                                                                 | Seagrass                     |       |         |                                      |                            |                               |         |         |       |         |
| Other Marine (comment req.)                                     |                              |       |         | <u>L</u> <u>Zoobryton</u> <u>315</u> |                            |                               |         |         |       |         |

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: TR

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8109

Arrival Date/Time: 8/28/13 0705 *red/late*

Site acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If N provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

-FIDs

8/09

# FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| species, use aliquot method of enumeration)?                                                                                                                  |   |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y |
| Total biomass of each species group recorded?                                                                                                                 | Y |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y |
| Any anomalies recorded?                                                                                                                                       | Y |
| Photo of one representative from each species collected?                                                                                                      | Y |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | Y |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y |

- Spilled  
Perbor

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/3/13 1830

Print Name/Company: John Rudolph AMEC

# STATION OCCUPATION

BIGHT'13

Agency Code RAMP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID B13-8118

Date 9/3/18

Arrival Time 1052

(hh:mm)



Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 5.1

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

Net hung on bottom for extended period - unknown obstruction  
Fish kept for bioaccumulation plastic injection only

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 1056         | 32.71942             | -117.17612            | 9.9       | 50m      |                        | unknown obstruction | Y                     | N                         | Y                      |
|              | Start Trawl | 1059         | 32.71961             | -117.17768            | 11.3      |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1109         | 32.72154             | -117.18302            | 11.7      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1115         | 32.72137             | -117.18213            | 11.8      |          |                        |                     |                       |                           |                        |
| 2            | Net Over    | 1154         | 32.71911             | -117.17539            | 9.1       | 50m      |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 1157         | 32.71962             | -117.17738            | 11.0      |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1206         | 32.72097             | -117.18297            | 11.5      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1208         | 32.72113             | -117.18326            | 11.5      |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8118

Page 1 of 1

Date: 9/3/13

Completed by: VR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

| Species             | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more<br>abundant spp. | FID or<br>Voucher # | Weight (kg) |       |       | Photos<br>(D, L, V) |
|---------------------|----|---------------------------------------------------------------------------------------------------------------|---------------------|-------------|-------|-------|---------------------|
|                     |    |                                                                                                               |                     | Gross       | Tare  | Net   | Y/N                 |
| 1 Bat Ray           | 1  | 76(W), 102.5(L)                                                                                               |                     | 8.7         | 0.1   | 8.6   | Y                   |
| 2 Spotted Sand Bass | 4  | 20, 19, 21, 21                                                                                                |                     | 0.900       | 0.095 | 0.805 |                     |
| 3 Yellowfin Croaker | 1  | 29                                                                                                            |                     | 0.550       | 0.095 | 0.455 |                     |
| 4 White Seabass     | 1  | 21                                                                                                            |                     | 0.205       | 0.095 | 0.11  |                     |
| 5 CA Halibut        | 10 | 19, 22, 20, 18, 19, 17, 17, 18, 21, 25                                                                        |                     | 1.60        | 0.370 | 1.23  |                     |
| 6 Tonguefish        | 5  | 11, 11, 11, 9, 9, 10                                                                                          |                     | 0.150       | 0.095 | 0.55  |                     |
| 7 Spotted Turbot    | 1  | 16                                                                                                            | Y                   | 0.200       | 0.095 | 0.105 |                     |
| 8 Grey Smoothhound  | 1  | 60                                                                                                            |                     | 0.25        | 0.370 | 0.68  |                     |
| 9 Round Stingray    | 6  | 29 L 28 27 25 27 26<br>16 W 16 15 15 16 15                                                                    |                     | 1.65        | 0.370 | 1.28  |                     |
| 10 Butterfly Ray    | 1  | 20 L<br>21 W                                                                                                  |                     | 0.325       | 0.095 | 0.23  |                     |
| 11 Barred Sand Bass | 17 | See other sheet                                                                                               |                     | 1.55        | 0.37  | 1.18  |                     |
| 12 CA Lizardfish    | 71 | See other sheet                                                                                               |                     | 2.10        | 0.37  | 1.73  | ✓                   |
| 13                  |    |                                                                                                               |                     |             |       |       |                     |
| 14                  |    |                                                                                                               |                     |             |       |       |                     |
| 15                  |    |                                                                                                               |                     |             |       |       |                     |
| 16                  |    |                                                                                                               |                     |             |       |       |                     |
| 17                  |    |                                                                                                               |                     |             |       |       |                     |
| 18                  |    |                                                                                                               |                     |             |       |       |                     |
| 19                  |    |                                                                                                               |                     |             |       |       |                     |
| 20                  |    |                                                                                                               |                     |             |       |       |                     |
| 21                  |    |                                                                                                               |                     |             |       |       |                     |
| 22                  |    |                                                                                                               |                     |             |       |       |                     |
| 23                  |    |                                                                                                               |                     |             |       |       |                     |
| 24                  |    |                                                                                                               |                     |             |       |       |                     |
| 25                  |    |                                                                                                               |                     |             |       |       |                     |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle)

Yes

No

(NA) (not available) - performed at B13-8122

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8115

Page 1 of 1

Date: 9/3/13

Completed by: JR

Gross weight (kg) 1.55

Tare Weight (kg) 0.370

Net weight (kg) 1.18

| Size class | N                     | Species: <u>Barred Sand Bass</u> | Anomalies |
|------------|-----------------------|----------------------------------|-----------|
| 1          |                       |                                  |           |
| 2          |                       |                                  |           |
| 3          |                       |                                  |           |
| 4          |                       |                                  |           |
| 5          |                       |                                  |           |
| 6          |                       |                                  |           |
| 7          |                       |                                  |           |
| 8          |                       |                                  |           |
| 9          |                       |                                  |           |
| 10         |                       |                                  |           |
| 11         |                       |                                  |           |
| 12         | <u>11</u> <u>2</u>    |                                  |           |
| 13         | <u>1111</u> <u>4</u>  |                                  |           |
| 14         | <u>11111</u> <u>6</u> |                                  |           |
| 15         | <u>1</u> <u>1</u>     |                                  |           |
| 16         |                       |                                  |           |
| 17         | <u>11</u> <u>2</u>    |                                  |           |
| 18         |                       |                                  |           |
| 19         | <u>1</u> <u>1</u>     |                                  |           |
| 20         | <u>1</u> <u>1</u>     |                                  |           |
| 21         |                       |                                  |           |
| 22         |                       |                                  |           |
| 23         |                       |                                  |           |
| 24         |                       |                                  |           |
| 25         |                       |                                  |           |
| 26         |                       |                                  |           |
| 27         |                       |                                  |           |
| 28         |                       |                                  |           |
| 29         |                       |                                  |           |
| 30         |                       |                                  |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

Total Abundance 17

QA Pass/Fail: (circle) Yes No NA (not available)

performed at B13-8122

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8118

Page 1 of 1

Date: 9/3/13

Completed by: JR

Gross weight (kg) 2.1

Tare Weight (kg) 0.370

Net weight (kg) 1.73

| Size class | N         | Species: <u>CA Lizardfish</u> | Anomalies |
|------------|-----------|-------------------------------|-----------|
| 1          |           |                               |           |
| 2          |           |                               |           |
| 3          |           |                               |           |
| 4          |           |                               |           |
| 5          |           |                               |           |
| 6          |           |                               |           |
| 7          |           |                               |           |
| 8          |           |                               |           |
| 9          |           |                               |           |
| 10         | <u>3</u>  | <u>   </u>                    |           |
| 11         | <u>6</u>  | <u>    </u>                   |           |
| 12         | <u>18</u> | <u>                </u>       |           |
| 13         | <u>25</u> | <u>                    </u>   |           |
| 14         | <u>10</u> | <u>        </u>               |           |
| 15         | <u>3</u>  | <u>   </u>                    |           |
| 16         | <u>1</u>  | <u> </u>                      |           |
| 17         | <u>1</u>  | <u> </u>                      |           |
| 18         |           |                               |           |
| 19         |           |                               |           |
| 20         |           |                               |           |
| 21         |           |                               |           |
| 22         |           |                               |           |
| 23         |           |                               |           |
| 24         |           |                               |           |
| 25         |           |                               |           |
| 26         |           |                               |           |
| 27         | <u>2</u>  | <u>  </u>                     |           |
| 28         | <u>2</u>  | <u>  </u>                     |           |
| 29         |           |                               |           |
| 30         |           |                               |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 71

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

performed at B13-8122

# BIGHT '13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8118

Page 1 of 1

Date: 9/3/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                             | N  | Comments<br>(or Anomalies)        | FID or<br>Voucher<br># | Weight (kg) |             |      | Photos<br>(D, L, V)<br>Y/N |
|----|-------------------------------------|----|-----------------------------------|------------------------|-------------|-------------|------|----------------------------|
|    |                                     |    |                                   |                        | Gross       | Tare<br>Y/N | Net  |                            |
| 1  | <i>Farfantepenaeus californicus</i> | 2  |                                   |                        | 200         | 95          | 105  | Y                          |
| 2  | <i>Crassostrea</i> sp.?             | 4  |                                   | FID                    | 40.1        | NA          | 40.1 | Y                          |
| 3  | Brown Sponge 1                      | 10 | soft, branched finger-like        | FID                    | 40.1        | NA          | 40.1 | Y                          |
| 4  | <del>Brown/Orange Sponge</del>      | 3  | <del>Firm &amp; 1 cm pieces</del> | <del>FID</del>         | —           | —           | —    | —                          |
| 5  | Yellow/Brown sponge <sup>Firm</sup> | —  | same as trawl 8/22                | FID                    | 4.3         | 0.37        | 3.93 | Y                          |
| 6  | <i>Heptacarpus</i> sp.              | 3  | barely 1 cm                       | FID                    | 40.1        | NA          | 40.1 | Y                          |
| 7  |                                     |    |                                   |                        |             |             |      |                            |
| 8  |                                     |    |                                   |                        |             |             |      |                            |
| 9  |                                     |    |                                   |                        |             |             |      |                            |
| 10 |                                     |    |                                   |                        |             |             |      |                            |
| 11 |                                     |    |                                   |                        |             |             |      |                            |
| 12 |                                     |    |                                   |                        |             |             |      |                            |
| 13 |                                     |    |                                   |                        |             |             |      |                            |
| 14 |                                     |    |                                   |                        |             |             |      |                            |
| 15 |                                     |    |                                   |                        |             |             |      |                            |
| 16 |                                     |    |                                   |                        |             |             |      |                            |
| 17 |                                     |    |                                   |                        |             |             |      |                            |
| 18 |                                     |    |                                   |                        |             |             |      |                            |
| 19 |                                     |    |                                   |                        |             |             |      |                            |
| 20 |                                     |    |                                   |                        |             |             |      |                            |
| 21 |                                     |    |                                   |                        |             |             |      |                            |
| 22 |                                     |    |                                   |                        |             |             |      |                            |
| 23 |                                     |    |                                   |                        |             |             |      |                            |
| 24 |                                     |    |                                   |                        |             |             |      |                            |
| 25 |                                     |    |                                   |                        |             |             |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "—" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Colonial ascidians ~ 3 cm length (not counted)  
zoobotryon by bryozoan

QA Pass/Fail: (circle) Yes No NA (not available)

# BIGH. 13 TRAWL DEBRIS FORM

Agency: RHMP

Page 1 of 1

Station: B13-8118 Trawl #: 1 Date: 9/3/13

☐ CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

| Anthropogenic Debris - include Brand Names in Comments if known | Plastic |         | Comment                    | Misc. Items/Pieces |         | Comment |
|-----------------------------------------------------------------|---------|---------|----------------------------|--------------------|---------|---------|
|                                                                 | Count   |         |                            | Count              |         |         |
| Bag                                                             |         |         | Boat/Ship/Engine part      |                    |         |         |
| Bandaids                                                        |         |         | Clothing                   |                    |         |         |
| Balloon (mylar/latex)/Ribbon                                    |         |         | Concrete/Asphalt           |                    |         |         |
| Bottle                                                          |         |         | Fiberglass                 |                    |         |         |
| Buoy                                                            |         |         | Food                       |                    |         |         |
| Cap/Lid                                                         |         |         | Leather                    |                    |         |         |
| Cigarette box/wrapper                                           |         |         | Lumber                     |                    |         |         |
| Cup                                                             |         |         | Paper                      |                    |         |         |
| Filmstrip (movie)                                               |         |         | Rag/Cloth                  |                    |         |         |
| Fishing Line/Net                                                |         |         | Rubber                     |                    |         |         |
| Food Bag / Wrapper                                              |         |         | Shoe                       |                    |         |         |
| Polypropylene Rope                                              |         |         | Tape                       |                    |         |         |
| Straw                                                           |         |         | Tire                       |                    |         |         |
| Toy                                                             |         |         | Other Misc. (comment req.) |                    |         |         |
| Utensil                                                         |         |         |                            |                    |         |         |
| Plastic Piece (unid.)                                           |         |         |                            |                    |         |         |
| Other Plastic (comment req.)                                    |         |         |                            |                    |         |         |
| Glass                                                           | Count   | Comment | Metal                      | Count              | Comment |         |
|                                                                 |         |         | Drink Can                  |                    |         |         |
|                                                                 |         |         | Can - other                |                    |         |         |
|                                                                 |         |         | Can Pull-tab               |                    |         |         |
|                                                                 |         |         | Fishing Gear               |                    |         |         |
|                                                                 |         |         | Wire                       |                    |         |         |
| Beer Bottle                                                     |         |         | Metal Piece (unid.)        |                    |         |         |
| Glass Bottle/Jar -other                                         |         |         | Other Metal (comment req.) |                    |         |         |
| Glass Piece (unid.)                                             |         |         |                            |                    |         |         |
| Other Glass (comment req.)                                      |         |         |                            |                    |         |         |

| Natural Debris              | Marine Origin |  | Est.* | Comment | Terrestrial Vegetation        |  | Est.* | Comment |
|-----------------------------|---------------|--|-------|---------|-------------------------------|--|-------|---------|
|                             | Count         |  |       |         | Count                         |  |       |         |
| Foliose Algae - not kelp    |               |  |       |         | Leaves/Seed Pod               |  |       |         |
| Gorgonian Sea Fan (dead)    |               |  |       |         | Stick/Branch/Driftwood        |  |       |         |
| Kelp Holdfast               |               |  |       |         | Other Terrest. (comment req.) |  |       |         |
| Kelp Stipe/Blade            |               |  |       |         |                               |  |       |         |
| Rock                        |               |  |       |         |                               |  |       |         |
| Seagrass                    |               |  |       |         |                               |  |       |         |
| Other Marine (comment req.) |               |  |       |         |                               |  |       |         |

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: JR

Zoobryton → (95g) 0.095 kg bucket/tare  
1525g (0.585 kg) net



## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8118

Arrival Date/Time: 8/28/13 1005 sed/water

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FIDs

8/15

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| species, use aliquot method of enumeration)?                                                                                                                  | Y |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y |
| Total biomass of each species group recorded?                                                                                                                 | Y |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y |
| Any anomalies recorded?                                                                                                                                       | Y |
| Photo of one representative from each species collected?                                                                                                      | Y |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | — |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | ✓ |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | — |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/3/13 1830Print Name/Company: John Rudolph

## STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Weather

Clear ☒Rain ☐Overcast ☐Thunderstorm ☐Partly cloudy ☐Fog ☐Drizzle ☐

Sea State

Calm ☒Choppy ☐Rough ☐

Nav Type

DGPS ☒GPS ☐Station ID 13-8122Date 9/3/13Arrival Time 0745

(hh:mm)

0839

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 5.3Direction (4) NW

Swell

Period (s) 0Height (ft) 0Direction (4) 0

Station Comments

-at 3min left, 5m let out more cable depth to 12.0m

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 0842         | 32.72221             | -117.17981            | 7.3       | 25m      |                        | N                   | Y                     | Y                         | Y                      |
|              | Start Trawl | 0843         | 32.72462             | -117.18185            | 6.9       |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 0853         | 32.72224             | -117.18683            | 12.1      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 0854         | 32.72205             | -117.18721            | 12.1      |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8/22

Page 1 of 1

Date: 9/3/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

| P  | Species           | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more<br>abundant spp. | FID or<br>Voucher # | Weight (kg) |       |       | Photos<br>(D, L, V)<br>Y/N |
|----|-------------------|----|---------------------------------------------------------------------------------------------------------------|---------------------|-------------|-------|-------|----------------------------|
|    |                   |    |                                                                                                               |                     | Gross       | Tare  | Net   |                            |
| 1  | Round Ray         | 1  | 32L, 18W                                                                                                      |                     | 0.465       | 0.095 | 0.37  | Y                          |
| 2  | Diamond Turbot    | 1  | 19                                                                                                            |                     | 0.290       | 0.095 | 0.195 |                            |
| 3  | CA Halibut        | 7  | 15, 16, 18, 19, 10, 12, 10                                                                                    |                     | 0.450       | 0.095 | 0.355 |                            |
| 4  | Black Croaker     | 1  | 18                                                                                                            | Yes                 | -           | -     | 0.15  | Y                          |
| 5  | Spotted Sand Bass | 4  | 18, 20, 22, 29                                                                                                | Yes                 | 1.5         | 0.370 | 1.13  |                            |
| 6  | Barred Sand Bass  | 12 | 15, 13, 13, 14, 13, 15, 12, 13, 13, 14, 14, 16                                                                |                     | 0.810       | 0.095 | 0.715 | ✓                          |
| 7  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 8  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 9  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 10 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 11 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 12 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 13 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 14 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 15 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 16 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 17 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 18 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 19 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 20 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 21 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 22 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 23 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 24 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 25 |                   |    |                                                                                                               |                     |             |       |       |                            |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

# BIGHT '13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8/22

Page 1 of 1

Date: 9/3/13

Completed by: VR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species               | N | Comments<br>(or Anomalies) | FID or<br>Voucher<br># | Weight (kg) |      |      | Photos<br>(D, L, V)<br>Y/N |
|----|-----------------------|---|----------------------------|------------------------|-------------|------|------|----------------------------|
|    |                       |   |                            |                        | Gross       | Net  | Net  |                            |
| 1  | Yellow/Brown Sponge   |   |                            | FID                    | 18.15       | 20.0 | 1.85 | Y                          |
| 2  | Crassostrea sp?       | 1 | * Attached to sponge       | FID                    | 40.1        | NA   | 40.1 | Y                          |
| 3  | Rock crab sp?         | 3 | * Attached to sponge       | FID                    | 40.1        | NA   | 40.1 | Y                          |
| 4  | Pyrosoma sp?          | 3 | * 1-1.2 cm stalked out     | FID                    | 40.1        | NA   | 40.1 | Y                          |
| 5  | Metacarcinus gracilis | 1 | 1.5 cm stalked out         | FID                    | 40.1        | NA   | 40.1 | Y                          |
| 6  |                       |   |                            |                        |             |      |      |                            |
| 7  |                       |   |                            |                        |             |      |      |                            |
| 8  |                       |   |                            |                        |             |      |      |                            |
| 9  |                       |   |                            |                        |             |      |      |                            |
| 10 |                       |   |                            |                        |             |      |      |                            |
| 11 |                       |   |                            |                        |             |      |      |                            |
| 12 |                       |   |                            |                        |             |      |      |                            |
| 13 |                       |   |                            |                        |             |      |      |                            |
| 14 |                       |   |                            |                        |             |      |      |                            |
| 15 |                       |   |                            |                        |             |      |      |                            |
| 16 |                       |   |                            |                        |             |      |      |                            |
| 17 |                       |   |                            |                        |             |      |      |                            |
| 18 |                       |   |                            |                        |             |      |      |                            |
| 19 |                       |   |                            |                        |             |      |      |                            |
| 20 |                       |   |                            |                        |             |      |      |                            |
| 21 |                       |   |                            |                        |             |      |      |                            |
| 22 |                       |   |                            |                        |             |      |      |                            |
| 23 |                       |   |                            |                        |             |      |      |                            |
| 24 |                       |   |                            |                        |             |      |      |                            |
| 25 |                       |   |                            |                        |             |      |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: 2 small pyrosoma 61 cm 61.0 kg Filamentous red algae

Sponge batch wts. = 4.6, 3.6, 4.6, 4.2, 3.0  
(Kg) tare 0.370 kg \* 5 = 1.85 Kg

QA Pass/Fail: (circle) Yes No NA (not available) - performed at 8109, 8118,

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8122Trawl #: 1Agency: RHMPDate: 9/3/13Previously Measured by: LHRe-Measured by: JROriginal Gross weight (kg) 0.810 Tare Weight (kg) 0.095 Net weight (kg) 0.715QC Re-weigh weight (kg) 0.805 Tare Weight (kg) 0.095 Net weight (kg) 0.710

| Size Class | Original Species: <i>Barred Sand Bass</i> |         |               | Anomalies |
|------------|-------------------------------------------|---------|---------------|-----------|
|            | QC Re-ID:                                 |         |               |           |
|            | Re-ID Count                               | +/-2 mm | Tweener count |           |
| 1          |                                           | 1-2     |               |           |
| 2          |                                           | 2-3     |               |           |
| 3          |                                           | 3-4     |               |           |
| 4          |                                           | 4-5     |               |           |
| 5          |                                           | 5-6     |               |           |
| 6          |                                           | 6-7     |               |           |
| 7          |                                           | 7-8     |               |           |
| 8          |                                           | 8-9     |               |           |
| 9          |                                           | 9-10    |               |           |
| 10         |                                           | 10-11   |               |           |
| 11         |                                           | 11-12   |               |           |
| 12         | 1                                         | 12-13   | 1             |           |
| 13         | 1111                                      | 13-14   | 111           |           |
| 14         |                                           | 14-15   | 11            |           |
| 15         |                                           | 15-16   |               |           |
| 16         | 1                                         | 16-17   |               |           |
| 17         |                                           | 17-18   |               |           |
| 18         |                                           | 18-19   |               |           |
| 19         |                                           | 19-20   |               |           |
| 20         |                                           | 20-21   |               |           |
| 21         |                                           | 21-22   |               |           |
| 22         |                                           | 22-23   |               |           |
| 23         |                                           | 23-24   |               |           |
| 24         |                                           | 24-25   |               |           |
| 25         |                                           | 25-26   |               |           |
| 26         |                                           | 26-27   |               |           |
| 27         |                                           | 27-28   |               |           |
| 28         |                                           | 28-29   |               |           |
| Total      | 6                                         | Total   | 6             | 0         |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass                                | Fail | Initials |
|--------------------------------|------|-----|------------------|-------------------------------------|------|----------|
|                                |      |     | Identification   | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Count            | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Length           | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Biomass          | <input checked="" type="checkbox"/> |      |          |
| Other species Weight (kg)      |      |     | Pathology        | <input checked="" type="checkbox"/> |      |          |
| Gross                          | Tare | Net | Notes:           |                                     |      |          |
|                                |      |     |                  |                                     |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8/22 Trawl #: 1 Agency: RHMP  
 Date: 9/3/13 Previously Measured by: LH  
 Re-Measured by: JR

Original Gross weight (kg) 0.440 Tare Weight (kg) 0.095 Net weight (kg) 0.345  
 QC Re-weigh weight (kg) ~~0.810~~ <sup>0.450 kg</sup> Tare Weight (kg) ~~0.095~~ <sub>0.095</sub> Net weight (kg) ~~0.355~~

| Size Class | Original Species: CA Halibut |         |               | Anomalies |
|------------|------------------------------|---------|---------------|-----------|
|            | QC Re-ID:                    |         |               |           |
|            | Re-ID Count                  | +/-2 mm | Tweener count |           |
| 1          |                              | 1-2     |               |           |
| 2          |                              | 2-3     |               |           |
| 3          |                              | 3-4     |               |           |
| 4          |                              | 4-5     |               |           |
| 5          |                              | 5-6     |               |           |
| 6          |                              | 6-7     |               |           |
| 7          |                              | 7-8     |               |           |
| 8          |                              | 8-9     |               |           |
| 9          |                              | 9-10    | 1             |           |
| 10         | 1                            | 10-11   |               |           |
| 11         |                              | 11-12   | 1             |           |
| 12         |                              | 12-13   |               |           |
| 13         |                              | 13-14   |               |           |
| 14         |                              | 14-15   | 1             |           |
| 15         |                              | 15-16   |               |           |
| 16         | 1                            | 16-17   |               |           |
| 17         |                              | 17-18   |               |           |
| 18         | 1                            | 18-19   | 1             |           |
| 19         |                              | 19-20   |               |           |
| 20         |                              | 20-21   |               |           |
| 21         |                              | 21-22   |               |           |
| 22         |                              | 22-23   |               |           |
| 23         |                              | 23-24   |               |           |
| 24         |                              | 24-25   |               |           |
| 25         |                              | 25-26   |               |           |
| 26         |                              | 26-27   |               |           |
| 27         |                              | 27-28   |               |           |
| 28         |                              | 28-29   |               |           |
| Total      | 3                            | Total   | 4             | 0         |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass | Fail | Initials |
|--------------------------------|------|-----|------------------|------|------|----------|
|                                |      |     | Identification   | ✓    |      |          |
|                                |      |     | Count            | ✓    |      |          |
|                                |      |     | Length           | ✓    |      |          |
|                                |      |     | Biomass          | ✓    |      |          |
| Other species Weight (kg)      |      |     | Pathology        | ✓    |      |          |
| Gross                          | Tare | Net | Notes:           |      |      |          |
|                                |      |     |                  |      |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #



## BIGF. 13 TRAWL DEBRIS FORM

Agency: RHMPPage 1 of 1Station: B13-8122 Trawl #: 1Date: 9/3/13CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

| Anthropogenic Debris - include Brand Names in Comments if known | Plastic                      |         | Count        | Comment                    | Misc. Items/Pieces                                                                                                                                   |                        | Count | Comment |       |         |
|-----------------------------------------------------------------|------------------------------|---------|--------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------|---------|-------|---------|
|                                                                 | Bag                          |         |              |                            | Boat/Ship/Engine part                                                                                                                                |                        |       |         |       |         |
|                                                                 | Bandaids                     |         |              |                            | Clothing                                                                                                                                             |                        |       |         |       |         |
|                                                                 | Balloon (mylar/latex)/Ribbon |         |              |                            | Concrete/Asphalt                                                                                                                                     |                        |       |         |       |         |
|                                                                 | Bottle                       |         |              |                            | Fiberglass                                                                                                                                           |                        |       |         |       |         |
|                                                                 | Buoy                         |         |              |                            | Food                                                                                                                                                 |                        |       |         |       |         |
|                                                                 | Cap/Lid                      |         |              |                            | Leather                                                                                                                                              |                        |       |         |       |         |
|                                                                 | Cigarette box/wrapper        |         |              |                            | Lumber                                                                                                                                               |                        |       |         |       |         |
|                                                                 | Cup                          |         |              |                            | Paper                                                                                                                                                |                        |       |         |       |         |
|                                                                 | Filmstrip (movie)            |         |              |                            | Rag/Cloth                                                                                                                                            |                        |       |         |       |         |
|                                                                 | Fishing Line/Net             |         |              |                            | Rubber                                                                                                                                               |                        |       |         |       |         |
|                                                                 | Food Bag / Wrapper           |         |              |                            | Shoe                                                                                                                                                 |                        |       |         |       |         |
|                                                                 | Polypropylene Rope           |         |              |                            | Tape                                                                                                                                                 |                        |       |         |       |         |
|                                                                 | Straw                        |         |              |                            | Tire                                                                                                                                                 |                        |       |         |       |         |
|                                                                 | Toy                          |         |              |                            | Other Misc. (comment req.)                                                                                                                           |                        |       |         |       |         |
|                                                                 | Utensil                      |         |              |                            | Metal                                                                                                                                                |                        | Count | Comment |       |         |
|                                                                 | Plastic Piece (unid.)        |         |              |                            | Drink Can                                                                                                                                            |                        |       |         |       |         |
|                                                                 | Other Plastic (comment req.) |         |              |                            | Can - other                                                                                                                                          |                        |       |         |       |         |
| Glass                                                           | Count                        | Comment | Can Pull-tab |                            |                                                                                                                                                      |                        |       |         |       |         |
|                                                                 | Beer Bottle                  |         |              | Fishing Gear               |                                                                                                                                                      |                        |       |         |       |         |
|                                                                 | Glass Bottle/Jar -other      |         |              | Wire                       |                                                                                                                                                      |                        |       |         |       |         |
|                                                                 | Glass Piece (unid.)          |         |              | Metal Piece (unid.)        |                                                                                                                                                      |                        |       |         |       |         |
|                                                                 | Other Glass (comment req.)   |         |              | Other Metal (comment req.) |                                                                                                                                                      |                        |       |         |       |         |
| Natural Debris                                                  | Marine Origin                |         | Count        | Est.*                      | Comment                                                                                                                                              | Terrestrial Vegetation |       | Count   | Est.* | Comment |
|                                                                 | Foliose Algae - not kelp     | 60g     |              | red algae                  | Leaves/Seed Pod                                                                                                                                      |                        |       |         |       |         |
|                                                                 | Gorgonian Sea Fan (dead)     |         |              |                            | Stick/Branch/Driftwood                                                                                                                               |                        |       |         |       |         |
|                                                                 | Kelp Holdfast                |         |              |                            | Other Terrest. (comment req.)                                                                                                                        |                        |       |         |       |         |
|                                                                 | Kelp Stipe/Blade             |         |              |                            | *For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column: |                        |       |         |       |         |
|                                                                 | Rock                         |         |              |                            | Low: L = 2-10                                                                                                                                        |                        |       |         |       |         |
|                                                                 | Seagrass                     |         |              |                            | Moderate: M = 11-100                                                                                                                                 |                        |       |         |       |         |
| Other Marine (comment req.)                                     |                              |         |              | High: H = > 100            |                                                                                                                                                      |                        |       |         |       |         |

Completed by: SR

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8/22

Arrival Date/Time: 8/28/13 1310 *Sed/Water*  
9/3/13 0839 *trawl*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |    |
|----------------------------------------------------------------------------------------------|----|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y  |
| Weighing scales calibrated?                                                                  | Y  |
| Vessel passed through 100 m radius of station?                                               | Y  |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y  |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y  |
| Trawl remained within 10% of target depth?                                                   | NA |
| PT sensor downloaded successfully?                                                           | Y  |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y  |
| Fish and/or invertebrates obtained in trawl?                                                 | Y  |
| Trawl debris captured and processed?                                                         | Y  |
| All fish positively identified (make note of any FIDs)?                                      | Y  |
| All invertebrates positively identified (make note of any FIDs)?                             | NA |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y  |

- 7m to 12m

- FIDs

8/22

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | Y  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | N  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | NA |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

- Halibut  
- Barred  
Sand  
Dass

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | Y  |
| DNA samples preserved with 95% ethanol?                                  | Y  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y  |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/3/13Print Name/Company: John Rudolph Amec

# STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID

B13-2058

Date

9/4/13

Arrival Time

(hh:mm)

1310

☒

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code

None

Wind

Speed (kts)

6.1

Direction (4)

W

Swell

Period (s)

0

Height (ft)

0

Direction (4)

0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 1320         | 32.66360             | -117.14407            | 4.1       | 15       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 1322         | 32.66237             | -117.14424            | 4.1       |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1331         | 32.65702             | -117.14384            | 3.7       |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1333         | 32.65672             | -117.14387            | 3.7       |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.); Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species           | N   | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more abundant spp. | FID or Voucher # | Weight (kg) |       |       | Photos (D, L, V)<br>Y/N |
|----|-------------------|-----|------------------------------------------------------------------------------------------------------------|------------------|-------------|-------|-------|-------------------------|
|    |                   |     |                                                                                                            |                  | Gross       | Tare  | Net   |                         |
| 1  | Yellowfin Croaker | 1   | 26                                                                                                         |                  | 0.445       | 0.095 | 0.35  | Y                       |
| 2  | Shiner Surf Perch | 2   | 7, 7                                                                                                       |                  | 0.115       | 0.095 | 0.02  |                         |
| 3  | Grey Smoothhound  | 3   | 36, 35, 34                                                                                                 |                  | 0.480       | 0.095 | 0.385 |                         |
| 4  | Spotted Sand Bass | 2   | 22, 18                                                                                                     |                  | 0.485       | 0.095 | 0.39  |                         |
| 5  | Barred Sand Bass  | 3   | 12, 12, 13                                                                                                 |                  | 0.225       | 0.095 | 0.13  |                         |
| 6  | CA Halibut        | 3   | 20, 19, 12                                                                                                 |                  | 0.345       | 0.085 | 0.25  |                         |
| 7  | Tonguefish        | 1   | 11                                                                                                         |                  | -           | -     | 0.014 |                         |
| 8  | Round Sting Ray   | 23  | See other sheet                                                                                            |                  | 5.7         | 0.74  | 4.96  |                         |
| 9  | Deep Body Anchovy | 82  |                                                                                                            |                  | 0.415       | 0.095 | 0.320 |                         |
| 10 | Slough Anchovy    | 52  |                                                                                                            |                  | 0.130       | 0.095 | 0.035 |                         |
| 11 | Queenfish         | 122 |                                                                                                            |                  | 0.740       | 0.095 | 0.645 | Y                       |
| 12 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 13 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 14 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 15 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 16 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 17 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 18 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 19 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 20 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 21 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 22 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 23 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 24 |                   |     |                                                                                                            |                  |             |       |       |                         |
| 25 |                   |     |                                                                                                            |                  |             |       |       |                         |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

performed on B13-8078

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8058

Page 1 of 1

Date: 9/4/13

Completed by: VR

Gross weight (kg) 0.740

Tare Weight (kg) 0.095

Net weight (kg) 0.645

| Size class | N         | Species: <u>Queenfish</u>                    | Anomalies |
|------------|-----------|----------------------------------------------|-----------|
| 1          |           |                                              |           |
| 2          |           |                                              |           |
| 3          |           |                                              |           |
| 4          | <u>1</u>  | <u>1</u>                                     |           |
| 5          | <u>7</u>  | <u>HHH 11</u>                                |           |
| 6          | <u>24</u> | <u>HHH HHH HHH HHH 1111</u>                  |           |
| 7          | <u>51</u> | <u>HHH HHH HHH HHH HHH HHH HHH HHH HHH 1</u> |           |
| 8          | <u>25</u> | <u>HHH HHH HHH HHH HHH</u>                   |           |
| 9          | <u>8</u>  | <u>HHH 111</u>                               |           |
| 10         | <u>6</u>  | <u>HHH 1</u>                                 |           |
| 11         |           |                                              |           |
| 12         |           |                                              |           |
| 13         |           |                                              |           |
| 14         |           |                                              |           |
| 15         |           |                                              |           |
| 16         |           |                                              |           |
| 17         |           |                                              |           |
| 18         |           |                                              |           |
| 19         |           |                                              |           |
| 20         |           |                                              |           |
| 21         |           |                                              |           |
| 22         |           |                                              |           |
| 23         |           |                                              |           |
| 24         |           |                                              |           |
| 25         |           |                                              |           |
| 26         |           |                                              |           |
| 27         |           |                                              |           |
| 28         |           |                                              |           |
| 29         |           |                                              |           |
| 30         |           |                                              |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

Total Abundance 122

QA Pass/Fail: (circle)

Yes

No

NA

(not available)

performed on B13-8058

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 3.9 + 1.8

Tare Weight (kg) 0.370 x 2

Net weight (kg) 4.96

| Size class | N        | Species: <u>Round Sting Ray</u> | Anomalies |
|------------|----------|---------------------------------|-----------|
| 1          |          |                                 |           |
| 2          |          |                                 |           |
| 3          |          |                                 |           |
| 4          |          |                                 |           |
| 5          |          |                                 |           |
| 6          |          |                                 |           |
| 7          |          |                                 |           |
| 8          |          |                                 |           |
| 9          |          |                                 |           |
| 10         |          |                                 |           |
| 11         |          |                                 |           |
| 12         |          |                                 |           |
| 13         |          |                                 |           |
| 14         |          |                                 |           |
| 15         |          |                                 |           |
| 16         |          |                                 |           |
| 17         |          |                                 |           |
| 18         |          |                                 |           |
| 19         |          |                                 |           |
| 20         |          |                                 |           |
| 21         | <u>1</u> | <u>12</u>                       |           |
| 22         |          |                                 |           |
| 23         |          |                                 |           |
| 24         | <u>5</u> | <u>13, 13, 13, 14, 13</u>       |           |
| 25         | <u>3</u> | <u>15, 14, 14</u>               |           |
| 26         | <u>6</u> | <u>14, 14, 15, 15, 15, 15</u>   |           |
| 27         | <u>2</u> | <u>15, 15</u>                   |           |
| 28         | <u>3</u> | <u>15, 16, 16</u>               |           |
| 29         | <u>1</u> | <u>17,</u>                      |           |
| 30         |          |                                 |           |

32  
83  
18  
18  
Anomaly codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 23

Comments: Number in right column is width.

QA Pass/Fail: (circle)

Yes

No

NA (not available)

performed on B13-8078



# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 0.130

Tare Weight (kg) 0.095

Net weight (kg) 0.035

| Size class | N         | Species: <u>Slough Anchovy</u>       | Anomalies |
|------------|-----------|--------------------------------------|-----------|
| 1          |           |                                      |           |
| 2          |           |                                      |           |
| 3          | <u>38</u> | <u>                             </u> |           |
| 4          | <u>6</u>  | <u>    1</u>                         |           |
| 5          |           |                                      |           |
| 6          | <u>5</u>  | <u>   </u>                           |           |
| 7          | <u>3</u>  | <u>   </u>                           |           |
| 8          |           |                                      |           |
| 9          |           |                                      |           |
| 10         |           |                                      |           |
| 11         |           |                                      |           |
| 12         |           |                                      |           |
| 13         |           |                                      |           |
| 14         |           |                                      |           |
| 15         |           |                                      |           |
| 16         |           |                                      |           |
| 17         |           |                                      |           |
| 18         |           |                                      |           |
| 19         |           |                                      |           |
| 20         |           |                                      |           |
| 21         |           |                                      |           |
| 22         |           |                                      |           |
| 23         |           |                                      |           |
| 24         |           |                                      |           |
| 25         |           |                                      |           |
| 26         |           |                                      |           |
| 27         |           |                                      |           |
| 28         |           |                                      |           |
| 29         |           |                                      |           |
| 30         |           |                                      |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 52

Comments:

QA Pass/Fail: (circle)

Yes

No

NA

(not available)

- performed on B13-8078

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 0.415

Tare Weight (kg) 0.095

Net weight (kg) 0.32

| Size class | N         | Species: <u>Deep Body Anchovy</u> | Anomalies |
|------------|-----------|-----------------------------------|-----------|
| 1          |           |                                   |           |
| 2          |           |                                   |           |
| 3          |           |                                   |           |
| 4          |           |                                   |           |
| 5          |           |                                   |           |
| 6          | <u>18</u> | <u>     </u>                      |           |
| 7          | <u>49</u> | <u>     </u>                      |           |
| 8          | <u>11</u> | <u>     </u>                      |           |
| 9          | <u>1</u>  | <u>1</u>                          |           |
| 10         |           |                                   |           |
| 11         | <u>2</u>  | <u>11</u>                         |           |
| 12         | <u>1</u>  | <u>1</u>                          |           |
| 13         |           |                                   |           |
| 14         |           |                                   |           |
| 15         |           |                                   |           |
| 16         |           |                                   |           |
| 17         |           |                                   |           |
| 18         |           |                                   |           |
| 19         |           |                                   |           |
| 20         |           |                                   |           |
| 21         |           |                                   |           |
| 22         |           |                                   |           |
| 23         |           |                                   |           |
| 24         |           |                                   |           |
| 25         |           |                                   |           |
| 26         |           |                                   |           |
| 27         |           |                                   |           |
| 28         |           |                                   |           |
| 29         |           |                                   |           |
| 30         |           |                                   |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 82

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

performed on B13-8078

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: Site 8058 SD Bay

Page 1 of 1

Date: 9-4-13

Completed by: C. Strassberg

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                           | N  | Comments<br>(or Anomalies)   | FID or<br>Voucher<br># | Weight (kg) |             |      | Photos<br>(D, L, V) |
|----|-----------------------------------|----|------------------------------|------------------------|-------------|-------------|------|---------------------|
|    |                                   |    |                              |                        | Gross       | Tare<br>Y/N | Net  |                     |
| 1  | <i>Portunus xantusii</i> *        | 1  | 2.5cm width total            | -                      | Lo.1        | -           | Lo.1 | Y                   |
| 2  | <i>Musculista senhousia</i> *     | 14 | Small 1-2.5cm                | -                      | Lo.1        | -           | Lo.1 |                     |
| 3  | <i>Pyromaira/Decorator crab</i> * | 4  | Same as prior sites for FID  | -                      | Lo.1        | -           | Lo.1 |                     |
| 4  | Orange porous sponge *            | 4  | Same as site 8060            | -                      | Lo.1        | -           | Lo.1 |                     |
| 5  | Small finger sponge *             | 2  | 2.1cm indiv. fingers clumped | FID/Voucher            | Lo.1        | -           | Lo.1 | Y                   |
| 6  |                                   |    |                              |                        |             |             |      |                     |
| 7  |                                   |    |                              |                        |             |             |      |                     |
| 8  |                                   |    |                              |                        |             |             |      |                     |
| 9  |                                   |    |                              |                        |             |             |      |                     |
| 10 |                                   |    |                              |                        |             |             |      |                     |
| 11 |                                   |    |                              |                        |             |             |      |                     |
| 12 |                                   |    |                              |                        |             |             |      |                     |
| 13 |                                   |    |                              |                        |             |             |      |                     |
| 14 |                                   |    |                              |                        |             |             |      |                     |
| 15 |                                   |    |                              |                        |             |             |      |                     |
| 16 |                                   |    |                              |                        |             |             |      |                     |
| 17 |                                   |    |                              |                        |             |             |      |                     |
| 18 |                                   |    |                              |                        |             |             |      |                     |
| 19 |                                   |    |                              |                        |             |             |      |                     |
| 20 |                                   |    |                              |                        |             |             |      |                     |
| 21 |                                   |    |                              |                        |             |             |      |                     |
| 22 |                                   |    |                              |                        |             |             |      |                     |
| 23 |                                   |    |                              |                        |             |             |      |                     |
| 24 |                                   |    |                              |                        |             |             |      |                     |
| 25 |                                   |    |                              |                        |             |             |      |                     |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: \* All inverts mixed in / associated with the zoobryon - zoobryon  
1 stalked tunicate - photo

zoobryon - 3750g - 375g = 3375g

Red filamentous algae - 250g - 33g = 217g

QA Pass/Fail: (circle) Yes No NA (not available)

# BIGH 13 TRAWL DEBRIS FORM

Agency: RLMP

Page 1 of 1

Station: B13-8058 Trawl #: 1

Date: 9/4/13

CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

| Anthropogenic Debris -<br>include Brand Names in Comments if known | Plastic |         | Comment                    | Misc. Items/Pieces |       | Comment |
|--------------------------------------------------------------------|---------|---------|----------------------------|--------------------|-------|---------|
|                                                                    | Count   |         |                            | Count              |       |         |
| Bag                                                                |         |         | Boat/Ship/Engine part      |                    |       |         |
| Bandaïd                                                            |         |         | Clothing                   |                    |       |         |
| Balloon (mylar/latex)/Ribbon                                       |         |         | Concrete/Asphalt           |                    |       |         |
| Bottle                                                             |         |         | Fiberglass                 |                    |       |         |
| Buoy                                                               |         |         | Food                       |                    |       |         |
| Cap/Lid                                                            |         |         | Leather                    |                    |       |         |
| Cigarette box/wrapper                                              |         |         | Lumber                     |                    |       |         |
| Cup                                                                |         |         | Paper                      |                    |       |         |
| Filmstrip (movie)                                                  |         |         | Rag/Cloth                  |                    |       |         |
| Fishing Line/Net                                                   |         |         | Rubber                     |                    |       |         |
| Food Bag / Wrapper                                                 |         |         | Shoe                       |                    |       |         |
| Polypropylene Rope                                                 |         |         | Tape                       |                    |       |         |
| Straw                                                              |         |         | Tire                       |                    |       |         |
| Toy                                                                |         |         | Other Misc. (comment req.) |                    |       |         |
| Utensil                                                            |         |         |                            |                    |       |         |
| Plastic Piece (unid.)                                              |         |         |                            |                    |       |         |
| Other Plastic (comment req.)                                       |         |         |                            |                    |       |         |
| Glass                                                              | Count   | Comment | Metal                      |                    | Count | Comment |
|                                                                    |         |         | Drink Can                  |                    |       |         |
|                                                                    |         |         | Can - other                |                    |       |         |
|                                                                    |         |         | Can Pull-tab               |                    |       |         |
|                                                                    |         |         | Fishing Gear               |                    |       |         |
|                                                                    |         |         | Wire                       |                    |       |         |
| Beer Bottle                                                        |         |         | Metal Piece (unid.)        |                    |       |         |
| Glass Bottle/Jar -other                                            |         |         | Other Metal (comment req.) |                    |       |         |
| Glass Piece (unid.)                                                |         |         |                            |                    |       |         |
| Other Glass (comment req.)                                         |         |         |                            |                    |       |         |

| Natural Debris              | Marine Origin |  | Est.*              | Comment    | Terrestrial Vegetation |  | Est.* | Comment |
|-----------------------------|---------------|--|--------------------|------------|------------------------|--|-------|---------|
|                             | Count         |  |                    |            | Count                  |  |       |         |
| Foliose Algae - not kelp    |               |  | L 0.250<br>+ 0.033 | Red Algae  |                        |  |       |         |
| Gorgonian Sea Fan (dead)    |               |  |                    |            |                        |  |       |         |
| Kelp Holdfast               |               |  |                    |            |                        |  |       |         |
| Kelp Stipe/Blade            |               |  |                    |            |                        |  |       |         |
| Rock                        |               |  |                    |            |                        |  |       |         |
| Seagrass                    |               |  |                    |            |                        |  |       |         |
| Other Marine (comment req.) |               |  | M                  | Zoobrytion |                        |  |       |         |

gross - 3.7  
tare - 0.370  
net - 3.33 kg

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: OR

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8058

Arrival Date/Time: 8/30/13 0600

*sed/water  
trawl*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | Y  |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | NA |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FID

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | NA |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | NA |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: John Rudolph Date/Time: 9/4/13 1700

Print Name/Company: John Rudolph AMEC

## STATION OCCUPATION

BIGHT'13

Agency Code RLAMP

Weather

Clear ☒Rain ☐Overcast ☐Thunderstorm ☐Partly cloudy ☐Fog ☐Drizzle ☐

Sea State

Calm ☒Choppy ☐Rough ☐

Nav Type

DGPS ☒GPS ☐Station ID D13-8060Date 9/4/13Arrival Time 0932

(hh:mm)



Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 5.1Direction (4) W

Swell

Period (s) 0Height (ft) 0Direction (4) 0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m)  | Wire Out  | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|------------|-----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
|              | Net Over    | <u>0935</u>  | <u>32.66715</u>      | <u>-117.15137</u>     | <u>3.5</u> | <u>18</u> |                        | <u>None</u>         | <u>Y</u>              | <u>Y</u>                  | <u>Y</u>               |
|              | Start Trawl | <u>0945</u>  | <u>32.66620</u>      | <u>-117.15078</u>     | <u>4.3</u> |           |                        |                     |                       |                           |                        |
|              | End Trawl   | <u>0953</u>  | <u>32.66241</u>      | <u>-117.14806</u>     | <u>5.0</u> |           |                        |                     |                       |                           |                        |
|              | Net on Deck | <u>0955</u>  | <u>32.66218</u>      | <u>-117.14793</u>     | <u>5.0</u> |           |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |            |           |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |            |           |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)



# BIGHT '13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-5060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more abundant spp. | FID or Voucher # | Weight (kg) |       |       | Photos (D, L, V)<br>Y/N |
|----|------------------------|----|------------------------------------------------------------------------------------------------------------|------------------|-------------|-------|-------|-------------------------|
|    |                        |    |                                                                                                            |                  | Gross       | Tare  | Net   |                         |
| 1  | Bat Ray                | 1  | L 62<br>W 37                                                                                               |                  | —           | —     | 0.95  | Y                       |
| 2  | Grey Smoothhound       | 1  | 37                                                                                                         |                  | —           | —     | 0.140 |                         |
| 3  | Speckledfin Midshipman | 1  | 16                                                                                                         |                  | —           | —     | 0.037 |                         |
| 4  | Black Croaker          | 1  | 22                                                                                                         |                  | 0.380       | 0.095 | 0.285 |                         |
| 5  | CA Halibut             | 3  | 26, 15, 15                                                                                                 |                  | 0.510       | 0.095 | 0.415 |                         |
| 6  | Barred Sand Bass       | 6  | 12, 10, 14, 11, 13, 15                                                                                     |                  | 0.370       | 0.095 | 0.275 |                         |
| 7  | Spotted Sand Bass      | 4  | 21, 19, 19, 19                                                                                             |                  | 0.810       | 0.095 | 0.715 |                         |
| 8  | Queenfish              | 60 | See other sheet                                                                                            |                  | 0.405       | 0.095 | 0.31  |                         |
| 9  | Round Ray Anchovy      | 45 |                                                                                                            |                  | 13.4        | 1.11  | 12.29 |                         |
| 10 | Deep Body Anchovy      | 29 |                                                                                                            |                  | 0.205       | 0.095 | 0.11  |                         |
| 11 | Slough Anchovy         | 50 |                                                                                                            |                  | 0.115       | 0.095 | 0.02  |                         |
| 12 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 13 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 14 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 15 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 16 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 17 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 18 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 19 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 20 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 21 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 22 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 23 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 24 |                        |    |                                                                                                            |                  |             |       |       |                         |
| 25 |                        |    |                                                                                                            |                  |             |       |       |                         |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle)

Yes

No

(NA) (not available) - performed at B13-5078

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 0.405

Tare Weight (kg) 0.095

Net weight (kg) 0.31

| Size class | N         | Species: <u>Queenfish</u> | Anomalies |
|------------|-----------|---------------------------|-----------|
| 1          |           |                           |           |
| 2          |           |                           |           |
| 3          |           |                           |           |
| 4          |           |                           |           |
| 5          | <u>7</u>  | <u>HHH II</u>             |           |
| 6          | <u>18</u> | <u>HHH HHH HHH III</u>    |           |
| 7          | <u>17</u> | <u>HHH HHH HHH II</u>     |           |
| 8          | <u>7</u>  | <u>HHH II</u>             |           |
| 9          | <u>7</u>  | <u>HHH II</u>             |           |
| 10         | <u>3</u>  | <u>III</u>                |           |
| 11         | <u>1</u>  | <u>I</u>                  |           |
| 12         |           |                           |           |
| 13         |           |                           |           |
| 14         |           |                           |           |
| 15         |           |                           |           |
| 16         |           |                           |           |
| 17         |           |                           |           |
| 18         |           |                           |           |
| 19         |           |                           |           |
| 20         |           |                           |           |
| 21         |           |                           |           |
| 22         |           |                           |           |
| 23         |           |                           |           |
| 24         |           |                           |           |
| 25         |           |                           |           |
| 26         |           |                           |           |
| 27         |           |                           |           |
| 28         |           |                           |           |
| 29         |           |                           |           |
| 30         |           |                           |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 60

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

performed at B13-8078

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 13.4

Tare Weight (kg) 1.11

Net weight (kg) 12.29

| Size class | N        | Species: <u>Round Sting Ray</u>   | Anomalies |
|------------|----------|-----------------------------------|-----------|
| 1          |          |                                   |           |
| 2          |          |                                   |           |
| 3          |          |                                   |           |
| 4          |          |                                   |           |
| 5          |          |                                   |           |
| 6          |          |                                   |           |
| 7          |          |                                   |           |
| 8          |          |                                   |           |
| 9          |          |                                   |           |
| 10         |          |                                   |           |
| 11         |          |                                   |           |
| 12         |          |                                   |           |
| 13         |          |                                   |           |
| 14         |          |                                   |           |
| 15         |          |                                   |           |
| 16         |          |                                   |           |
| 17         |          |                                   |           |
| 18         | <u>1</u> | <u>11</u>                         |           |
| 19         |          |                                   |           |
| 20         |          |                                   |           |
| 21         | <u>1</u> | <u>12</u>                         |           |
| 22         |          |                                   |           |
| 23         |          |                                   |           |
| 24         | <u>4</u> | <u>13, 13, 14, 13</u>             |           |
| 25         | <u>7</u> | <u>14, 13, 13, 14, 14, 14, 15</u> |           |
| 26         | <u>4</u> | <u>14, 15, 14, 14</u>             |           |
| 27         | <u>1</u> | <u>15</u>                         |           |
| 28         | <u>3</u> | <u>16, 15, 16</u>                 |           |
| 29         | <u>3</u> | <u>16, 16, 17</u>                 |           |
| 30         | <u>6</u> | <u>17, 18, 16, 16, 17, 17</u>     |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leishmaniasis, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences of individual put "-" and #

Total Abundance 45

Comments: Numbers in right column are widths.

Batch Wt's. -  $4.55 + 4.60 + 4.25 = 13.4$  kg

QA Pass/Fail: (circle) Yes No (NA) (not available)

Tare  $0.370 \times 3 = 1.11$  kg

performed at B13-8078

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 0.205

Tare Weight (kg) 0.095

Net weight (kg) 0.11

| Size class | N         | Species: <u>Deep body Anchovy</u> | Anomalies |
|------------|-----------|-----------------------------------|-----------|
| 1          |           |                                   |           |
| 2          |           |                                   |           |
| 3          |           |                                   |           |
| 4          |           |                                   |           |
| 5          |           |                                   |           |
| 6          | <u>3</u>  | <u>   </u>                        |           |
| 7          | <u>20</u> | <u>     </u>                      |           |
| 8          | <u>5</u>  | <u>   </u>                        |           |
| 9          |           |                                   |           |
| 10         |           |                                   |           |
| 11         | <u>1</u>  | <u> </u>                          |           |
| 12         |           |                                   |           |
| 13         |           |                                   |           |
| 14         |           |                                   |           |
| 15         |           |                                   |           |
| 16         |           |                                   |           |
| 17         |           |                                   |           |
| 18         |           |                                   |           |
| 19         |           |                                   |           |
| 20         |           |                                   |           |
| 21         |           |                                   |           |
| 22         |           |                                   |           |
| 23         |           |                                   |           |
| 24         |           |                                   |           |
| 25         |           |                                   |           |
| 26         |           |                                   |           |
| 27         |           |                                   |           |
| 28         |           |                                   |           |
| 29         |           |                                   |           |
| 30         |           |                                   |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 29

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available) - performed at B13-8075

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Gross weight (kg) 0.115

Tare Weight (kg) 0.095

Net weight (kg) 0.02

| Size class | N         | Species: <u>Slough Anchovy</u> | Anomalies |
|------------|-----------|--------------------------------|-----------|
| 1          |           |                                |           |
| 2          |           |                                |           |
| 3          | <u>25</u> | <u>     </u>                   |           |
| 4          | <u>22</u> | <u>     </u>                   |           |
| 5          |           |                                |           |
| 6          | <u>1</u>  | <u> </u>                       |           |
| 7          | <u>2</u>  | <u>  </u>                      |           |
| 8          |           |                                |           |
| 9          |           |                                |           |
| 10         |           |                                |           |
| 11         |           |                                |           |
| 12         |           |                                |           |
| 13         |           |                                |           |
| 14         |           |                                |           |
| 15         |           |                                |           |
| 16         |           |                                |           |
| 17         |           |                                |           |
| 18         |           |                                |           |
| 19         |           |                                |           |
| 20         |           |                                |           |
| 21         |           |                                |           |
| 22         |           |                                |           |
| 23         |           |                                |           |
| 24         |           |                                |           |
| 25         |           |                                |           |
| 26         |           |                                |           |
| 27         |           |                                |           |
| 28         |           |                                |           |
| 29         |           |                                |           |
| 30         |           |                                |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

Total Abundance 50

QA Pass/Fail: (circle)

Yes

No

NA (not available)

- performed at B13-8078

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

3.85  
0.37  
2.28

Station: B13-F060

Page 1 of 1

Date: 9/4/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                     | N  | Comments<br>(or Anomalies)  | FID or<br>Voucher<br># | Weight (kg) § |             |      | Photos<br>(D, L, V)<br>Y/N |
|----|-----------------------------|----|-----------------------------|------------------------|---------------|-------------|------|----------------------------|
|    |                             |    |                             |                        | Gross         | Tare<br>Y/N | Net  |                            |
| 1  | <i>Bulla gouldiana</i>      | 3  | none                        |                        | 20.1          | 20.1        | 20.1 | Y                          |
| 2  | <i>Musculista senhousia</i> | 57 | none                        |                        | 20.1          | 20.1        | 20.1 | Y                          |
| 3  | Mud Snail                   | 3  | orange/deep blue striations | FID                    | 20.1          | 20.1        | 20.1 | Y                          |
| 4  | <i>Pyramalia/decorator</i>  | 4  | FID on previous trawl       |                        | 20.1          | 20.1        | 20.1 | Y                          |
| 5  | <i>Metacarcinus?</i>        | 1  | light + tipped claws        | FID                    | 20.1          | 20.1        | 20.1 | Y                          |
| 6  | Large brain sponge          | 1  | pulled out large + in net   | FID/DNA                | 3.65kg        | 0.37        | 3.28 | Y                          |
| 7  | Porous orange sponge        | 4  | same as previous site       |                        | 20.1          | 20.1        | 20.1 | Y                          |
| 8  |                             |    |                             |                        |               |             |      |                            |
| 9  |                             |    |                             |                        |               |             |      |                            |
| 10 |                             |    |                             |                        |               |             |      |                            |
| 11 |                             |    |                             |                        |               |             |      |                            |
| 12 |                             |    |                             |                        |               |             |      |                            |
| 13 |                             |    |                             |                        |               |             |      |                            |
| 14 |                             |    |                             |                        |               |             |      |                            |
| 15 |                             |    |                             |                        |               |             |      |                            |
| 16 |                             |    |                             |                        |               |             |      |                            |
| 17 |                             |    |                             |                        |               |             |      |                            |
| 18 |                             |    |                             |                        |               |             |      |                            |
| 19 |                             |    |                             |                        |               |             |      |                            |
| 20 |                             |    |                             |                        |               |             |      |                            |
| 21 |                             |    |                             |                        |               |             |      |                            |
| 22 |                             |    |                             |                        |               |             |      |                            |
| 23 |                             |    |                             |                        |               |             |      |                            |
| 24 |                             |    |                             |                        |               |             |      |                            |
| 25 |                             |    |                             |                        |               |             |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: all organisms except brain sponge pulled out of  
large amount of zoobryon

QA Pass/Fail: (circle) Yes No NA (not available)

# BIGH 13 TRAWL DEBRIS FORM

Agency: RHMP

Page 1 of 1

Station: B13-8060 Trawl #: 1

Date: 9/4/13

CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

| Anthropogenic Debris - include Brand Names in Comments if known | Plastic                    |                            |                            | Misc. Items/Pieces |         |  |
|-----------------------------------------------------------------|----------------------------|----------------------------|----------------------------|--------------------|---------|--|
|                                                                 | Count                      | Comment                    | Count                      | Comment            |         |  |
| Bag                                                             |                            |                            | Boat/Ship/Engine part      |                    |         |  |
| Bandaaid                                                        |                            |                            | Clothing                   |                    |         |  |
| Balloon (mylar/latex)/Ribbon                                    |                            |                            | Concrete/Asphalt           |                    |         |  |
| Bottle                                                          |                            |                            | Fiberglass                 |                    |         |  |
| Buoy                                                            |                            |                            | Food                       |                    |         |  |
| Cap/Lid                                                         |                            |                            | Leather                    |                    |         |  |
| Cigarette box/wrapper                                           |                            |                            | Lumber                     |                    |         |  |
| Cup                                                             |                            |                            | Paper                      |                    |         |  |
| Filmstrip (movie)                                               |                            |                            | Rag/Cloth                  |                    |         |  |
| Fishing Line/Net                                                |                            |                            | Rubber                     |                    |         |  |
| Food Bag / Wrapper                                              |                            |                            | Shoe                       |                    |         |  |
| Polypropylene Rope                                              |                            |                            | Tape                       |                    |         |  |
| Straw                                                           |                            |                            | Tire                       |                    |         |  |
| Toy                                                             |                            |                            | Other Misc. (comment req.) |                    |         |  |
| Utensil                                                         |                            |                            |                            |                    |         |  |
| Plastic Piece (unid.)                                           |                            |                            |                            |                    |         |  |
| Other Plastic (comment req.)                                    |                            |                            |                            |                    |         |  |
| Glass                                                           | Count                      | Comment                    | Metal                      | Count              | Comment |  |
|                                                                 | Beer Bottle                |                            |                            | Drink Can          |         |  |
|                                                                 | Glass Bottle/Jar -other    |                            |                            | Can - other        |         |  |
|                                                                 | Glass Piece (unid.)        |                            |                            | Can Pull-tab       |         |  |
|                                                                 | Other Glass (comment req.) |                            |                            | Fishing Gear       |         |  |
|                                                                 |                            |                            |                            | Wire               |         |  |
|                                                                 |                            | Metal Piece (unid.)        |                            |                    |         |  |
|                                                                 |                            | Other Metal (comment req.) |                            |                    |         |  |

| Natural Debris              | Marine Origin |       |                                               | Terrestrial Vegetation        |       |         |
|-----------------------------|---------------|-------|-----------------------------------------------|-------------------------------|-------|---------|
|                             | Count         | Est.* | Comment                                       | Count                         | Est.* | Comment |
| Foliose Algae - not kelp    |               | L     | ulva lachryosa gross: 640g net 335g = 0.031kg | Leaves/Seed Pod               |       |         |
| Gorgonian Sea Fan (dead)    |               |       |                                               | Stick/Branch/Driftwood        |       |         |
| Kelp Holdfast               |               |       |                                               | Other Terrest. (comment req.) |       |         |
| Kelp Stipe/Blade            |               |       |                                               |                               |       |         |
| Rock                        |               |       |                                               |                               |       |         |
| Seagrass                    |               |       |                                               |                               |       |         |
| Other Marine (comment req.) |               | M     | Zoobrytrian                                   |                               |       |         |

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: TH

370g / 110g

gross: 4.1 + 2.7 + 2.3 = 9.1kg  
tare net 0.370kg x 3 = 1.11kg

17.940kg

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8060

Arrival Date/Time: 8/27/13 1040 *sed/water*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |



## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FIDs

8060

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/4/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph AMEC

# STATION OCCUPATION

BIGHT'13

Agency Code RLHMP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID 813-8078

Date 9/4/13

Arrival Time 0716  
(hh:mm)



Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 7.1

Direction (4) W

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmmm) | Longitude (DD°MM.mmmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|-----------------------|------------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 0722         | 32.68891              | -117.15725             | 12.8      | 50       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 0724         | 32.68733              | -117.14906             | 12.9      |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 0733         | 32.68345              | -117.14392             | 12.8      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 0736         | 32.68273              | -117.14329             | 12.8      |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                       |                        |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

## BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-5075

Page 7 of 7

Date: 9/4/13

Completed by: JR

|                                           | Yes                      | No                                  |
|-------------------------------------------|--------------------------|-------------------------------------|
| Data from Short/Long Trawl @ >300 m Depth | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Species |                      | N  | Std Length Size Class (cm)<br>Use for up to 10 Individuals.<br>Use Size Class sheet for more<br>abundant spp. | FID or<br>Vouch<br>er # | Weight (kg) |       |       | Photos<br>(D, L, V) |   |
|---------|----------------------|----|---------------------------------------------------------------------------------------------------------------|-------------------------|-------------|-------|-------|---------------------|---|
|         |                      |    |                                                                                                               |                         | Gross       | Tare  | Net   | Y/N                 |   |
| 1       | Diamond Turbot       | 2  | 23, 20                                                                                                        |                         | 0.550       | 0.095 | 0.455 | Y                   |   |
| 2       | Spotted Turbot       | 2  | 13, 13                                                                                                        |                         | 0.218       | 0.095 | 0.123 |                     |   |
| 3       | CA Lizardfish        | 8  | 15, 14, 13, 13, 13, 14, 13, 14                                                                                |                         | 0.235       | 0.095 | 0.14  |                     |   |
| 4       | Tongrefish           | 5  | 10, 11, 11, 11, 12                                                                                            |                         | 0.165       | 0.095 | 0.07  |                     |   |
| 5       | Specklefin Mudsipper | 2  | 6, 5                                                                                                          |                         | -           | -     | 0.002 |                     |   |
| 6       | Black Croaker        | 3  | 21, 18, 16                                                                                                    |                         | 0.1545      | 0.095 | 0.45  |                     |   |
| 7       | Barred Sand Bass     | 2  | 13, 14                                                                                                        |                         | 0.245       | 0.095 | 0.15  |                     |   |
| 8       | Round Sting Ray      | 4  | L 26, 25, 26, 23<br>W 15, 14, 15, 13                                                                          |                         | 1.05        | 0.370 | 0.68  |                     |   |
| 9       | CA Halibut           | 6  | 13, 17, 19, 13, 33, 39                                                                                        |                         | 2.10        | 0.370 | 1.73  |                     |   |
| 10      | Spotted Sand Bass    | 24 | 18, 17, 20, 26, 19, 18, 18, 22, 22, 17, 20,<br>17, 17, 17, 16, 16, 17, 29, 26, 18, 21,<br>22, 17, 21          |                         | 4.85        | 0.370 | 4.48  |                     | ✓ |
| 11      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 12      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 13      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 14      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 15      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 16      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 17      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 18      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 19      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 20      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 21      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 22      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 23      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 24      |                      |    |                                                                                                               |                         |             |       |       |                     |   |
| 25      |                      |    |                                                                                                               |                         |             |       |       |                     |   |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (*describe in Comments*), M = Monogeneans, O = other anomaly (*describe in Comments*), P = other external parasite (*describe in Comments*), T = tumor, multiple occurrences on individual put "—" and #, FID = *specimen(s) collected for further identification*, #V = *Number of specimens collected as species vouchers*

Comments: ~~Spotted Sand Bass~~ batch wts:  
tare 0.270x

QA Pass/Fail: (circle) Yes No NA (not available)

Yes

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: VR

Gross weight (kg) 4.85 Tare Weight (kg) 0.370 Net weight (kg) 4.48

| Size class | N            | Species: <u>Spotted Sand Bass</u> | Anomalies |
|------------|--------------|-----------------------------------|-----------|
| 1          |              |                                   |           |
| 2          |              |                                   |           |
| 3          |              |                                   |           |
| 4          |              |                                   |           |
| 5          |              |                                   |           |
| 6          |              |                                   |           |
| 7          |              |                                   |           |
| 8          |              |                                   |           |
| 9          |              |                                   |           |
| 10         |              |                                   |           |
| 11         |              |                                   |           |
| 12         |              |                                   |           |
| 13         |              |                                   |           |
| 14         |              |                                   |           |
| 15         |              |                                   |           |
| 16         | <u>2</u>     | <u>II</u>                         |           |
| 17         | <u>SR 87</u> | <u>HHH II</u>                     |           |
| 18         | <u>4</u>     | <u>IIII</u>                       |           |
| 19         | <u>1</u>     | <u>I</u>                          |           |
| 20         | <u>2</u>     | <u>II</u>                         |           |
| 21         | <u>2</u>     | <u>II</u>                         |           |
| 22         | <u>3</u>     | <u>III</u>                        |           |
| 23         |              |                                   |           |
| 24         |              |                                   |           |
| 25         |              |                                   |           |
| 26         | <u>2</u>     | <u>II</u>                         |           |
| 27         |              |                                   |           |
| 28         |              |                                   |           |
| 29         | <u>1</u>     | <u>I</u>                          |           |
| 30         |              |                                   |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

Total Abundance 24

QA Pass/Fail: (circle) Yes No NA (not available)

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: D13-8078Trawl #: 1Agency: RHMPDate: 9/4/13Previously Measured by: LHRe-Measured by: VROriginal Gross weight (kg) 4.85 Tare Weight (kg) 0.705 <sup>white bucket</sup> Net weight (kg) 4.48QC Re-weigh weight (kg) 4.85 Tare Weight (kg) 0.370 kg Net weight (kg) 4.48

| Size Class | Original Species: <i>Spotted Sand Bass</i> |         |               | Anomalies |
|------------|--------------------------------------------|---------|---------------|-----------|
|            | QC Re-ID: <i>Spotted Sand Bass</i>         |         |               |           |
|            | Re-ID Count                                | +/-2 mm | Tweener count |           |
| 1          |                                            | 1-2     |               |           |
| 2          |                                            | 2-3     |               |           |
| 3          |                                            | 3-4     |               |           |
| 4          |                                            | 4-5     |               |           |
| 5          |                                            | 5-6     |               |           |
| 6          |                                            | 6-7     |               |           |
| 7          |                                            | 7-8     |               |           |
| 8          |                                            | 8-9     |               |           |
| 9          |                                            | 9-10    |               |           |
| 10         |                                            | 10-11   |               |           |
| 11         |                                            | 11-12   |               |           |
| 12         |                                            | 12-13   |               |           |
| 13         |                                            | 13-14   |               |           |
| 14         |                                            | 14-15   |               |           |
| 15         |                                            | 15-16   | 1             |           |
| 16         | 1                                          | 16-17   | 11            |           |
| 17         | 1111                                       | 17-18   | 1             |           |
| 18         | 1111                                       | 18-19   | 1             |           |
| 19         | 1                                          | 19-20   | 1             |           |
| 20         |                                            | 20-21   | 1             |           |
| 21         | 11                                         | 21-22   | 11            |           |
| 22         | 1                                          | 22-23   |               |           |
| 23         |                                            | 23-24   |               |           |
| 24         |                                            | 24-25   |               |           |
| 25         |                                            | 25-26   | 1             |           |
| 26         | 1                                          | 26-27   |               |           |
| 27         |                                            | 27-28   | 1             |           |
| 28         |                                            | 28-29   |               |           |
| Total      | 13                                         | Total   | 11            |           |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass | Fail | Initials |
|--------------------------------|------|-----|------------------|------|------|----------|
|                                |      |     | Identification   | ✓    |      |          |
|                                |      |     | Count            | ✓    |      |          |
|                                |      |     | Length           | ✓    |      |          |
|                                |      |     | Biomass          | ✓    |      |          |
| Other species Weight (kg)      |      |     | Pathology        | ✓    |      |          |
| Gross                          | Tare | Net | Notes:           |      |      |          |
|                                |      |     |                  |      |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put “-“and #

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: B13-8078 Trawl #: 1 Agency: RHMPDate: 9/4/13 Previously Measured by: LHRe-Measured by: JR

Original Gross weight (kg) 0.235 Tare Weight (kg) 0.095 <sup>(blue)</sup> Net weight (kg) 0.14  
 QC Re-weight weight (kg) 0.240 Tare Weight (kg) 0.095 Net weight (kg) 0.145

| Size Class | Original Species: CA Lizardfish |         |               | Anomalies |
|------------|---------------------------------|---------|---------------|-----------|
|            | QC Re-ID: CA Lizardfish         |         |               |           |
|            | Re-ID Count                     | +/-2 mm | Tweener count |           |
| 1          |                                 | 1-2     |               |           |
| 2          |                                 | 2-3     |               |           |
| 3          |                                 | 3-4     |               |           |
| 4          |                                 | 4-5     |               |           |
| 5          |                                 | 5-6     |               |           |
| 6          |                                 | 6-7     |               |           |
| 7          |                                 | 7-8     |               |           |
| 8          |                                 | 8-9     |               |           |
| 9          |                                 | 9-10    |               |           |
| 10         |                                 | 10-11   |               |           |
| 11         | 1                               | 11-12   |               |           |
| 12         |                                 | 12-13   | 111           |           |
| 13         | 1                               | 13-14   | 1             |           |
| 14         | 1                               | 14-15   |               |           |
| 15         |                                 | 15-16   | 1             |           |
| 16         |                                 | 16-17   |               |           |
| 17         |                                 | 17-18   |               |           |
| 18         |                                 | 18-19   |               |           |
| 19         |                                 | 19-20   |               |           |
| 20         |                                 | 20-21   |               |           |
| 21         |                                 | 21-22   |               |           |
| 22         |                                 | 22-23   |               |           |
| 23         |                                 | 23-24   |               |           |
| 24         |                                 | 24-25   |               |           |
| 25         |                                 | 25-26   |               |           |
| 26         |                                 | 26-27   |               |           |
| 27         |                                 | 27-28   |               |           |
| 28         |                                 | 28-29   |               |           |
| Total      | 3                               | Total   | 5             |           |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass     | Fail | Initials |
|--------------------------------|------|-----|------------------|----------|------|----------|
|                                |      |     | Identification   | <u>✓</u> |      |          |
|                                |      |     | Count            | <u>✓</u> |      |          |
|                                |      |     | Length           | <u>✓</u> |      |          |
|                                |      |     | Biomass          | <u>✓</u> |      |          |
| Other species Weight (kg)      |      |     | Pathology        | <u>✓</u> |      |          |
| Gross                          | Tare | Net | Notes:           |          |      |          |
|                                |      |     |                  |          |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8078

Page 1 of 1

Date: 9/4/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                     | N | Comments<br>(or Anomalies)                               | FID or<br>Voucher<br># | Weight (kg) |             |      | Photos<br>(D, L, V)<br>Y/N |
|----|-----------------------------|---|----------------------------------------------------------|------------------------|-------------|-------------|------|----------------------------|
|    |                             |   |                                                          |                        | Gross       | True<br>Y/N | Net  |                            |
| 1  | Acanthoptilum sp.           | 3 | None                                                     |                        | 20.1        | 20.1        | 20.1 | Y                          |
| 2  | Brown/Yellow Sponge         |   | Firm<br>Same as previous stations                        |                        | 2150        | 370         | 9540 | Y                          |
| 3  | Brown soft branched sponge  |   | Same as previous stations                                | FID-DNA                | 20.1        | 20.1        | 20.1 | Y                          |
| 4  | Pyrosoma sp? (decorabracab) | 1 | looks similar to FID from 4/3                            | FID/FID-DNA            | 20.1        | 20.1        | 20.1 | Y                          |
| 5  | Nudebranch                  | 2 | blue tipped antennae, orange<br>tipped gills, white body | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 6  | Crassostrea sp.             | 1 | same as yesterday                                        | FID-DNA                | 20.1        | 20.1        | 20.1 | Y                          |
| 7  | Ophiothrix spiculata?       | 2 | pretty sure, but small<br>so FID                         | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 8  | Platyhelminthus sp.         | 1 |                                                          | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 9  | Porous orange sponge        |   |                                                          |                        | 130         | 34          | 96g  | Y                          |
| 10 | Cancer sp.                  | 1 | tiny, need to look<br>under scope                        | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 11 | Dorid sp.                   | 1 | spots on lateral side<br>w/ purple outer ring            | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 12 | Tube worm                   | 1 | light + orange - large<br>dark base - extending<br>arms  | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
|    | Pycnogonida spp.            | 1 | banded w/ red on<br>appendages                           | FID                    | 20.1        | 20.1        | 20.1 | Y                          |
| 14 |                             |   |                                                          |                        |             |             |      |                            |
| 15 |                             |   |                                                          |                        |             |             |      |                            |
| 16 |                             |   |                                                          |                        |             |             |      |                            |
| 17 |                             |   |                                                          |                        |             |             |      |                            |
| 18 |                             |   |                                                          |                        |             |             |      |                            |
| 19 |                             |   |                                                          |                        |             |             |      |                            |
| 20 |                             |   |                                                          |                        |             |             |      |                            |
| 21 |                             |   |                                                          |                        |             |             |      |                            |
| 22 |                             |   |                                                          |                        |             |             |      |                            |
| 23 |                             |   |                                                          |                        |             |             |      |                            |
| 24 |                             |   |                                                          |                        |             |             |      |                            |
| 25 |                             |   |                                                          |                        |             |             |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Tunicate in catch (vertebrate + not counted)  
Crabs, nude branches, worms, brittle stars all found in zoobryctron

Zoobryctron -

Green algae - Ulva -

Brown/yellow sponge - 2150 + 2100 + 2800 + 1500 + 1800

QA Pass/Fail: (circle) Yes No NA (not available)



**BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM**Station: B13-8078

Trawl #: \_\_\_\_\_

Agency: RAMPDate: 9/4/13

Previously Measured by: \_\_\_\_\_

Re-Measured by: \_\_\_\_\_

**Species #1**

| Original Species name:     |   |                  |      |     |
|----------------------------|---|------------------|------|-----|
| QC Re-ID Species name:     |   |                  |      |     |
| Comments/Anomalies         | N | QC Re-weigh (kg) |      |     |
|                            |   | Gross            | Tare | Net |
|                            |   |                  |      |     |
| Other species found in lot |   |                  |      |     |
| 1                          |   |                  |      |     |
| 2                          |   |                  |      |     |
| 3                          |   |                  |      |     |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (*describe*) \_\_\_\_\_**Species #2**

| Original Species name:     |   |                  |      |     |
|----------------------------|---|------------------|------|-----|
| QC Re-ID Species name:     |   |                  |      |     |
| Comments/Anomalies         | N | QC Re-weigh (kg) |      |     |
|                            |   | Gross            | Tare | Net |
|                            |   |                  |      |     |
| Other species found in lot |   |                  |      |     |
| 1                          |   |                  |      |     |
| 2                          |   |                  |      |     |
| 3                          |   |                  |      |     |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (*describe*) \_\_\_\_\_**Species #1**

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               |      |      |          |
| Count            |      |      |          |
| Biomass          |      |      |          |
| Anomalies        |      |      |          |

**Species #2**

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               |      |      |          |
| Count            |      |      |          |
| Biomass          |      |      |          |
| Anomalies        |      |      |          |

Notes:

---



---



---



---



---



---



---

ALIQOT RECORDING AND CALCULATIONS WORKSHEET (If necessary)

## BIG 13 TRAWL DEBRIS FORM

Agency: RHMPPage 1 of 1Station: B13-8078 Trawl #: 1 Date: 9/4/13CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

| Anthropogenic Debris -<br>include Brand Names in Comments if known | Plastic |         | Comment                    | Misc. Items/Pieces |         | Comment |
|--------------------------------------------------------------------|---------|---------|----------------------------|--------------------|---------|---------|
|                                                                    | Count   |         |                            | Count              |         |         |
| Bag                                                                |         |         | Boat/Ship/Engine part      |                    |         |         |
| Bandaïd                                                            |         |         | Clothing                   |                    |         |         |
| Balloon (mylar/latex)/Ribbon                                       |         |         | Concrete/Asphalt           |                    |         |         |
| Bottle                                                             |         |         | Fiberglass                 |                    |         |         |
| Buoy                                                               |         |         | Food                       |                    |         |         |
| Cap/Lid                                                            |         |         | Leather                    |                    |         |         |
| Cigarette box/wrapper                                              |         |         | Lumber                     |                    |         |         |
| Cup                                                                |         |         | Paper                      |                    |         |         |
| Filmstrip (movie)                                                  |         |         | Rag/Cloth                  |                    |         |         |
| Fishing Line/Net                                                   |         |         | Rubber                     |                    |         |         |
| Food Bag / Wrapper                                                 |         |         | Shoe                       |                    |         |         |
| Polypropylene Rope                                                 |         |         | Tape                       |                    |         |         |
| Straw                                                              |         |         | Tire                       |                    |         |         |
| Toy                                                                |         |         | Other Misc. (comment req.) |                    |         |         |
| Utensil                                                            |         |         | <b>Metal</b>               | Count              | Comment |         |
| Plastic Piece (unid.)                                              |         |         | Drink Can                  |                    |         |         |
| Other Plastic (comment req.)                                       |         |         | Can - other                |                    |         |         |
| <b>Glass</b>                                                       | Count   | Comment | Can Pull-tab               |                    |         |         |
| Beer Bottle                                                        |         |         | Fishing Gear               |                    |         |         |
| Glass Bottle/Jar -other                                            |         |         | Wire                       |                    |         |         |
| Glass Piece (unid.)                                                |         |         | Metal Piece (unid.)        |                    |         |         |
| Other Glass (comment req.)                                         |         |         | Other Metal (comment req.) |                    |         |         |

| Natural Debris              | Marine Origin |          | Est.*    | Comment                         | Terrestrial Vegetation                                                                                                                               |            | Est.* | Comment |
|-----------------------------|---------------|----------|----------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|---------|
|                             | Count         |          |          |                                 | Count                                                                                                                                                |            |       |         |
| Foliose Algae - not kelp    | <u>4</u>      | <u>L</u> |          | <u>ulva lettuce - see label</u> | Leaves/Seed Pod                                                                                                                                      |            |       |         |
| Gorgonian Sea Fan (dead)    |               |          |          |                                 | Stick/Branch/Driftwood                                                                                                                               |            |       |         |
| Kelp Holdfast               |               |          |          |                                 | Other Terrest. (comment req.)                                                                                                                        |            |       |         |
| Kelp Stipe/Blade            |               |          |          |                                 | *For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column: |            |       |         |
| Rock                        |               |          |          |                                 | Low:                                                                                                                                                 | L = 2-10   |       |         |
| Seagrass                    |               |          |          |                                 | Moderate:                                                                                                                                            | M = 11-100 |       |         |
| Other Marine (comment req.) |               |          | <u>M</u> | <u>Zoobryon - 2.43 kg</u>       | High:                                                                                                                                                | H = > 100  |       |         |

Completed by: JR

ulva  
gross: 0.020 kg  
tare: 0.033 kg  
net: 0.037 kg

zoobryon  
gross: 2.8 kg  
tare: 0.370 kg  
net: 2.430 kg

## FIELD SAMPLING QA CHECKLIST

Station ID: B13-8078

Arrival Date/Time: 8/27/13 1430 sed/water  
9/4/13 0716 trawl

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Is site accessible?                                                                                                                                  | <u>Y</u> |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | <u>Y</u> |
| Vessel has been anchored (or tied off)?                                                                                                              | <u>Y</u> |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | <u>Y</u> |
| Station occupation form completed?                                                                                                                   | <u>Y</u> |

#### 2. General Sampling Procedures:

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| Samples collected in the following order: CTD, water, sediment, trawl? | <u>Y</u> |
|------------------------------------------------------------------------|----------|

#### 3. Water Sampling Procedures:

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Field staff wearing fresh, powder free nitrile gloves?                                  | <u>Y</u>  |
| Equipment washed/rinsed from previous station?                                          | <u>Y</u>  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | <u>Y</u>  |
| Sampling instrument washed with Alconox?                                                | <u>Y</u>  |
| Sampling instrument given site water rinse prior to deployment?                         | <u>Y</u>  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | <u>Y</u>  |
| Sample bottles are lab certified, contaminant free?                                     | <u>Y</u>  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | <u>Y</u>  |
| Grab disposition / characteristic information recorded?                                 | <u>Y</u>  |
| Filtration for dissolved metals completed immediately after collection?                 | <u>Y</u>  |
| Staff avoided contaminating samples at all times?                                       | <u>Y</u>  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | <u>Y</u>  |
| Equipment or field blank collected (if applicable)?                                     | <u>NA</u> |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | ✓ |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FIDs

8078

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| species, use aliquot method of enumeration)?                                                                                                                  |      |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y    |
| Total biomass of each species group recorded?                                                                                                                 | Y    |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y    |
| Any anomalies recorded?                                                                                                                                       | N    |
| Photo of one representative from each species collected?                                                                                                      | Y    |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | NA Y |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y    |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA   |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y    |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y    |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | Y    |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y    |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: [Signature] Date/Time: 9/4/13 1700

Print Name/Company: John Rudolph AMEC

# STATION OCCUPATION

BIGHT'13

Agency Code 74MP

Weather

Clear ☒

Rain ☐

Sea State

Calm ☒

Nav Type

DGPS ☒

Station ID B13-8029

Vessel Name Early Bird

Overcast ☐

Thunderstorm ☐

Choppy ☐

GPS ☐

Date 9/5/13

Arrival Time 0731

(hh:mm)

Partly cloudy ☐

Fog ☐

Rough ☐

Drizzle ☐



Abandoned site?

Station Fail Code None

Y or N (If Y explain in comments)

Wind

Speed (kts) 5.2

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

# TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 0737         | 32.64597             | -117.12259            | 11.6      | 50       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 0739         | 32.64642             | -117.12075            | 12.6      |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 0749         | 32.64853             | -117.11412            | 10.8      |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 0751         | 32.64868             | -117.11368            | 10.7      |          |                        |                     |                       |                           |                        |
|              |             |              |                      |                       | 11.4      |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-S029

Page 1 of 1

Date: 9/5/14

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

| Species             | N | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more abundant spp. | FID or Voucher # | Weight (kg) |       |       | Photos (D, L, V)<br>Y/N |
|---------------------|---|------------------------------------------------------------------------------------------------------------|------------------|-------------|-------|-------|-------------------------|
|                     |   |                                                                                                            |                  | Gross       | Tare  | Net   |                         |
| 1 Barred Sand Bass  | 1 | 12                                                                                                         |                  | —           | —     | 0.034 | Y                       |
| 2 Spotted Sand Bass | 1 | 21 <sup>FD</sup>                                                                                           |                  | 0.300       | 0.085 | 0.205 | ↓                       |
| 3 CA Halibut        | 2 | 20/12                                                                                                      |                  | 0.230       | 0.095 | 0.135 | ↓                       |
| 4 Round Sting Ray   | 2 | L 12 28 2<br>W 13 15 6                                                                                     |                  | 0.440       | 0.095 | 0.345 | ↓                       |
| 5                   |   |                                                                                                            |                  |             |       |       |                         |
| 6                   |   |                                                                                                            |                  |             |       |       |                         |
| 7                   |   |                                                                                                            |                  |             |       |       |                         |
| 8                   |   |                                                                                                            |                  |             |       |       |                         |
| 9                   |   |                                                                                                            |                  |             |       |       |                         |
| 10                  |   |                                                                                                            |                  |             |       |       |                         |
| 11                  |   |                                                                                                            |                  |             |       |       |                         |
| 12                  |   |                                                                                                            |                  |             |       |       |                         |
| 13                  |   |                                                                                                            |                  |             |       |       |                         |
| 14                  |   |                                                                                                            |                  |             |       |       |                         |
| 15                  |   |                                                                                                            |                  |             |       |       |                         |
| 16                  |   |                                                                                                            |                  |             |       |       |                         |
| 17                  |   |                                                                                                            |                  |             |       |       |                         |
| 18                  |   |                                                                                                            |                  |             |       |       |                         |
| 19                  |   |                                                                                                            |                  |             |       |       |                         |
| 20                  |   |                                                                                                            |                  |             |       |       |                         |
| 21                  |   |                                                                                                            |                  |             |       |       |                         |
| 22                  |   |                                                                                                            |                  |             |       |       |                         |
| 23                  |   |                                                                                                            |                  |             |       |       |                         |
| 24                  |   |                                                                                                            |                  |             |       |       |                         |
| 25                  |   |                                                                                                            |                  |             |       |       |                         |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Larger Round Ray gave birth to 2 young as measuring lengths L: 12 12 W: 6 6

QA Pass/Fail: (circle)

Yes

No

(NA)

(not available)

— performed on B13-S022

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8029

Page 1 of 1

Date: 9/5/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species              | N | Comments<br>(or Anomalies) | FID or<br>Voucher<br># | Weight (kg) |     |      | Photos<br>(D, L, V)<br>Y/N |
|----|----------------------|---|----------------------------|------------------------|-------------|-----|------|----------------------------|
|    |                      |   |                            |                        | Gross       | Y/N | Net  |                            |
| 1  | Navanax inermis      | 5 | None                       | DNA/U                  | 20.1        | -   | 60.1 | Y                          |
| 2  | Musculista senhousia | 9 | ↓                          | -                      | ↓           | -   | ↓    | ↓                          |
| 3  | Poreos oryx sponge   | 2 | ↓                          | -                      | ↓           | -   | ↓    | ↓                          |
| 4  | Small Finger sponge  | 1 | ↓                          | -                      | ↓           | -   | ↓    | ↓                          |
| 5  |                      |   |                            |                        |             |     |      |                            |
| 6  |                      |   |                            |                        |             |     |      |                            |
| 7  |                      |   |                            |                        |             |     |      |                            |
| 8  |                      |   |                            |                        |             |     |      |                            |
| 9  |                      |   |                            |                        |             |     |      |                            |
| 10 |                      |   |                            |                        |             |     |      |                            |
| 11 |                      |   |                            |                        |             |     |      |                            |
| 12 |                      |   |                            |                        |             |     |      |                            |
| 13 |                      |   |                            |                        |             |     |      |                            |
| 14 |                      |   |                            |                        |             |     |      |                            |
| 15 |                      |   |                            |                        |             |     |      |                            |
| 16 |                      |   |                            |                        |             |     |      |                            |
| 17 |                      |   |                            |                        |             |     |      |                            |
| 18 |                      |   |                            |                        |             |     |      |                            |
| 19 |                      |   |                            |                        |             |     |      |                            |
| 20 |                      |   |                            |                        |             |     |      |                            |
| 21 |                      |   |                            |                        |             |     |      |                            |
| 22 |                      |   |                            |                        |             |     |      |                            |
| 23 |                      |   |                            |                        |             |     |      |                            |
| 24 |                      |   |                            |                        |             |     |      |                            |
| 25 |                      |   |                            |                        |             |     |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle) Yes No NA (not available)



BIGH. 13 TRAWL DEBRIS FORM Agency: RHMP

Agency: RHMP

Page 1 of 1

Station: B13-8029 Trawl #: Date: 9/5/13

Date: 9/5/13

CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

| Plastic                      | Count | Comment | Misc. Items/Pieces         | Count | Comment |
|------------------------------|-------|---------|----------------------------|-------|---------|
| Bag                          |       |         | Boat/Ship/Engine part      |       |         |
| Bandaïd                      |       |         | Clothing                   |       |         |
| Balloon (mylar/latex)/Ribbon |       |         | Concrete/Asphalt           |       |         |
| Bottle                       |       |         | Fiberglass                 |       |         |
| Buoy                         |       |         | Food                       |       |         |
| Cap/Lid                      |       |         | Leather                    |       |         |
| Cigarette box/wrapper        |       |         | Lumber                     |       |         |
| Cup                          |       |         | Paper                      |       |         |
| Filmstrip (movie)            |       |         | Rag/Cloth                  |       |         |
| Fishing Line/Net             |       |         | Rubber                     |       |         |
| Food Bag / Wrapper           |       |         | Shoe                       |       |         |
| Polypropylene Rope           |       |         | Tape                       |       |         |
| Straw                        |       |         | Tire                       |       |         |
| Toy                          |       |         | Other Misc. (comment req.) |       |         |
| Utensil                      |       |         |                            |       |         |
| Plastic Piece (unid.)        |       |         |                            |       |         |
| Other Plastic (comment req.) |       |         |                            |       |         |
| Glass                        | Count | Comment | Metal                      | Count | Comment |
| Beer Bottle                  |       |         | Drink Can                  |       |         |
| Glass Bottle/Jar -other      |       |         | Can - other                |       |         |
| Glass Piece (unid.)          |       |         | Can Pull-tab               |       |         |
| Other Glass (comment req.)   |       |         | Fishing Gear               |       |         |
|                              |       |         | Wire                       |       |         |
|                              |       |         | Metal Piece (unid.)        |       |         |
|                              |       |         | Other Metal (comment req.) |       |         |

| Natural Debris | Marine Origin              | Count | Est.* | Comment       | Terrestrial Vegetation                                                                                                                                                                                | Count | Est.* | Comment |
|----------------|----------------------------|-------|-------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
|                | Foliose Algae - not kelp   |       | M     | Red Algae 40% | Leaves/Seed Pod                                                                                                                                                                                       |       |       |         |
|                | Gorgonian Sea Fan (dead)   |       |       |               | Stick/Branch/Driftwood                                                                                                                                                                                |       |       |         |
|                | Kelp Holdfast              |       |       |               | Other Terrest. (comment req)                                                                                                                                                                          |       |       |         |
|                | Kelp Stipe/Blade           |       |       |               | *For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:<br><br>Low: L = 2-10<br><br>Moderate: M = 11-100 |       |       |         |
|                | Rock                       |       |       |               |                                                                                                                                                                                                       |       |       |         |
|                | Seagrass                   |       |       |               |                                                                                                                                                                                                       |       |       |         |
|                | Other Marine (comment req) |       |       |               |                                                                                                                                                                                                       |       |       |         |
|                |                            |       | H     | Zostera 60%   |                                                                                                                                                                                                       |       |       |         |

\*For Natural Debris only, if an exact count cannot be made.

leave the "Count" column blank and estimate the amount (L, M or H)

in the "Est." column:

Low:  $L = 2-10$

Moderate:  $M = 11-100$

High:  $H = > 100$

Batch wt. - ~~0.75~~ + 4.45 + 3.3 + 3.8 + 5.0 + 2.0 + 3.0, 2.2, 3.25, 3.7, 3.5 Completed by:

Tare wt. - 0.370 kg  $\times 19 = 7.03 \text{ kg}$

JR

Net wt = 49.43 kg

## FIELD SAMPLING QA CHECKLIST

Station ID: D13-8029

Arrival Date/Time: 8/11/13 0756

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

#### 2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

#### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✗  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | ✓  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

- 2 failed grabs

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | ✓ |
| Weighing scales calibrated?                                                                  | ✓ |
| Vessel passed through 100 m radius of station?                                               | ✓ |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | ✓ |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | ✓ |
| Trawl remained within 10% of target depth?                                                   | ✓ |
| PT sensor downloaded successfully?                                                           | ✓ |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | ✓ |
| Fish and/or invertebrates obtained in trawl?                                                 | ✓ |
| Trawl debris captured and processed?                                                         | ✓ |
| All fish positively identified (make note of any FIDs)?                                      | ✓ |
| All invertebrates positively identified (make note of any FIDs)?                             | ✓ |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | ✓ |

FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | Y  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | Y  |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | YN |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | Y  |
| DNA samples preserved with 95% ethanol?                                  | Y  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y  |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y  |
| Halibut study specimens stored immediately on ice and frozen asap?       | YN |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph Amee

# STATION OCCUPATION

BIGHT'13

Agency Code RHMP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID B2-8020

Date 9/5/13

Arrival Time 1335

(hh:mm)

☒

Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 5.0

Direction (4) W

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 1346         | 32.64026             | -117.13448            | 4.0       | 15       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 1348         | 32.64111             | -117.13285            |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1357         | 32.64414             | -117.12849            |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1358         | 32.64432             | -117.12814            |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8020

Page 1 of 1

Date: 9/5/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species           | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more<br>abundant spp. | FID or<br>Voucher # | Weight (kg) |       |       | Photos<br>(D, L, V)<br>Y/N |
|----|-------------------|----|---------------------------------------------------------------------------------------------------------------|---------------------|-------------|-------|-------|----------------------------|
|    |                   |    |                                                                                                               |                     | Gross       | Tare  | Net   |                            |
| 1  | CA Halibut        | 1  | 9                                                                                                             |                     | —           | —     | 0.011 | Y                          |
| 2  | Barred Sand Bass  | 4  | 11, 10, 12, 11                                                                                                |                     | 0.220       | 0.095 | 0.125 |                            |
| 3  | Deep Body Anchovy | 16 | 7, 8, 7, 4, 7, 8, 7, 7, 7, 6, 6, 6, 7, 6, 6, 7                                                                |                     | 0.145       | 0.095 | 0.05  |                            |
| 4  | Slough Anchovy    | 28 | 4, 3, 3, 3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 3, 3, 4, 4, 3, 3, 4, 3, 3, 3, 4, 3, 3                                  |                     | 0.100       | 0.095 | 0.005 | ↓                          |
| 5  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 6  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 7  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 8  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 9  |                   |    |                                                                                                               |                     |             |       |       |                            |
| 10 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 11 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 12 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 13 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 14 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 15 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 16 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 17 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 18 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 19 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 20 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 21 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 22 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 23 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 24 |                   |    |                                                                                                               |                     |             |       |       |                            |
| 25 |                   |    |                                                                                                               |                     |             |       |       |                            |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle)

Yes

No

NA (not available)

- performed on ~~B13-8020~~ B13-8052

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8020

Page 1 of 1

Date: 9/5/13

Completed by: Kelly Toot

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

460  
24  
376

|    | Species                | N  | Comments<br>(or Anomalies) | FID or<br>Voucher<br># | Weight (kg) |                        |      | Photos<br>(D, L, V) |
|----|------------------------|----|----------------------------|------------------------|-------------|------------------------|------|---------------------|
|    |                        |    |                            |                        | Gross       | <del>Tare</del><br>Y/N | Net  |                     |
| 1  | Brain Sponge           | 2  | red forf algae             | -                      | 410         | 34                     | 376  | Y                   |
| 2  | Ophiathex spiculata *  | 1  | in zoobotryon              | -                      | 40.1        | 40.1                   | 40.1 | Y                   |
| 3  | Cancer/Metacarcinus? * | 1  | in zoobotryon              | FID                    | 40.1        | 40.1                   | 40.1 | Y                   |
| 4  | Musculista senhousia * | 34 | in Gracilaria/Zob.         | -                      | 40.1        | 40.1                   | 40.1 | Y                   |
| 5  |                        |    |                            |                        |             |                        |      |                     |
| 6  |                        |    |                            |                        |             |                        |      |                     |
| 7  |                        |    |                            |                        |             |                        |      |                     |
| 8  |                        |    |                            |                        |             |                        |      |                     |
| 9  |                        |    |                            |                        |             |                        |      |                     |
| 10 |                        |    |                            |                        |             |                        |      |                     |
| 11 |                        |    |                            |                        |             |                        |      |                     |
| 12 |                        |    |                            |                        |             |                        |      |                     |
| 13 |                        |    |                            |                        |             |                        |      |                     |
| 14 |                        |    |                            |                        |             |                        |      |                     |
| 15 |                        |    |                            |                        |             |                        |      |                     |
| 16 |                        |    |                            |                        |             |                        |      |                     |
| 17 |                        |    |                            |                        |             |                        |      |                     |
| 18 |                        |    |                            |                        |             |                        |      |                     |
| 19 |                        |    |                            |                        |             |                        |      |                     |
| 20 |                        |    |                            |                        |             |                        |      |                     |
| 21 |                        |    |                            |                        |             |                        |      |                     |
| 22 |                        |    |                            |                        |             |                        |      |                     |
| 23 |                        |    |                            |                        |             |                        |      |                     |
| 24 |                        |    |                            |                        |             |                        |      |                     |
| 25 |                        |    |                            |                        |             |                        |      |                     |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

Zoobotryon Weight = 17.55 kg

Mixed with Gracilaria 3 70% by volume.

\* Associated with zoobotryon

QA Pass/Fail: (circle)

Yes

No

NA (not available)

## BIGHT'13 TRAWL INVERTEBRATE - QUALITY CONTROL FORM

Station: Site 8029 / <sup>8020</sup>~~8052~~ JR Trawl #: 1, 1 Agency: RHMPDate: 9-5-13 Previously Measured by: K. TaitRe-Measured by: C. StranskySpecies #1 Station 8029

|                                               |          |                  |          |             |
|-----------------------------------------------|----------|------------------|----------|-------------|
| Original Species name: <u>Navanax inermis</u> |          |                  |          |             |
| QC Re-ID Species name:                        |          |                  |          |             |
| Comments/Anomalies <u>None noted</u>          | N        | QC Re-weigh (kg) |          |             |
|                                               |          | Gross            | Tare     | Net         |
| <u>Navanax inermis</u>                        | <u>5</u> | <u>20.1</u>      | <u>-</u> | <u>20.1</u> |
| Other species found in lot                    |          |                  |          |             |
| 1                                             |          |                  |          |             |
| 2                                             |          |                  |          |             |
| 3                                             |          |                  |          |             |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #2 Station 8020

|                                                    |           |                  |          |             |
|----------------------------------------------------|-----------|------------------|----------|-------------|
| Original Species name: <u>Musculista senhousia</u> |           |                  |          |             |
| QC Re-ID Species name: <u>Musculista senhousia</u> |           |                  |          |             |
| Comments/Anomalies <u>None Noted</u>               | N         | QC Re-weigh (kg) |          |             |
|                                                    |           | Gross            | Tare     | Net         |
| <u>Musculista senhousia</u>                        | <u>34</u> | <u>20.1</u>      | <u>-</u> | <u>20.1</u> |
| Other species found in lot                         |           |                  |          |             |
| 1                                                  |           |                  |          |             |
| 2                                                  |           |                  |          |             |
| 3                                                  |           |                  |          |             |

Anomaly Codes: B = burnspot, P = External Parasite, W = wasting disease, O = other anomaly (describe) \_\_\_\_\_

Species #1

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               | ✓    |      | BCS      |
| Count            | ✓    |      | BCS      |
| Biomass          | ✓    |      | BCS      |
| Anomalies        | ✓    |      | BCS      |

Species #2

| QA/QC Acceptance |      |      |          |
|------------------|------|------|----------|
| Metric           | Pass | Fail | Initials |
| ID               | ✓    |      | BCS      |
| Count            | ✓    |      | BCS      |
| Biomass          | ✓    |      | BCS      |
| Anomalies        | ✓    |      | BCS      |

Notes:



# BIGN 13 TRAWL DEBRIS FORM

Agency: RAMP

Page 1 of 1

Station: B13-8020 Trawl #: 1 Date: 9/5/13

CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE ☐

| Anthropogenic Debris -<br>Include Brand Names in Comments if known | Plastic                      |              |                | Misc. Items/Pieces            | Count        | Comment        |
|--------------------------------------------------------------------|------------------------------|--------------|----------------|-------------------------------|--------------|----------------|
|                                                                    | Count                        | Comment      | Count          |                               |              |                |
|                                                                    | Bag                          |              |                | Boat/Ship/Engine part         |              |                |
|                                                                    | Bandaids                     |              |                | Clothing                      |              |                |
|                                                                    | Balloon (mylar/latex)/Ribbon |              |                | Concrete/Asphalt              |              |                |
|                                                                    | Bottle                       |              |                | Fiberglass                    |              |                |
|                                                                    | Buoy                         |              |                | Food                          |              |                |
|                                                                    | Cap/Lid                      |              |                | Leather                       |              |                |
|                                                                    | Cigarette box/wrapper        |              |                | Lumber                        |              |                |
|                                                                    | Cup                          |              |                | Paper                         |              |                |
|                                                                    | Filmstrip (movie)            |              |                | Rag/Cloth                     |              |                |
|                                                                    | Fishing Line/Net             |              |                | Rubber                        |              |                |
|                                                                    | Food Bag / Wrapper           |              |                | Shoe                          |              |                |
|                                                                    | Polypropylene Rope           |              |                | Tape                          |              |                |
|                                                                    | Straw                        |              |                | Tire                          |              |                |
|                                                                    | Toy                          |              |                | Other Misc. (comment req.)    |              |                |
|                                                                    | Utensil                      |              |                | <b>Metal</b>                  | <b>Count</b> | <b>Comment</b> |
|                                                                    | Plastic Piece (unid.)        |              |                | Drink Can                     |              |                |
|                                                                    | Other Plastic (comment req.) |              |                | Can - other                   |              |                |
|                                                                    | <b>Glass</b>                 | <b>Count</b> | <b>Comment</b> | Can Pull-tab                  |              |                |
|                                                                    | Beer Bottle                  |              |                | Fishing Gear                  |              |                |
|                                                                    | Glass Bottle/Jar -other      |              |                | Wire                          |              |                |
|                                                                    | Glass Piece (unid.)          |              |                | Metal Piece (unid.)           |              |                |
|                                                                    | Other Glass (comment req.)   |              |                | Other Metal (comment req.)    |              |                |
| Natural Debris                                                     | Marine Origin                |              |                | Terrestrial Vegetation        |              |                |
|                                                                    | Count                        | Est.*        | Comment        | Count                         | Est.*        | Comment        |
|                                                                    | Foliose Algae - not kelp     |              |                | Leaves/Seed Pod               |              |                |
|                                                                    | Gorgonian Sea Fan (dead)     |              |                | Stick/Branch/Driftwood        |              |                |
|                                                                    | Kelp Holdfast                |              |                | Other Terrest. (comment req.) |              |                |
|                                                                    | Kelp Stipe/Blade             |              |                |                               |              |                |
|                                                                    | Rock                         |              |                |                               |              |                |
|                                                                    | Seagrass                     |              |                |                               |              |                |
|                                                                    | Other Marine (comment req.)  |              | M Zoobotryon   |                               |              |                |

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
Moderate: M = 11-100  
High: H = > 100

Completed by: JR

Kg Beach Gross: 4.1, 4.6, 4.1, 3.9, 2.7 = 19.4  
Tare wt: 0.370 kg x 5 = 1.85  
Net = 17.55 kg

## FIELD SAMPLING QA CHECKLIST

Station ID: B17-8020

Arrival Date/Time: 8/11/13 1047  
9/15/13 1325

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y, N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

### Field Procedures

#### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

#### 2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

#### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y  |
| Equipment washed/rinsed from previous station?                                                             | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y  |
| Sampling instrument washed with Alconox?                                                                   | Y  |
| Sampling instrument given site water rinse prior to deployment?                                            | Y  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y  |
| Sample bottles are lab certified, contaminant free?                                                        | Y  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y  |
| Grab disposition / characteristic information recorded?                                                    | Y  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y  |
| Sediment evenly distributed among containers?                                                              | Y  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y  |
| Staff avoided contaminating samples at all times?                                                          | Y  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | Y  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

- FID

8020

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | NA |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | NA |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | Y |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

John Rudolph Amec

# STATION OCCUPATION

BIGHT '13

Agency Code RHMP

Weather

Clear ☒

Rain ☐

Sea State

Calm ☒

Nav Type

DGPS ☒

Station ID 013-8052

Vessel Name Early Bird

Overcast ☐

Thunderstorm ☐

Choppy ☐

GPS ☐

Date 9/5/13

Arrival Time 1016

(hh:mm)

Partly cloudy ☐

Fog ☐

Rough ☐

Drizzle ☐



Abandoned site?

Station Fail Code None

Y or N (If Y explain in comments)

Wind

Speed (kts) 2

Direction (4) 4

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

## TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmmm) | Longitude (DD°MM.mmmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|-----------------------|------------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
| 1            | Net Over    | 1026         | 32.65829              | -117.14716             | 5.1       | 18       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 1027         | 32.65832              | -117.14596             | 5.0       |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 1036         | 32.65851              | -117.13988             | 5.2       |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 1038         | 32.65851              | -117.13949             | 5.2       |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                       |                        |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                       |                        |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-faz

Page 1 of 1

Date: 9/5/13

Completed by: VR

Data from Short/Long Trawl @ >300 m Depth

Yes

No

| Species             | N   | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more<br>abundant spp. | FID or<br>Voucher # | Weight (kg) |       |       | Photos<br>(D, L, V)<br>Y/N |
|---------------------|-----|---------------------------------------------------------------------------------------------------------------|---------------------|-------------|-------|-------|----------------------------|
|                     |     |                                                                                                               |                     | Gross       | Tare  | Net   |                            |
| 1 Shiner Surf Perch | 1   | 7                                                                                                             |                     | —           | —     | 0.009 | Y                          |
| 2 Barred Sand Bass  | 4   | 13, 12, 13, 10                                                                                                |                     | 0.245       | 0.095 | 0.15  |                            |
| 3 Spotted Sand Bass | 4   | 19, 19, 18, 19                                                                                                |                     | 0.720       | 0.095 | 0.625 |                            |
| 4 Deep Body Anchovy | 174 | 7, 7, 6, 7, 7, 6, 7, 7, 7, 7, 7, 6, 6, 7, 7, 6, 7, 5 (see other sheet)                                        |                     | 0.615       | 0.129 | 0.526 |                            |
| 5 Queenfish         | 139 | 7, 7, 8, 7, 7, 6, 4, 6, 7, 8, 7, 7, 6, 6, 7, 7, 6, 8 (see other sheet)                                        |                     | 0.635       | 0.128 | 0.507 |                            |
| 6 Diamond Turbot    | 1   | 26                                                                                                            |                     | 0.545       | 0.095 | 0.450 |                            |
| 7 CA Halibut        | 2   | 14, 10                                                                                                        |                     | 0.145       | 0.095 | 0.05  |                            |
| 8 Round Sting Ray   | 35  | see other sheet                                                                                               |                     | 33.85       | 1.11  | 32.74 |                            |
| 9 Grey Smoothhound  | 3   | 38, 39, 36                                                                                                    |                     | 0.525       | 0.095 | 0.43  |                            |
| 10 Slough Anchovy   | 154 | see other page                                                                                                |                     | 0.135       | 0.095 | 0.04  |                            |
| 11                  |     |                                                                                                               |                     |             |       |       |                            |
| 12                  |     |                                                                                                               |                     |             |       |       |                            |
| 13                  |     |                                                                                                               |                     |             |       |       |                            |
| 14                  |     |                                                                                                               |                     |             |       |       |                            |
| 15                  |     |                                                                                                               |                     |             |       |       |                            |
| 16                  |     |                                                                                                               |                     |             |       |       |                            |
| 17                  |     |                                                                                                               |                     |             |       |       |                            |
| 18                  |     |                                                                                                               |                     |             |       |       |                            |
| 19                  |     |                                                                                                               |                     |             |       |       |                            |
| 20                  |     |                                                                                                               |                     |             |       |       |                            |
| 21                  |     |                                                                                                               |                     |             |       |       |                            |
| 22                  |     |                                                                                                               |                     |             |       |       |                            |
| 23                  |     |                                                                                                               |                     |             |       |       |                            |
| 24                  |     |                                                                                                               |                     |             |       |       |                            |
| 25                  |     |                                                                                                               |                     |             |       |       |                            |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrioxcephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put " - "and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: *Overfish* QAWT T: 0.033

- lengths above for QA on <sup>Queenfish,</sup> Anchovy

Deep Pody Anchovy QA wt:  $G: 0.0275$   $N: 0.041$   
 $T: 0.034$

other remaining lengths on  
separate sheet

QA Pass/Fail: (circle)

Yes

No

NA (not available)

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8052

Page 1 of 1

Date: 9/5/13

Completed by: JR

Gross weight (kg) 33.85

Tare Weight (kg) 1.11

Net weight (kg) 32.74

| Size class | N        | Species: <u>Round Sting Ray</u> | Anomalies |
|------------|----------|---------------------------------|-----------|
| 1          |          |                                 |           |
| 2          |          |                                 |           |
| 3          |          |                                 |           |
| 4          |          |                                 |           |
| 5          |          |                                 |           |
| 6          |          |                                 |           |
| 7          |          |                                 |           |
| 8          |          |                                 |           |
| 9          |          |                                 |           |
| 10         |          |                                 |           |
| 11         |          |                                 |           |
| 12         |          |                                 |           |
| 13         |          |                                 |           |
| 14         |          |                                 |           |
| 15         |          |                                 |           |
| 16         |          |                                 |           |
| 17         |          |                                 |           |
| 18         |          |                                 |           |
| 19         |          |                                 |           |
| 20         |          |                                 |           |
| 21         |          |                                 |           |
| 22         | <u>2</u> | <u>13, 12</u>                   |           |
| 23         | <u>2</u> | <u>14, 13</u>                   |           |
| 24         | <u>6</u> | <u>14, 14, 13, 14, 13, 13</u>   |           |
| 25         | <u>3</u> | <u>14, 13, 14</u>               |           |
| 26         | <u>4</u> | <u>14, 15, 14, 14</u>           |           |
| 27         | <u>1</u> | <u>15,</u>                      |           |
| 28         | <u>3</u> | <u>16, 16, 16</u>               |           |
| 29         | <u>1</u> | <u>17,</u>                      |           |
| 30         | <u>5</u> | <u>17, 18, 17, 18, 18</u>       |           |

Anomaly codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixecephalus*), F = fin erosion, H = Leishmaniasis (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments: Numbers in right column are widths.

Total Abundance 35

Kg Batch Wts - 4.3, 3.35, 2.35 = 33.85

QA Pass/Fail: (circle) Yes No NA (not available)

tare - 0.370 Kg x 3 = 1.11

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8052

Page 1 of 1

Date: 9/5/13

Completed by: JR

Gross weight (kg) 0.135

Tare Weight (kg) 0.095

Net weight (kg) 0.040

| Size class      | N         | Species: <u>Slough Anchovy</u> | Anomalies |
|-----------------|-----------|--------------------------------|-----------|
| 1               |           |                                |           |
| 2               |           |                                |           |
| 3               | <u>86</u> | <u>     </u>                   |           |
| 4               | <u>13</u> | <u>     </u>                   |           |
| 5               |           |                                |           |
| 6               | <u>2</u>  | <u>  </u>                      |           |
| 7               | <u>1</u>  | <u> </u>                       |           |
| 8               |           |                                |           |
| 9               |           |                                |           |
| 10              |           |                                |           |
| 11              |           |                                |           |
| 12              |           |                                |           |
| 13              |           |                                |           |
| 14              |           |                                |           |
| 15              |           |                                |           |
| 16              |           |                                |           |
| 17              |           |                                |           |
| 18              |           |                                |           |
| 19              |           |                                |           |
| 20              |           |                                |           |
| 21              |           |                                |           |
| 22              |           |                                |           |
| 23              |           |                                |           |
| 24              |           |                                |           |
| 25              |           |                                |           |
| 26              |           |                                |           |
| 27              |           |                                |           |
| 28              |           |                                |           |
| 29              |           |                                |           |
| <u>JR 30' 3</u> | <u>52</u> | <u>     </u>                   |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Total Abundance 154

Comments:

QA Pass/Fail: (circle) Yes No NA (not available)



# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8052

Page 1 of 1

Date: 9/5/13

Completed by: JR

Gross weight (kg) 0.505

Tare Weight (kg) 0.095

Net weight (kg) 0.410

| Size class | N         | Species: <u>Queenfish</u> | Anomalies |
|------------|-----------|---------------------------|-----------|
| 1          |           |                           |           |
| 2          |           |                           |           |
| 3          |           |                           |           |
| 4          | <u>1</u>  | <u>1</u>                  |           |
| 5          | <u>29</u> | <u>     </u>              |           |
| 6          | <u>44</u> | <u>     </u>              |           |
| 7          | <u>33</u> | <u>     </u>              |           |
| 8          | <u>11</u> | <u>    </u>               |           |
| 9          | <u>3</u>  | <u>   </u>                |           |
| 10         |           |                           |           |
| 11         |           |                           |           |
| 12         |           |                           |           |
| 13         |           |                           |           |
| 14         |           |                           |           |
| 15         |           |                           |           |
| 16         |           |                           |           |
| 17         |           |                           |           |
| 18         |           |                           |           |
| 19         |           |                           |           |
| 20         |           |                           |           |
| 21         |           |                           |           |
| 22         |           |                           |           |
| 23         |           |                           |           |
| 24         |           |                           |           |
| 25         |           |                           |           |
| 26         |           |                           |           |
| 27         |           |                           |           |
| 28         |           |                           |           |
| 29         |           |                           |           |
| 30         |           |                           |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

\*Add total to 20 on demersal fish ID form

Total Abundance

119

QA Pass/Fail: (circle)

Yes

No

NA (not available)

# BIGHT'13 DEMERSAL FISH SIZE CLASS FORM

Station: B13-8052

Page 1 of 1

Date: 9/5/13

Completed by: JR

Gross weight (kg) 0.580

Tare Weight (kg) 0.095

Net weight (kg) 0.485

| Size class     | N         | Species: <u>Deep Body Anchovy</u> | Anomalies |
|----------------|-----------|-----------------------------------|-----------|
| 1              |           |                                   |           |
| 2              |           |                                   |           |
| 3              |           |                                   |           |
| 4              |           |                                   |           |
| 5              | <u>2</u>  | <u>11</u>                         |           |
| 6              | <u>29</u> | <u>     </u>                      |           |
| 7              | <u>85</u> | <u>     </u>                      |           |
| 8              | <u>19</u> | <u>     </u>                      |           |
| 9              |           |                                   |           |
| 10             |           |                                   |           |
| 11             |           | <u>#</u>                          |           |
| 12             |           |                                   |           |
| 13             |           |                                   |           |
| 14             |           |                                   |           |
| 15             |           |                                   |           |
| 16             |           |                                   |           |
| 17             |           |                                   |           |
| 18             |           |                                   |           |
| 19             |           |                                   |           |
| 20             |           |                                   |           |
| 21             |           |                                   |           |
| 22             |           |                                   |           |
| 23             |           |                                   |           |
| 24             |           |                                   |           |
| 25             |           |                                   |           |
| 26             |           |                                   |           |
| 27             |           |                                   |           |
| 28             |           |                                   |           |
| 29             |           |                                   |           |
| <u>JR 30/7</u> | <u>19</u> | <u>     </u>                      |           |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

Comments:

\* Add to totals on Demersal Fish ID form

Total Abundance

154

QA Pass/Fail: (circle)

Yes

No

NA (not available)

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8052

Page 1 of 1

Date: 9/5/13

Completed by: JTC

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                               | N  | Comments<br>(or Anomalies)                 | FID or<br>Voucher<br># | Weight (kg) |      |      | Photos<br>(D, L, V)<br>Y/N |
|----|---------------------------------------|----|--------------------------------------------|------------------------|-------------|------|------|----------------------------|
|    |                                       |    |                                            |                        | Gross       | Y/N  | Net  |                            |
| 1  | <i>Farfantepenaeus californiensis</i> | 1  | none                                       | -                      | 60.1        | 60.1 | 60.1 | Y                          |
| 2  | Decorator Crab / <i>Pyromania</i>     | 7  | * 1 with lighter color morph saved for FID | FID                    | ↓           | ↓    | ↓    | ↓                          |
| 3  | Porous orange sponge                  | 1  |                                            | -                      | ↓           | ↓    | ↓    | ↓                          |
| 4  | <i>Mosculista</i>                     | 13 |                                            | -                      | ↓           | ↓    | ↓    | ↓                          |
| 5  |                                       |    |                                            |                        |             |      |      |                            |
| 6  |                                       |    |                                            |                        |             |      |      |                            |
| 7  |                                       |    |                                            |                        |             |      |      |                            |
| 8  |                                       |    |                                            |                        |             |      |      |                            |
| 9  |                                       |    |                                            |                        |             |      |      |                            |
| 10 |                                       |    |                                            |                        |             |      |      |                            |
| 11 |                                       |    |                                            |                        |             |      |      |                            |
| 12 |                                       |    |                                            |                        |             |      |      |                            |
| 13 |                                       |    |                                            |                        |             |      |      |                            |
| 14 |                                       |    |                                            |                        |             |      |      |                            |
| 15 |                                       |    |                                            |                        |             |      |      |                            |
| 16 |                                       |    |                                            |                        |             |      |      |                            |
| 17 |                                       |    |                                            |                        |             |      |      |                            |
| 18 |                                       |    |                                            |                        |             |      |      |                            |
| 19 |                                       |    |                                            |                        |             |      |      |                            |
| 20 |                                       |    |                                            |                        |             |      |      |                            |
| 21 |                                       |    |                                            |                        |             |      |      |                            |
| 22 |                                       |    |                                            |                        |             |      |      |                            |
| 23 |                                       |    |                                            |                        |             |      |      |                            |
| 24 |                                       |    |                                            |                        |             |      |      |                            |
| 25 |                                       |    |                                            |                        |             |      |      |                            |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Zoobotryon - 2400 - 370 = 2.03 kg  
Mixed with some gracilaria, etc

QA Pass/Fail: (circle) ☒ Yes ☐ No ☐ NA (not available)

performed on B13-8060  
B13-8069

**BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM**Station: B13-8052 Trawl #: 1 Agency: RHmpDate: 9/5/13 Previously Measured by: LHRe-Measured by: JROriginal Gross weight (kg) 0.075 Tare Weight (kg) 0.034 Net weight (kg) 0.041QC Re-weigh weight (kg) 0.085 Tare Weight (kg) 0.034 Net weight (kg) 0.051

| Size Class | Original Species: <i>Deep Body Anchovy</i> |         |               | Anomalies |
|------------|--------------------------------------------|---------|---------------|-----------|
|            | QC Re-ID: <i>Deep Body Anchovy</i>         |         |               |           |
|            | Re-ID Count                                | +/-2 mm | Tweener count |           |
| 1          |                                            | 1-2     |               |           |
| 2          |                                            | 2-3     |               |           |
| 3          |                                            | 3-4     |               |           |
| 4          |                                            | 4-5     | 1             |           |
| 5          |                                            | 5-6     |               |           |
| 6          |                                            | 6-7     | 1             |           |
| 7          |                                            | 7-8     |               |           |
| 8          |                                            | 8-9     |               |           |
| 9          |                                            | 9-10    |               |           |
| 10         |                                            | 10-11   |               |           |
| 11         |                                            | 11-12   |               |           |
| 12         |                                            | 12-13   |               |           |
| 13         |                                            | 13-14   |               |           |
| 14         |                                            | 14-15   |               |           |
| 15         |                                            | 15-16   |               |           |
| 16         |                                            | 16-17   |               |           |
| 17         |                                            | 17-18   |               |           |
| 18         |                                            | 18-19   |               |           |
| 19         |                                            | 19-20   |               |           |
| 20         |                                            | 20-21   |               |           |
| 21         |                                            | 21-22   |               |           |
| 22         |                                            | 22-23   |               |           |
| 23         |                                            | 23-24   |               |           |
| 24         |                                            | 24-25   |               |           |
| 25         |                                            | 25-26   |               |           |
| 26         |                                            | 26-27   |               |           |
| 27         |                                            | 27-28   |               |           |
| 28         |                                            | 28-29   |               |           |
| Total      | 8                                          | Total   | 12            |           |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass                                | Fail | Initials |
|--------------------------------|------|-----|------------------|-------------------------------------|------|----------|
|                                |      |     | Identification   | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Count            | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Length           | <input checked="" type="checkbox"/> |      |          |
|                                |      |     | Biomass          | <input checked="" type="checkbox"/> |      |          |
| Other species Weight (kg)      |      |     | Pathology        | <input checked="" type="checkbox"/> |      |          |
| Gross                          | Tare | Net | Notes:           |                                     |      |          |
|                                |      |     |                  |                                     |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixocephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

**BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM**Station: B13-8052Trawl #: 1Agency: RHMPDate: 9/5/12Previously Measured by: LHRe-Measured by: JROriginal Gross weight (kg) 0.130 Tare Weight (kg) 0.033 Net weight (kg) 0.087QC Re-weigh weight (kg) 0.125 Tare Weight (kg) 0.033 Net weight (kg) 0.092

| Size Class | Original Species: <i>Queenfish</i> |         |               | Anomalies |
|------------|------------------------------------|---------|---------------|-----------|
|            | QC Re-ID: <i>Queenfish</i>         |         |               |           |
|            | Re-ID Count                        | +/-2 mm | Tweener count |           |
| 1          |                                    | 1-2     |               |           |
| 2          |                                    | 2-3     |               |           |
| 3          |                                    | 3-4     |               |           |
| 4          |                                    | 4-5     |               |           |
| 5          |                                    | 5-6     | II            |           |
| 6          | I                                  | 6-7     | IIII          |           |
| 7          | IIII                               | 7-8     | II            |           |
| 8          | II                                 | 8-9     |               |           |
| 9          |                                    | 9-10    |               |           |
| 10         |                                    | 10-11   |               |           |
| 11         |                                    | 11-12   |               |           |
| 12         |                                    | 12-13   |               |           |
| 13         |                                    | 13-14   |               |           |
| 14         |                                    | 14-15   |               |           |
| 15         |                                    | 15-16   |               |           |
| 16         |                                    | 16-17   |               |           |
| 17         |                                    | 17-18   |               |           |
| 18         |                                    | 18-19   |               |           |
| 19         |                                    | 19-20   |               |           |
| 20         |                                    | 20-21   |               |           |
| 21         |                                    | 21-22   |               |           |
| 22         |                                    | 22-23   |               |           |
| 23         |                                    | 23-24   |               |           |
| 24         |                                    | 24-25   |               |           |
| 25         |                                    | 25-26   |               |           |
| 26         |                                    | 26-27   |               |           |
| 27         |                                    | 27-28   |               |           |
| 28         |                                    | 28-29   |               |           |
| Total      |                                    | Total   |               |           |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass | Fail | Initials |
|--------------------------------|------|-----|------------------|------|------|----------|
|                                |      |     | Identification   | ✓    |      |          |
|                                |      |     | Count            | ✓    |      |          |
|                                |      |     | Length           | ✓    |      |          |
|                                |      |     | Biomass          | ✓    |      |          |
| Other species Weight (kg)      |      |     | Pathology        | ✓    |      |          |
| Gross                          | Tare | Net | Notes:           |      |      |          |
|                                |      |     |                  |      |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrixecephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

## BIG 13 TRAWL DEBRIS FORM

Agency: RHMPPage 1 of 1Station: B13-8052 Trawl #: 1 Date: 9/5/13☒ CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

| Anthropogenic Debris - Include Brand Names in Comments if known | Plastic       |                              |                          | Misc. Items/Pieces         |              |                               |
|-----------------------------------------------------------------|---------------|------------------------------|--------------------------|----------------------------|--------------|-------------------------------|
|                                                                 | Count         | Comment                      | Count                    | Comment                    |              |                               |
|                                                                 |               | Bag                          |                          | Boat/Ship/Engine part      |              |                               |
|                                                                 |               | Bandaïd                      |                          | Clothing                   |              |                               |
|                                                                 |               | Balloon (mylar/latex)/Ribbon |                          | Concrete/Asphalt           |              |                               |
|                                                                 |               | Bottle                       |                          | Fiberglass                 |              |                               |
|                                                                 |               | Buoy                         |                          | Food                       |              |                               |
|                                                                 |               | Cap/Lid                      |                          | Leather                    |              |                               |
|                                                                 |               | Cigarette box/wrapper        |                          | Lumber                     |              |                               |
|                                                                 |               | Cup                          |                          | Paper                      |              |                               |
|                                                                 |               | Filmstrip (movie)            |                          | Rag/Cloth                  |              |                               |
|                                                                 |               | Fishing Line/Net             |                          | Rubber                     |              |                               |
|                                                                 |               | Food Bag / Wrapper           |                          | Shoe                       |              |                               |
|                                                                 |               | Polypropylene Rope           |                          | Tape                       |              |                               |
|                                                                 |               | Straw                        |                          | Tire                       |              |                               |
|                                                                 |               | Toy                          |                          | Other Misc. (comment req.) |              |                               |
|                                                                 |               | Utensil                      |                          |                            |              |                               |
|                                                                 |               | Plastic Piece (unid.)        |                          |                            |              |                               |
|                                                                 |               | Other Plastic (comment req.) |                          |                            |              |                               |
| Glass                                                           | Count         | Comment                      | Metal                    | Count                      | Comment      |                               |
|                                                                 |               | Beer Bottle                  |                          |                            | Drink Can    |                               |
|                                                                 |               | Glass Bottle/Jar -other      |                          |                            | Can - other  |                               |
|                                                                 |               | Glass Piece (unid.)          |                          |                            | Can Pull-tab |                               |
|                                                                 |               | Other Glass (comment req.)   |                          |                            | Fishing Gear |                               |
|                                                                 |               |                              |                          | Wire                       |              |                               |
|                                                                 |               |                              |                          | Metal Piece (unid.)        |              |                               |
|                                                                 |               |                              |                          | Other Metal (comment req.) |              |                               |
| Natural Debris                                                  | Marine Origin |                              |                          | Terrestrial Vegetation     |              |                               |
|                                                                 | Count         | Est.*                        | Comment                  | Count                      | Est.*        | Comment                       |
|                                                                 |               |                              | Foliose Algae - not kelp |                            |              | Leaves/Seed Pod               |
|                                                                 |               |                              | Gorgonian Sea Fan (dead) |                            |              | Stick/Branch/Driftwood        |
|                                                                 |               |                              | Kelp Holdfast            |                            |              | Other Terrest. (comment req.) |
|                                                                 |               |                              | Kelp Stipe/Blade         |                            |              |                               |
|                                                                 |               |                              | Rock                     |                            |              |                               |
|                                                                 |               | Seagrass                     |                          |                            |              |                               |
|                                                                 |               | Other Marine (comment req.)  |                          |                            |              |                               |

Net: 2.03 kg

\*For Natural Debris only, if an exact count cannot be made,

leave the "Count" column blank and estimate the amount (L, M or H)

in the "Est." column:

Low: L = 2-10

Moderate: M = 11-100

High: H = &gt; 100

Completed by: JR

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8052

Arrival Date/Time: 8/27/13 0720 *sed/water*  
9/15/13 1016 *trawl*

Site Acceptable for Sampling: Water: ☒ or N

Sediment: ☒ or N

Trawl: ☒ N, or NA

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                                      |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                                  | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and $\geq 25$ pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                              | Y |
| Station DGPS coordinates ( $\pm 3$ m) recorded?                                                                                                      | Y |
| Station occupation form completed?                                                                                                                   | Y |

2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |                 |
|------------------------------------------------------------------------------------------------------------|-----------------|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | Y               |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | Y               |
| Equipment washed/rinsed from previous station?                                                             | Y               |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | Y               |
| Sampling instrument washed with Alconox?                                                                   | Y               |
| Sampling instrument given site water rinse prior to deployment?                                            | Y               |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | Y               |
| Sample bottles are lab certified, contaminant free?                                                        | Y               |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | Y               |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | Y               |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | Y               |
| Grab disposition / characteristic information recorded?                                                    | Y               |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | Y               |
| Sediment evenly distributed among containers?                                                              | Y               |
| Stainless steel or plastic scoop used to distribute sediment?                                              | Y               |
| Staff avoided contaminating samples at all times?                                                          | Y               |
| Special study analytes collected (alkyl phenol, perflourinated, if applicable)?                            | NA              |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | <del>NA</del> Y |
| Equipment or field blank collected (if applicable)?                                                        | NA              |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | Y |
| Weighing scales calibrated?                                                                  | Y |
| Vessel passed through 100 m radius of station?                                               | Y |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | Y |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | Y |
| Trawl remained within 10% of target depth?                                                   | Y |
| PT sensor downloaded successfully?                                                           | Y |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | Y |
| Fish and/or invertebrates obtained in trawl?                                                 | Y |
| Trawl debris captured and processed?                                                         | Y |
| All fish positively identified (make note of any FIDs)?                                      | Y |
| All invertebrates positively identified (make note of any FIDs)?                             | N |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | Y |

FID



1052

## FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    | NA |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | Y  |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | N  |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

### 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

### 7. Sample Storage and Delivery:

|                                                                          |   |
|--------------------------------------------------------------------------|---|
| Water samples stored cold on wet ice?                                    | Y |
| Toxicity samples stored cold on wet ice?                                 | Y |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y |
| Infaunal samples relaxed and preserved with formalin?                    | Y |
| Voucher samples preserved with 10% formalin?                             | Y |
| DNA samples preserved with 95% ethanol?                                  | Y |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | Y |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y |
| Halibut study specimens stored immediately on ice and frozen asap?       | N |
| Cooler is taped shut for transport to lab?                               | Y |
| Completed COC is included in plastic bag in cooler?                      | Y |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/5/13 1700

Print Name/Company: \_\_\_\_\_

# STATION OCCUPATION

BIGHT'13

Agency Code RLMP

Weather

Clear ☒

Rain ☐

Overcast ☐

Thunderstorm ☐

Partly cloudy ☐

Fog ☐

Drizzle ☐

Sea State

Calm ☒

Choppy ☐

Rough ☐

Nav Type

DGPS ☒

GPS ☐

Station ID B13-8017

Date 9/6/13

Arrival Time 0708  
(hh:mm)

☒

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code None

Wind

Speed (kts) 1.0

Direction (4) SW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

# TRAWL EVENTS

| Trawl Number |             | Time (hh:mm) | Latitude (DD°MM.mmm) | Longitude (DD°MM.mmm) | Depth (m) | Wire Out | Distance to target (m) | Trawl Fail Code (3) | P/T Sensor Data (Y/N) | Community Structure (Y/N) | Tissue Chemistry (Y/N) |
|--------------|-------------|--------------|----------------------|-----------------------|-----------|----------|------------------------|---------------------|-----------------------|---------------------------|------------------------|
|              | Net Over    | 0714         | 32.62843             | -117.12961            | 3.24.0    | 15       |                        | None                | Y                     | Y                         | Y                      |
|              | Start Trawl | 0715         | 32.62951             | -117.12998            | 4.0       |          |                        |                     |                       |                           |                        |
|              | End Trawl   | 0725         | 32.63341             | -117.13287            | 4.5       |          |                        |                     |                       |                           |                        |
|              | Net on Deck | 0726         | 32.63363             | -117.13298            | 4.5       |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net Over    |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Start Trawl |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | End Trawl   |              |                      |                       |           |          |                        |                     |                       |                           |                        |
|              | Net on Deck |              |                      |                       |           |          |                        |                     |                       |                           |                        |

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: B13-8017

Page 1 of 1

Date: 9/6/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

| Species             | N  | Std Length Size Class (cm)<br>Use for up to 10 individuals.<br>Use Size Class sheet for more abundant spp. | FID or Voucher # | Weight (kg) |       |       | Photos (D, L, V)<br>Y/N |
|---------------------|----|------------------------------------------------------------------------------------------------------------|------------------|-------------|-------|-------|-------------------------|
|                     |    |                                                                                                            |                  | Gross       | Tare  | Net   |                         |
| 1 Sargo             | 4  | 17, 17, 14, 27                                                                                             | 4                | 1.45        | 0.370 | 1.08  | Y                       |
| 2 Round Sting Ray   | 5  | 24, 24, 31, 24, 23<br>W 14, 14, 17, 13, 13                                                                 |                  | 1.1         | 0.095 | 1.00  |                         |
| 3 Spotted Sand Bass | 3  | 24, 18, 19                                                                                                 |                  | 0.730       | 0.095 | 0.635 |                         |
| 4 Black Croaker     | 1  | 17                                                                                                         |                  | 0.205       | 0.095 | 0.11  |                         |
| 5 Deep Body Anchovy | 13 | 6, 7, 6, 7, 6, 6, 6, 8, 6, 6, 6, 6, 6                                                                      |                  | 0.120       | 0.095 | 0.025 |                         |
| 6 Barred Sand Bass  | 4  | 13, 12, 11, 11                                                                                             |                  | 0.240       | 0.095 | 0.145 |                         |
| 7 Slough Anchovy    | 7  | 3, 3, 3, 4, 3, 3, 4                                                                                        |                  | 0.035       | 0.033 | 0.002 | ↓                       |
| 8                   |    |                                                                                                            |                  |             |       |       |                         |
| 9                   |    |                                                                                                            |                  |             |       |       |                         |
| 10                  |    |                                                                                                            |                  |             |       |       |                         |
| 11                  |    |                                                                                                            |                  |             |       |       |                         |
| 12                  |    |                                                                                                            |                  |             |       |       |                         |
| 13                  |    |                                                                                                            |                  |             |       |       |                         |
| 14                  |    |                                                                                                            |                  |             |       |       |                         |
| 15                  |    |                                                                                                            |                  |             |       |       |                         |
| 16                  |    |                                                                                                            |                  |             |       |       |                         |
| 17                  |    |                                                                                                            |                  |             |       |       |                         |
| 18                  |    |                                                                                                            |                  |             |       |       |                         |
| 19                  |    |                                                                                                            |                  |             |       |       |                         |
| 20                  |    |                                                                                                            |                  |             |       |       |                         |
| 21                  |    |                                                                                                            |                  |             |       |       |                         |
| 22                  |    |                                                                                                            |                  |             |       |       |                         |
| 23                  |    |                                                                                                            |                  |             |       |       |                         |
| 24                  |    |                                                                                                            |                  |             |       |       |                         |
| 25                  |    |                                                                                                            |                  |             |       |       |                         |

Anomaly Codes: (record as superscript to tally mark):

A = ambicoloration B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., Phrixocephalus), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments:

QA Pass/Fail: (circle) Yes No NA (not available)

## BIGHT'13 TRAWL DEMERSAL FISH - QUALITY CONTROL FORM

Station: BD-8017Trawl #: 1Agency: RHMPDate: 9/6/13Previously Measured by: LHRe-Measured by: FROriginal Gross weight (kg) 0.120 Tare Weight (kg) 0.095 Net weight (kg) 0.025QC Re-weigh weight (kg) 0.125 Tare Weight (kg) 0.095 Net weight (kg) 0.030

| Size Class | Original Species: <i>Deep Body Anchovy</i> |         |               | Anomalies |
|------------|--------------------------------------------|---------|---------------|-----------|
|            | QC Re-ID: <i>Deep Body Anchovy</i>         |         |               |           |
|            | Re-ID Count                                | +/-2 mm | Tweener count |           |
| 1          |                                            | 1-2     |               |           |
| 2          |                                            | 2-3     |               |           |
| 3          |                                            | 3-4     |               |           |
| 4          |                                            | 4-5     |               |           |
| 5          |                                            | 5-6     | <i>    </i>   |           |
| 6          | <i>    </i>                                | 6-7     | <i>1</i>      |           |
| 7          | <i>  </i>                                  | 7-8     |               |           |
| 8          | <i>1</i>                                   | 8-9     |               |           |
| 9          |                                            | 9-10    |               |           |
| 10         |                                            | 10-11   |               |           |
| 11         |                                            | 11-12   |               |           |
| 12         |                                            | 12-13   |               |           |
| 13         |                                            | 13-14   |               |           |
| 14         |                                            | 14-15   |               |           |
| 15         |                                            | 15-16   |               |           |
| 16         |                                            | 16-17   |               |           |
| 17         |                                            | 17-18   |               |           |
| 18         |                                            | 18-19   |               |           |
| 19         |                                            | 19-20   |               |           |
| 20         |                                            | 20-21   |               |           |
| 21         |                                            | 21-22   |               |           |
| 22         |                                            | 22-23   |               |           |
| 23         |                                            | 23-24   |               |           |
| 24         |                                            | 24-25   |               |           |
| 25         |                                            | 25-26   |               |           |
| 26         |                                            | 26-27   |               |           |
| 27         |                                            | 27-28   |               |           |
| 28         |                                            | 28-29   |               |           |
| Total      | <i>7</i>                                   | Total   | <i>6</i>      |           |

| Other Species found in sample: |      |     | QA/QC Acceptance | Pass     | Fail | Initials |
|--------------------------------|------|-----|------------------|----------|------|----------|
|                                |      |     | Identification   | <u>✓</u> |      |          |
|                                |      |     | Count            | <u>✓</u> |      |          |
|                                |      |     | Length           | <u>✓</u> |      |          |
|                                |      |     | Biomass          | <u>✓</u> |      |          |
| Other species Weight (kg)      |      |     | Pathology        | <u>✓</u> |      |          |
| Gross                          | Tare | Net | Notes:           |          |      |          |
|                                |      |     |                  |          |      |          |

Anomaly Codes (record as superscript to length measurement): A = ambicoloration, B = albinism, D = skeletal deformity, E = copepod eye-parasite (i.e., *Phrioxcephalus*), F = fin erosion, H = Leeches, L = lesion (describe in Comments), M = Monogeneans, O = other anomaly (describe in Comments), P = other external parasite (describe in Comments), T = tumor, multiple occurrences on individual put "-" and #

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: B13-8017

Page 1 of 1

Date: 9/6/13

Completed by: JR

Data from Short/Long Trawl @ >300 m Depth ☐ Yes ☒ No

|    | Species                     | N | Comments<br>(or Anomalies) | FID or<br>Voucher<br># | Weight (kg) |       |      | Photos<br>(D, L, V) |
|----|-----------------------------|---|----------------------------|------------------------|-------------|-------|------|---------------------|
|    |                             |   |                            |                        | Gross       | Y/N   | Net  |                     |
| 1  | <i>Navanax inermis</i>      | 1 |                            |                        | 20.1        | 20.1  | 20.1 | Y                   |
| 2  | <i>Musculista senhousia</i> | 3 |                            |                        | 20.1        | 20.1  | 20.1 | Y                   |
| 3  | Brain sponge                |   |                            |                        | 6.25        | 0.370 |      | Y                   |
| 4  | Cancer/metacarcinus         | 1 |                            |                        | 20.1        | 20.1  | 20.1 | Y                   |
| 5  | Hippolyte californiensis    | 1 |                            |                        | 20.1        | 20.1  | 20.1 | Y                   |
| 6  | Isopod sp.? parasitic       | 1 | FID - Black/white          | FID                    | 20.1        | 20.1  | 20.1 | Y                   |
| 7  | Potato sponge?              | 1 | FID/DNA (vert. color)      | FID                    | 20.1        | 20.1  | 20.1 | Y                   |
| 8  |                             |   |                            |                        |             |       |      |                     |
| 9  |                             |   |                            |                        |             |       |      |                     |
| 10 |                             |   |                            |                        |             |       |      |                     |
| 11 |                             |   |                            |                        |             |       |      |                     |
| 12 |                             |   |                            |                        |             |       |      |                     |
| 13 |                             |   |                            |                        |             |       |      |                     |
| 14 |                             |   |                            |                        |             |       |      |                     |
| 15 |                             |   |                            |                        |             |       |      |                     |
| 16 |                             |   |                            |                        |             |       |      |                     |
| 17 |                             |   |                            |                        |             |       |      |                     |
| 18 |                             |   |                            |                        |             |       |      |                     |
| 19 |                             |   |                            |                        |             |       |      |                     |
| 20 |                             |   |                            |                        |             |       |      |                     |
| 21 |                             |   |                            |                        |             |       |      |                     |
| 22 |                             |   |                            |                        |             |       |      |                     |
| 23 |                             |   |                            |                        |             |       |      |                     |
| 24 |                             |   |                            |                        |             |       |      |                     |
| 25 |                             |   |                            |                        |             |       |      |                     |

Anomaly Codes: B = burnspot, P = External Parasite, O = other anomaly (describe in Comments), W = wasting disease, multiple occurrences on individual put "-" and #, FID = specimen(s) collected for further identification, #V = Number of specimens collected as species vouchers

Comments: Zoobotryon 4.41 kg weight

3.05 + 3.2

370

QA Pass/Fail: (circle) Yes No NA (not available)

BIG 13 TRAWL DEBRIS FORM Agency: ILHMP

Agency: RHMP

Page 1 of 1

Station: B13-8017 Trawl #: \_\_\_\_\_ Date: 9/6/13

**CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE**

| Plastic                      |       |         | Count | Comment | Misc. Items/Pieces         |       |         | Count | Comment |
|------------------------------|-------|---------|-------|---------|----------------------------|-------|---------|-------|---------|
| Bag                          |       |         |       |         | Boat/Ship/Engine part      |       |         |       |         |
| Bandaïd                      |       |         |       |         | Clothing                   |       |         |       |         |
| Balloon (mylar/latex)/Ribbon |       |         |       |         | Concrete/Asphalt           |       |         |       |         |
| Bottle                       |       |         |       |         | Fiberglass                 |       |         |       |         |
| Buoy                         |       |         |       |         | Food                       |       |         |       |         |
| Cap/Lid                      |       |         |       |         | Leather                    |       |         |       |         |
| Cigarette box/wrapper        |       |         |       |         | Lumber                     |       |         |       |         |
| Cup                          |       |         |       |         | Paper                      |       |         |       |         |
| Filmstrip (movie)            |       |         |       |         | Rag/Cloth                  |       |         |       |         |
| Fishing Line/Net             |       |         |       |         | Rubber                     |       |         |       |         |
| Food Bag / Wrapper           |       |         |       |         | Shoe                       |       |         |       |         |
| Polypropylene Rope           |       |         |       |         | Tape                       |       |         |       |         |
| Straw                        |       |         |       |         | Tire                       |       |         |       |         |
| Toy                          |       |         |       |         | Other Misc. (comment req.) |       |         |       |         |
| Utensil                      |       |         |       |         |                            |       |         |       |         |
| Plastic Piece (unid.)        |       |         |       |         |                            |       |         |       |         |
| Other Plastic (comment req.) |       |         |       |         |                            |       |         |       |         |
| Glass                        | Count | Comment |       |         | Metal                      | Count | Comment |       |         |
| Beer Bottle                  |       |         |       |         | Drink Can                  |       |         |       |         |
| Glass Bottle/Jar -other      |       |         |       |         | Can - other                |       |         |       |         |
| Glass Piece (unid.)          |       |         |       |         | Can Pull-tab               |       |         |       |         |
| Other Glass (comment req.)   |       |         |       |         | Fishing Gear               |       |         |       |         |
|                              |       |         |       |         | Wire                       |       |         |       |         |
|                              |       |         |       |         | Metal Piece (unid.)        |       |         |       |         |
|                              |       |         |       |         | Other Metal (comment req.) |       |         |       |         |

| Marine Origin              |  |  | Count | Est.* | Comment        | Terrestrial Vegetation       |  |  | Count | Est.* | Comment |
|----------------------------|--|--|-------|-------|----------------|------------------------------|--|--|-------|-------|---------|
| Foliose Algae - not kelp   |  |  |       |       | Red Algae 50%  | Leaves/Seed Pod              |  |  |       |       |         |
| Gorgonian Sea Fan (dead)   |  |  |       |       |                | Stick/Branch/Driftwood       |  |  |       |       |         |
| Kelp Holdfast              |  |  |       |       |                | Other Terrest. (comment req) |  |  |       |       |         |
| Kelp Stipe/Blade           |  |  |       |       |                |                              |  |  |       |       |         |
| Rock                       |  |  |       |       |                |                              |  |  |       |       |         |
| Seagrass                   |  |  |       |       |                |                              |  |  |       |       |         |
| Other Marine (comment req) |  |  |       |       | L Zoobryon 50% |                              |  |  |       |       |         |

Completed by: LR

Low:  $L = 2-10$   
Moderate:  $M = 11-100$   
High:  $H = > 100$

# FIELD SAMPLING QA CHECKLIST

Station ID: B13-8017

Arrival Date/Time: 8/11/13 1415 *sed/water*

Site Acceptable for Sampling: Water: Y or N

Sediment: Y or N

Trawl: Y N, or NA *trawl*

If No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

## Field Procedures

### 1. Upon arriving at the sampling location, the following site observations are recorded:

|                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Is site accessible?                                                                                                                           | Y |
| Depth and benthic salinity recorded? Are these parameters within Bight '13 - acceptable limits? (>3m depth in embayments and ≥25pt salinity). | Y |
| Vessel has been anchored (or tied off)?                                                                                                       | Y |
| Station DGPS coordinates (± 3 m) recorded?                                                                                                    | Y |
| Station occupation form completed?                                                                                                            | Y |

### 2. General Sampling Procedures:

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Samples collected in the following order: CTD, water, sediment, trawl? | Y |
|------------------------------------------------------------------------|---|

### 3. Water Sampling Procedures:

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Field staff wearing fresh, powder free nitrile gloves?                                  | Y  |
| Equipment washed/rinsed from previous station?                                          | Y  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                      | Y  |
| Sampling instrument washed with Alconox?                                                | Y  |
| Sampling instrument given site water rinse prior to deployment?                         | Y  |
| Sample bottles correctly labeled (minimum: station ID, date, agency, parameter)?        | Y  |
| Sample bottles are lab certified, contaminant free?                                     | Y  |
| Samples containers are the correct type in accordance with Table 11-1 in the RHMP QAPP? | Y  |
| Grab disposition / characteristic information recorded?                                 | Y  |
| Filtration for dissolved metals completed immediately after collection?                 | Y  |
| Staff avoided contaminating samples at all times?                                       | Y  |
| Water samples collected on the upwind/upcurrent side of the boat?                       | Y  |
| Equipment or field blank collected (if applicable)?                                     | NA |

## FIELD SAMPLING QA CHECKLIST

### 4. Sediment Sampling Procedures:

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| Samples collected in following order: benthic infauna, chem, tox, bioaccum?                                | ✓  |
| Field staff wearing fresh, powder free nitrile gloves?                                                     | ✓  |
| Equipment washed/rinsed from previous station?                                                             | ✓  |
| Vessel engine has been shut off for 3-5 minutes prior to sampling?                                         | ✓  |
| Sampling instrument washed with Alconox?                                                                   | ✓  |
| Sampling instrument given site water rinse prior to deployment?                                            | ✓  |
| Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?                           | ✓  |
| Sample bottles are lab certified, contaminant free?                                                        | ✓  |
| Samples containers are the correct type in accordance with Table 11-2 in the RHMP QAPP?                    | ✓  |
| Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)? | ✓  |
| Sample penetration meets acceptability criteria (e.g. minimum 5cm for chem/tox; 7cm for infauna)?          | ✓  |
| Grab disposition / characteristic information recorded?                                                    | ✓  |
| Chem/Tox samples collected from top 5cm, and 1cm from sides of grab?                                       | ✓  |
| Sediment evenly distributed among containers?                                                              | ✓  |
| Stainless steel or plastic scoop used to distribute sediment?                                              | ✓  |
| Staff avoided contaminating samples at all times?                                                          | ✓  |
| Special study analytes collected (alkyl phenol, perfluorinated, if applicable)?                            | NA |
| Special study sample collected (benthic bioaccumulation, if applicable)?                                   | ✓  |
| Equipment or field blank collected (if applicable)?                                                        | NA |

### 5. Trawl Sampling Procedures:

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| Proper equipment used (Semi-balloon otter trawl)?                                            | ✓ |
| Weighing scales calibrated?                                                                  | ✓ |
| Vessel passed through 100 m radius of station?                                               | ✓ |
| Trawl duration 10 minutes (or minimum of 5 minutes in confined areas)?                       | ✓ |
| Trawl log info recorded (depth, tow wire length, times, coordinates)?                        | ✓ |
| Trawl remained within 10% of target depth?                                                   | ✓ |
| PT sensor downloaded successfully?                                                           | ✓ |
| Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)? | ✓ |
| Fish and/or invertebrates obtained in trawl?                                                 | ✓ |
| Trawl debris captured and processed?                                                         | ✓ |
| All fish positively identified (make note of any FIDs)?                                      | ✓ |
| All invertebrates positively identified (make note of any FIDs)?                             |   |
| All fish and invertebrates enumerated (if more than ~300 specimens of a single               | ✓ |



8017

# FIELD SAMPLING QA CHECKLIST

|                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| species, use aliquot method of enumeration)?                                                                                                                  |    |
| Standard length of all bony fish measured? Total length for cartilaginous fish?<br>Measure a minimum of 250 specimens if the total catch exceeds this amount? | Y  |
| Total biomass of each species group recorded?                                                                                                                 | Y  |
| Composite weight of smaller specimens recorded (those <0.1 kg)?                                                                                               | Y  |
| Any anomalies recorded?                                                                                                                                       | N  |
| Photo of one representative from each species collected?                                                                                                      | Y  |
| Taxonomy voucher collected for each new species (10% formalin)?                                                                                               | Y  |
| DNA voucher collected for each new species (95% ethanol) (outside label only)?                                                                                | Y  |
| Anomaly vouchers collected (10% formalin)?                                                                                                                    |    |
| Fish bioaccum target species captured and preserved on ice to be frozen?                                                                                      | Y  |
| Plastic pollution species captured and preserved on ice to be frozen?                                                                                         | NA |
| Halibut for special study captured and preserved on ice to be frozen? (12-22 inch size range)                                                                 | NA |
| Daily QA/QC field trawl audit performed by Cruise Leader?                                                                                                     | Y  |

## 6. Data Recording:

|                                                                                                                                              |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|
| Samples properly logged and cross-checked by a second person on all COC forms?                                                               | Y |
| Proper persons have signed and dated all COCs?                                                                                               | Y |
| All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next? | Y |

## 7. Sample Storage and Delivery:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| Water samples stored cold on wet ice?                                    | Y  |
| Toxicity samples stored cold on wet ice?                                 | Y  |
| Sediment chem. samples stored cold on wet ice or frozen within 24 hours? | Y  |
| Infaunal samples relaxed and preserved with formalin?                    | Y  |
| Voucher samples preserved with 10% formalin?                             | Y  |
| DNA samples preserved with 95% ethanol?                                  | Y  |
| Infaunal bioaccum samples stored immediately on ice and frozen asap?     | Y  |
| Plastic pollution study fish stored immediately on ice and frozen asap?  | NA |
| Fish bioaccum specimens stored immediately on ice and frozen asap?       | Y  |
| Halibut study specimens stored immediately on ice and frozen asap?       | NA |
| Cooler is taped shut for transport to lab?                               | Y  |
| Completed COC is included in plastic bag in cooler?                      | Y  |

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: \_\_\_\_\_

Date/Time: 9/6/13 1630

Print Name/Company: \_\_\_\_\_

John Rudolph Amec