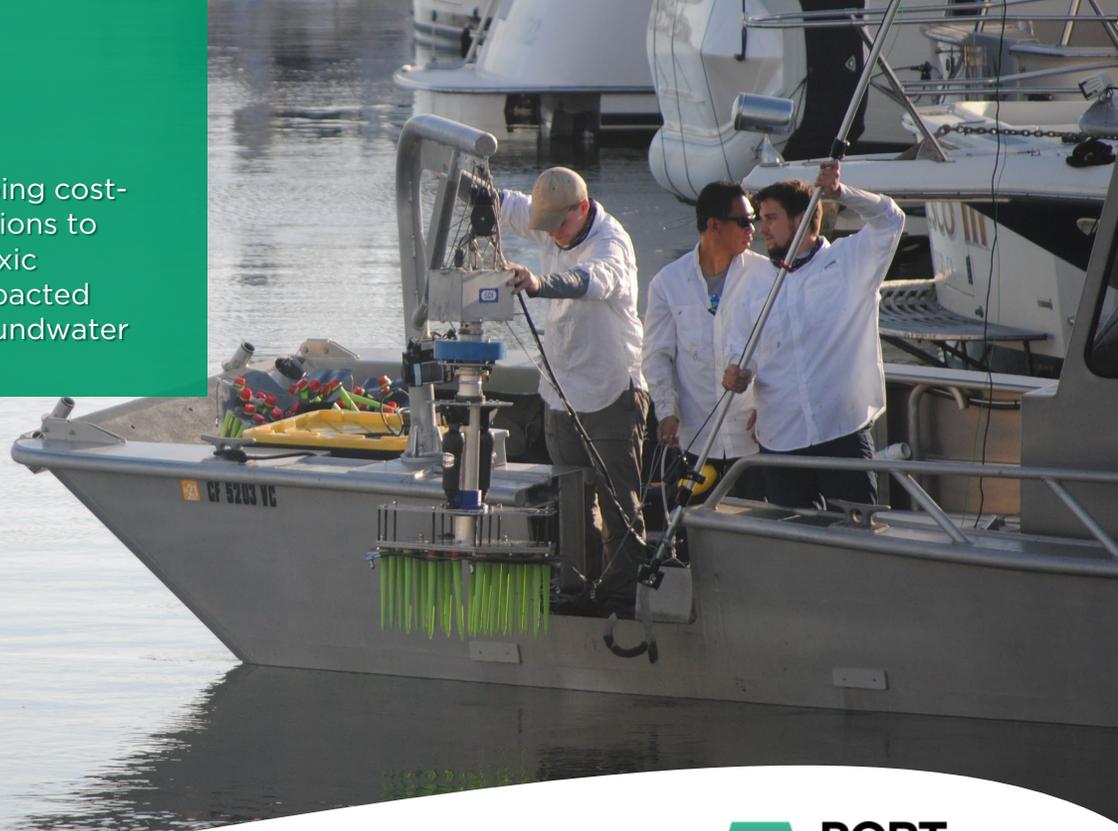


# ecoSPEARS

ecoSPEARS is developing cost-effective cleanup solutions to extract and destroy toxic contaminants from impacted sediment, soil and groundwater



## PILOT PROJECT

In 2019, ecoSPEARS partnered with the Port of San Diego to demonstrate its innovative in-situ technology to extract contaminants from impacted marine sediment. ecoSPEARS is a start-up company comprised of a fast-growing team of innovators, engineers, and scientists developing cleanup solutions for contaminated sediment.

SPEARS stands for Sorbent Polymer Extraction and Remediation System. Shaped like spikes, SPEARS filled with a proprietary solution are deployed into contaminated sediment or around challenging facilities like wharves/pier or sensitive wetland areas where dredging may not be feasible. Once settled into the sediment, the SPEARS act like sponges, passively absorbing chlorinated toxic contaminants such as polychlorinated biphenyls (PCBs) and dioxins. Once the remedial site goals are met, the SPEARS are safely removed and retrieved, and then the SPEARS enter a green chemical process to destroy the PCB's absorbed.

## CURRENT STATUS

In support of the pilot, the Port is providing funding, permitting, and environmental review as well as access to Port-controlled land in San Diego Bay to test the SPEARS technology. The permits for the pilot were obtained, two baseline sampling events were conducted, and the 6-month SPEARS deployment took place on December 14, 2020.

## HIGHLIGHTS



In December 2020, ecoSPEARS deployed the SPEARS technology at Harbor Island and America's Cup Harbor in San Diego Bay. After 6 months, ecoSPEARS will remove the SPEARS and safely destroy the absorbed PCB's through a lab-based chemical process.

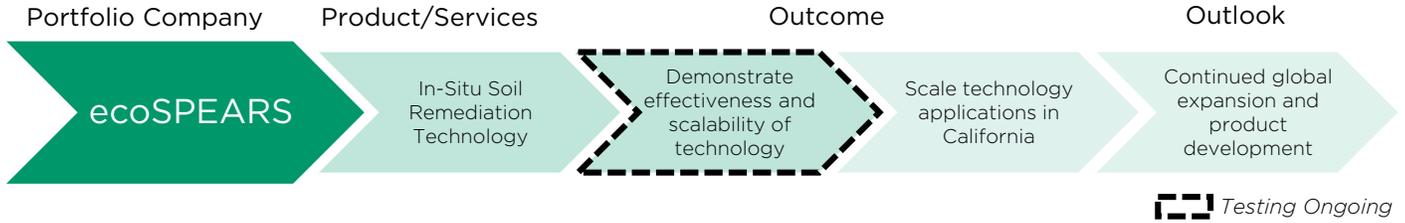


# Scorecard: ecoSPEARS / Q1 FY21

PILOT TIMELINE: Board Approval: 6/8/2019 Start Date: 10/15/2019 End Date: 9/10/2021

## PILOT OVERVIEW

Tracking benefits from pilot project to commercial success



## ENVIRONMENTAL & SOCIAL BENEFITS

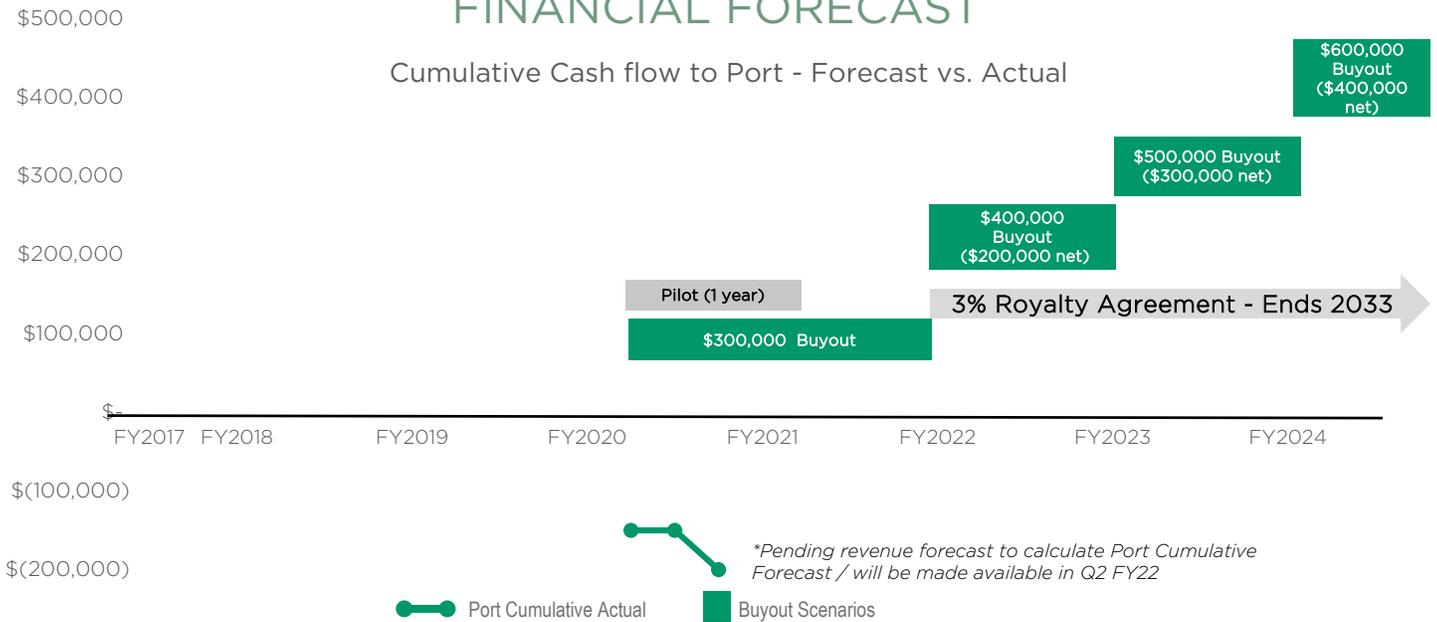
### Pilot Key Performance Indicators

OVERALL KPI (Port Fiscal Year)	Effectiveness in reducing PCB concentrations in sediments	No solvent/water exchange across spike	Destruction of extracted PCBs	Assess effectiveness in treating PCB-impacted sediment using solvent-rinse extraction process
FY21-22	SPEARS technology performance will be evaluated after 6 months of deployment at two locations in San Diego Bay			
FY20-21	ecoSPEARS deployed SPEARS technology at two locations in San Diego Bay. The primary goal will be to determine how much PCB mass the SPEARS technology will remove over a predetermined period compared to baseline concentrations.			

Per pilot project statement of work

## FINANCIAL FORECAST

Cumulative Cash flow to Port - Forecast vs. Actual



Agreement: 3% royalty agreement on worldwide gross revenue for a period of 15 years. ecoSPEARS has a cumulative buyout schedule