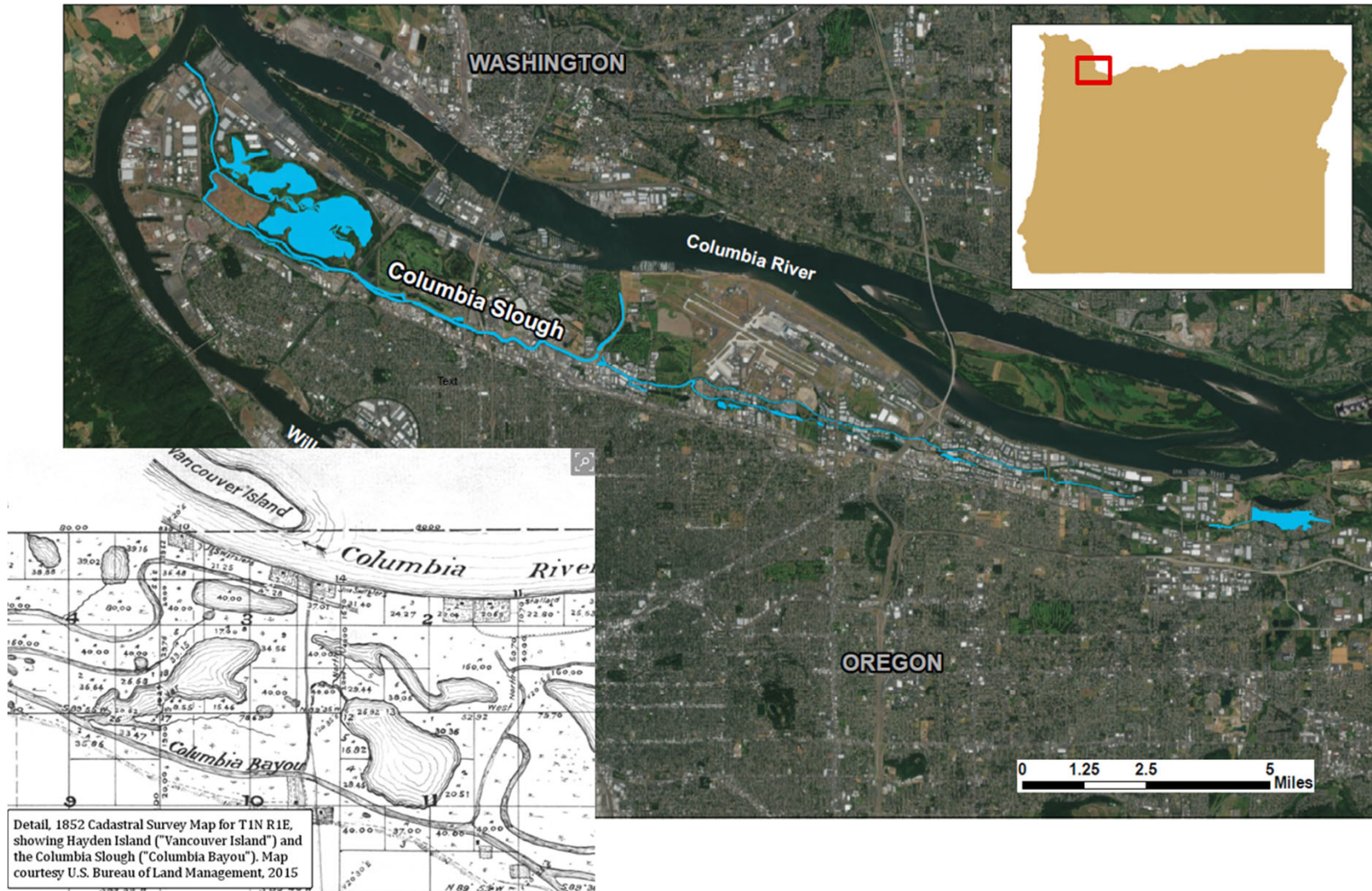


Battelle – Sediments Conference 2019

Columbia Slough Source Control  
Program Assessment and  
Development:  
Managing Short-term Targets to  
Achieve Cleanup Objectives

February 12, 2019

# Columbia Slough



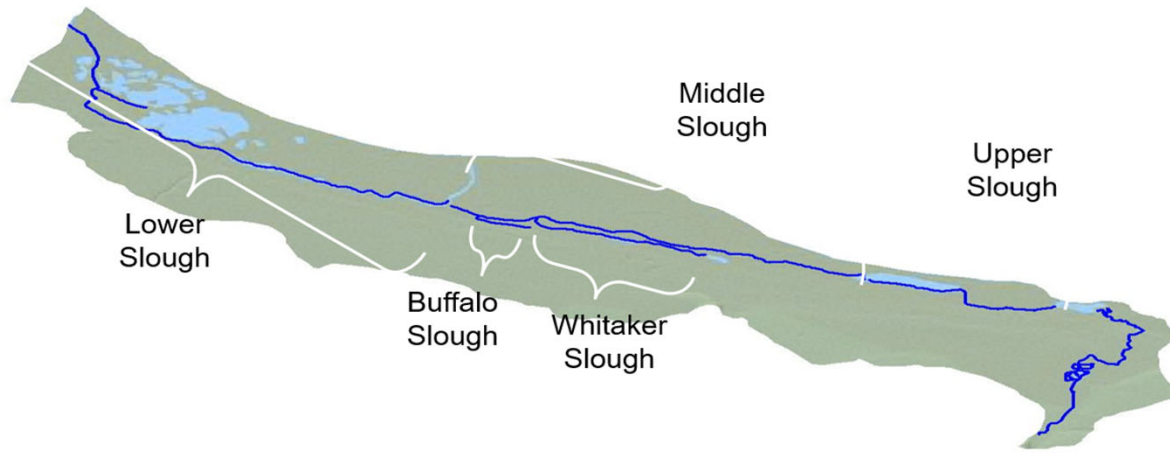
# 1917



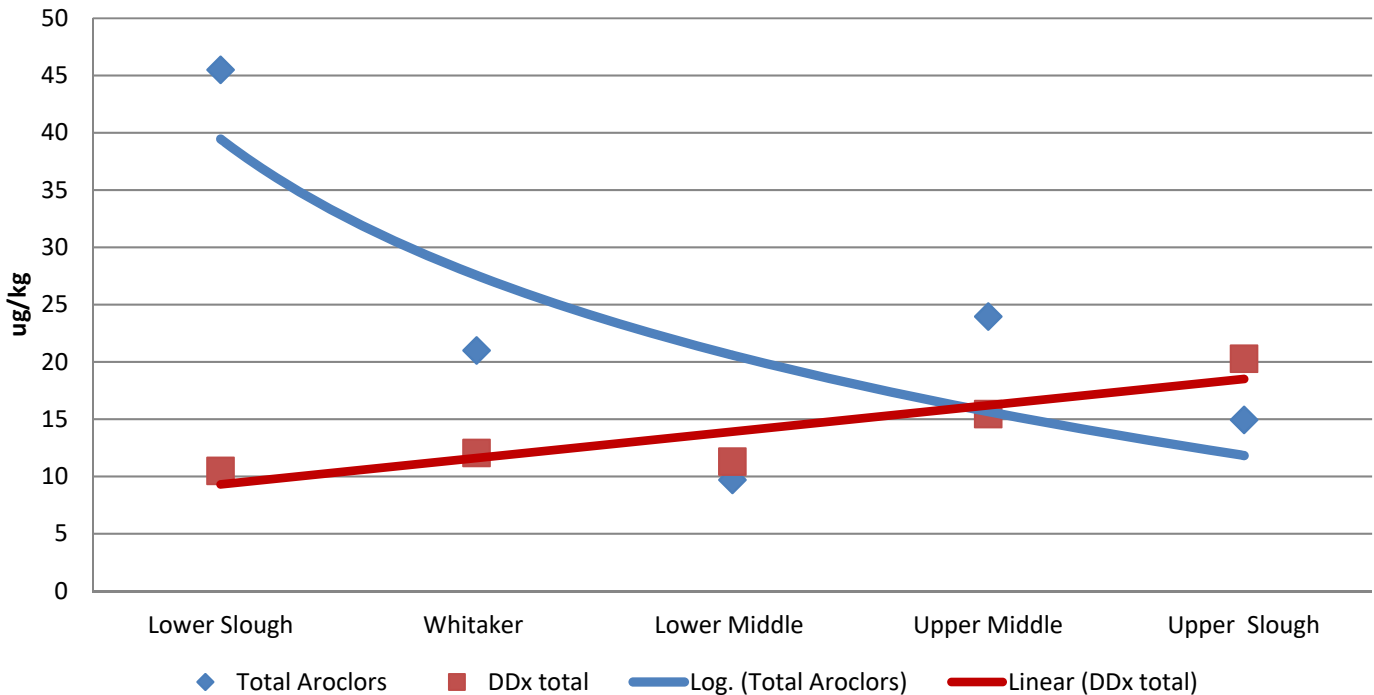
*Columbia Slough, looking West from bridge 1 1/2 miles from h*

# Present Day





### Total Aroclor PCBs and Total DDx



# Management Process

Collecting and Evaluating Data

Developing and Communicating  
Short Term Goals

Overseeing Source Control  
Implementation at Upland Sites

Actively Remediating Sediment

Monitoring for Long Term Natural  
Recover within the Slough



# Flexibility

Short Term Goals

Site-by-Site/Task Basis

Long Term Goals

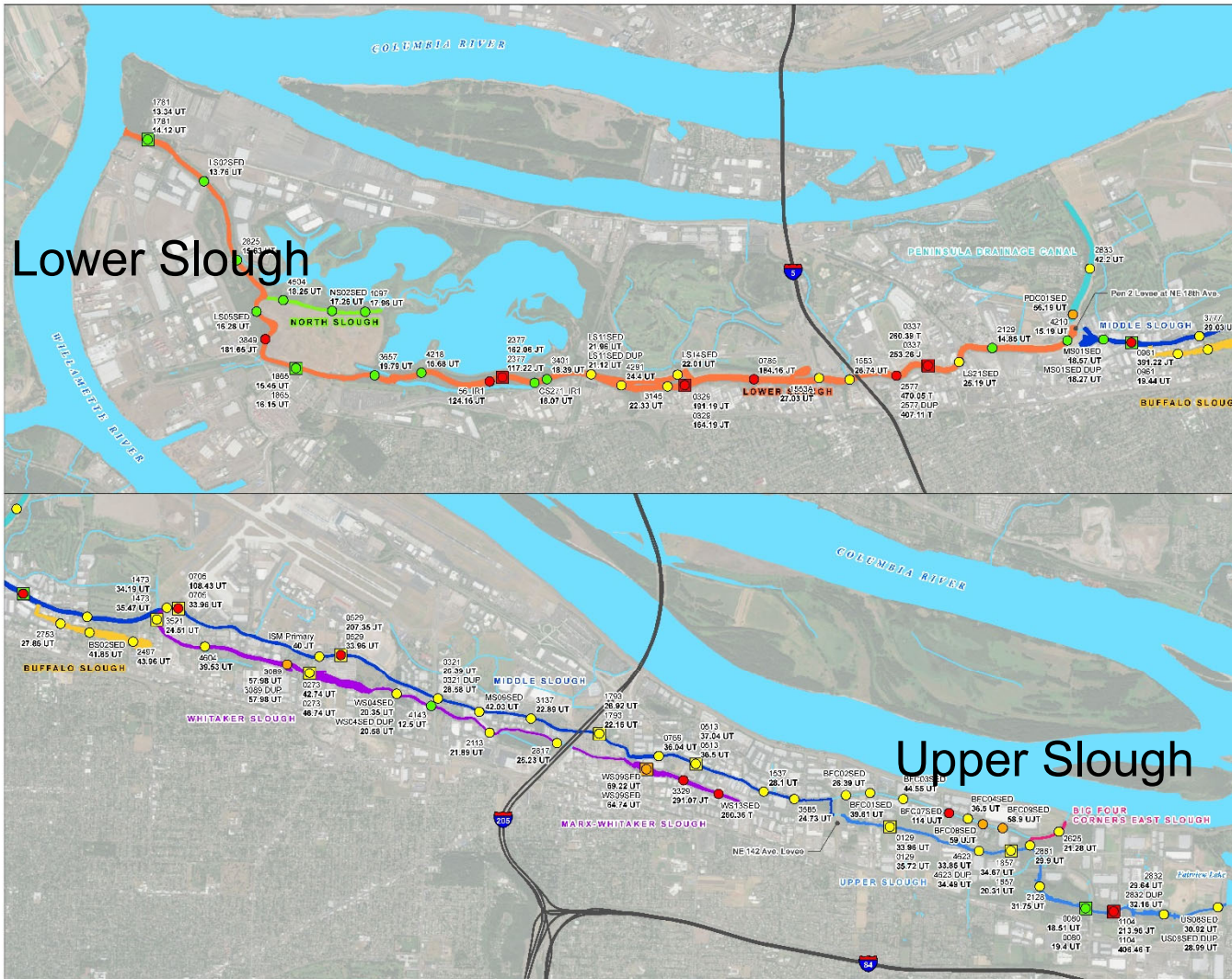
Adaptable as new data comes in



# Communication

Routine Check-ins with  
RPs and Stakeholders

# Collect and Evaluate Data



**FIGURE 4-125**  
**2017 Total PCB Aroclors**  
**Concentrations**  
 Columbia Slough Sediment  
 Data Report – 2017 Sampling

**LEGEND**

**Sample Type**

- Sediment, 0-2 cm
- Sediment, 0-10 cm

**Total PCB Aroclors, ug/kg**

- 0-10: Lower than the screening level value (SLV)
- >10-20: Up to 2x the SLV
- >20-50
- >50-100
- >100

**Slough Reach**

- Big Four Corners East Slough
- Buffalo Slough
- Lower Slough
- Middle Slough
- North Slough
- Peninsula Drainage Canal
- Upper Slough
- Whitaker Slough

**All Other Features**

- Freeway
- Watercourse
- Waterbody

**SLVs:**

- Lower Slough: 27 ug/kg
- Whitaker Slough: 10 ug/kg
- Sloughwide: 24 ug/kg

**NOTES:**

- All results in ug/kg
- DEQ's 2014 screening level value for Aroclor 1254, was used as it is the most frequently detected Aroclor.

J: Estimated  
 T: Total  
 U: Non Detect

0 1,900 3,800 5,700  
 Feet

Date: June 5, 2018  
 Data Sources: ESRI, USGS, Metrc 2018

Document Path: Y:\0110\_BESS\Source\_Figures\13\_CS\_2017\_Sediment\Sediment\_Data\_Report\Figures\4-125\_Total\_PCB\_Aroclors.mxd

# Develop and Communicate Short Term Goals

City of Portland: Source Investigations

EPA: Assistance for Site Assessments

DEQ/RP's: Upland Source Control

PPA: New Property Owners



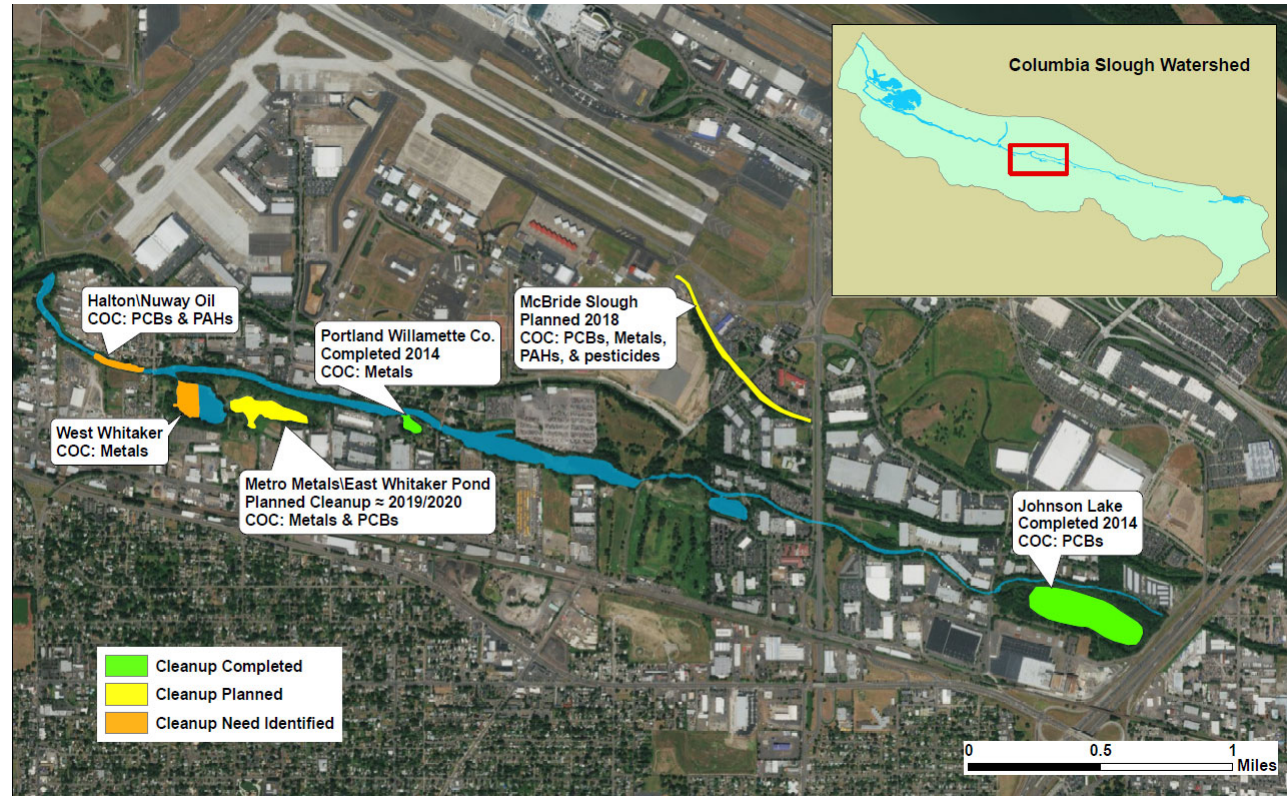
# Focus on High Priority Sites

Coordinate with City Industrial Stormwater staff on-site inspections and information sharing



Ensure cleanup site actions address source control

# Overseeing Source Control Implementation and Actively Remediating Sediment



Source Control near or at completion at 23 sites  
Currently focused on 17 additional sites

# Johnson Lake Cleanup



State of Oregon  
Department of  
Environmental  
Quality



## Sources

Overflow from historical settling ponds and drainage from upland substation

Stormwater discharge to east end of the lake



## Risks

To organisms that live in the sediment

Eating fish with elevated PCBs in tissue

# 2010 Upland Soil Excavation



# Stormwater Swale Today



# 2012 Sediment Remedy

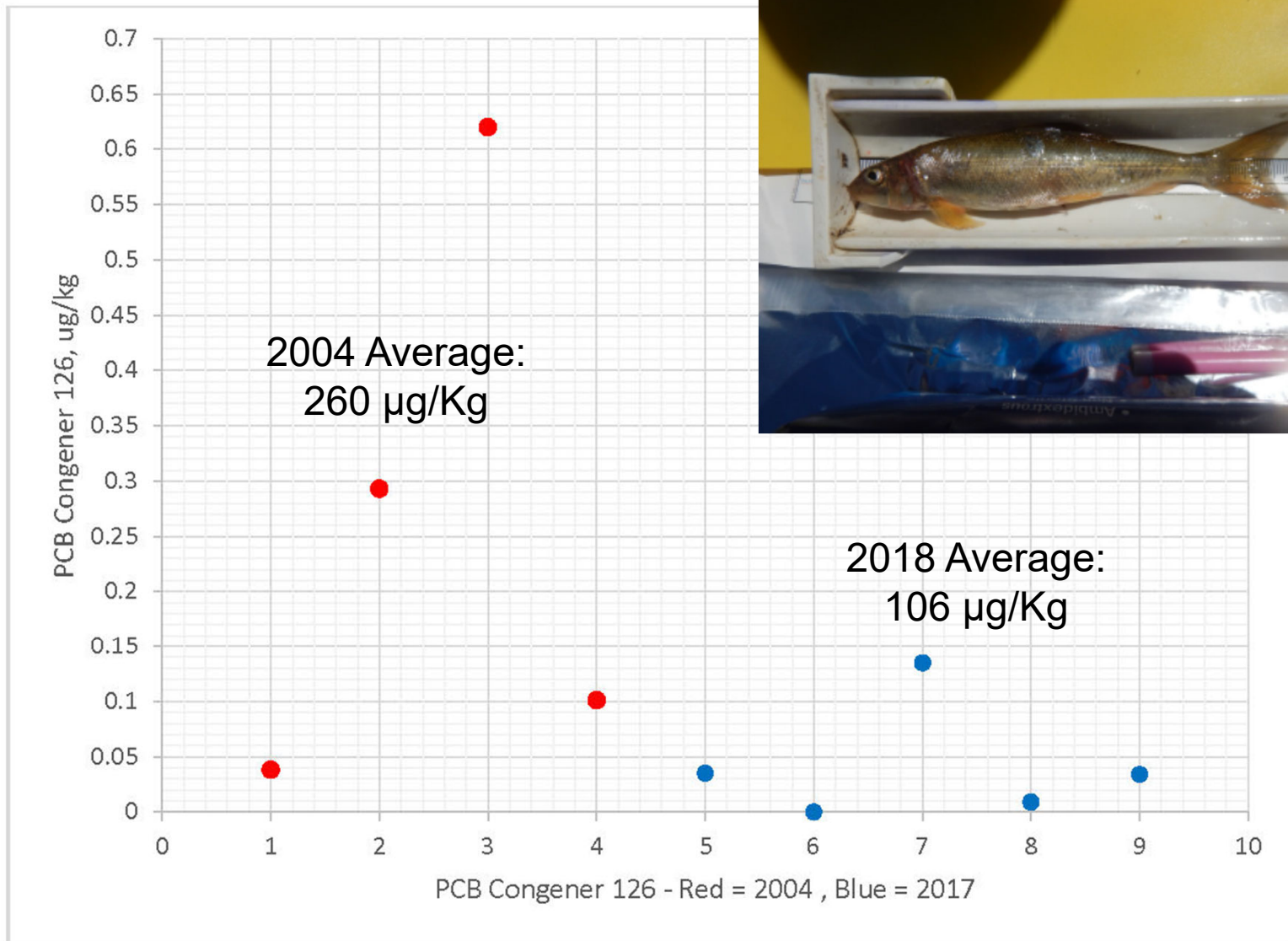
2, 4-inch lifts placed with a spreader barge

Minimum 6-inch sand cap of clean sand over most of lake sediment



Benthic community and mussels allowed to recolonize in small uncapped area of the lake

# PCBs detected in 2017 < 2004





# LTM Requirements

Maintain warning signs for fishers

Ongoing cap inspections (every 5-years)

Cap maintenance  
as needed

Next fish tissue  
sampling event  
will be in Fall  
2022



# September 2018 Emergency Action Incident:

Transformer fire caused a power outage. Shut down the electrical to the Plant while fighting the fire.

About 320,000 gallons of one-pass cooling process water filled the plant's basement and then overflowed into storm drains that discharged to Johnson Lake/Columbia Slough.



Presentations at  
Community  
Meetings

Fact Sheet

Fish Advisories

Notifications:

Monthly updates to the City,  
BES and NPDES  
Coordinator  
MCDD

## Fact Sheet

### Johnson Lake Cleanup

Update: June 2018

#### Background

Johnson Lake is a 17.6 acre lake located north of NE Columbia Blvd, west of I-205, and south of the Columbia Slough. The lake is directly connected to Whitaker Slough, an arm of the Columbia Slough.

Sediment sampling conducted by the City of Portland in 1995 and follow-up investigations by Owens-Brockway Glass Container Inc. in 2004 detected elevated concentrations of several contaminants, including polychlorinated biphenyls (PCBs), in the lake on an adjacent shoreline.

Under a voluntary agreement with DEQ, Owens-Brockway completed an environmental cleanup of contaminated lake sediment and shoreline soil in 2014.

This fact sheet provides information on the completed cleanup and long-term monitoring activities through 2017. For additional information, visit <http://bit.ly/JohnsonLakeCleanup>

#### Shoreline soil cleanup

In October 2009, Owens-Brockway excavated about



Swale completion (2011)

#### Lake sediment sand cap

In 2012, Owens-Brockway placed about 25,000 tons of sand over the contaminated Johnson Lake sediment, which resulted in a minimum six-inch thick cap. The cap material was placed hydraulically from a spreader barge, which limited disturbance of the existing bottom sediment in the lake.



State of Oregon  
Department of  
Environmental  
Quality

Northwest Region  
Cleanup Program  
700 NE Multnomah St.,  
Suite 600  
Portland, OR 97232  
Phone: 503-229-6802  
800-452-4011  
Fax: 503-229-6945  
Contact: Heidi Nelson  
[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)

DEQ is a leader in restoring,  
maintaining and enhancing  
the quality of Oregon's air,  
land and water.



State of Oregon  
Department of  
Environmental  
Quality

# Questions?



Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us).