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Bradford Island CERCLA* Site

SEDIMENT REMOVAL Non-Time Critical Action October 2007

Mark Dasso
Project Manager

* Comprehensive Environmental Response,
Compensation and Liability Act



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AGENDA

- Project Goals
- Stakeholder Involvement
- History
- Sediment Removal
- Water Quality Monitoring
- Remedial Investigation (Update)



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REMOVAL GOALS

- ◆ Remove large percentage of PCBs (94%)
- ◆ Very effective at risk reduction
- ◆ Compatible with future in-water remedial actions
- ◆ May achieve adequate protection levels without further action (conservative factors used in design)
- ◆ Can be done using standard methods
- ◆ Least cost (approx 50% less than any other alternative)



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STAKEHOLDER INVOLVEMENT



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STAKEHOLDER INVOLVEMENT

- Technical Advisory Group (TAG)
 - ◆ OR Department of Environmental Quality
 - ◆ US Fish & Wildlife Service
 - ◆ National Marine Fisheries Service
 - ◆ Corps of Engineers (Seattle, Portland)
 - ◆ Tribal (Umatilla, Yakama, Nez Perce, Grand Rhonde, Warm Springs and Cowlitz)
 - ◆ Bonneville Power Administration
 - ◆ Columbia River Inter-Tribal Fish Commission



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STAKEHOLDER INVOLVEMENT

- Community Involvement Committee (CIC);
9 Volunteer Members
 - ◆ City of Cascade Locks (2)
 - ◆ City of North Bonneville
 - ◆ Skamania County (2)
 - ◆ Columbia Riverkeeper
 - ◆ Lower Columbia River Estuary Partnership
 - ◆ Nez Perce Tribe
 - ◆ Columbia River Gorge National Scenic Area



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HISTORY

BRADFORD ISLAND





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Bradford Island landfill and shoreline area (looking east)





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Bradford Island Project Area



1995 aerial photograph of eastern portion of Bradford Island.



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Electrical equipment removed in 2002





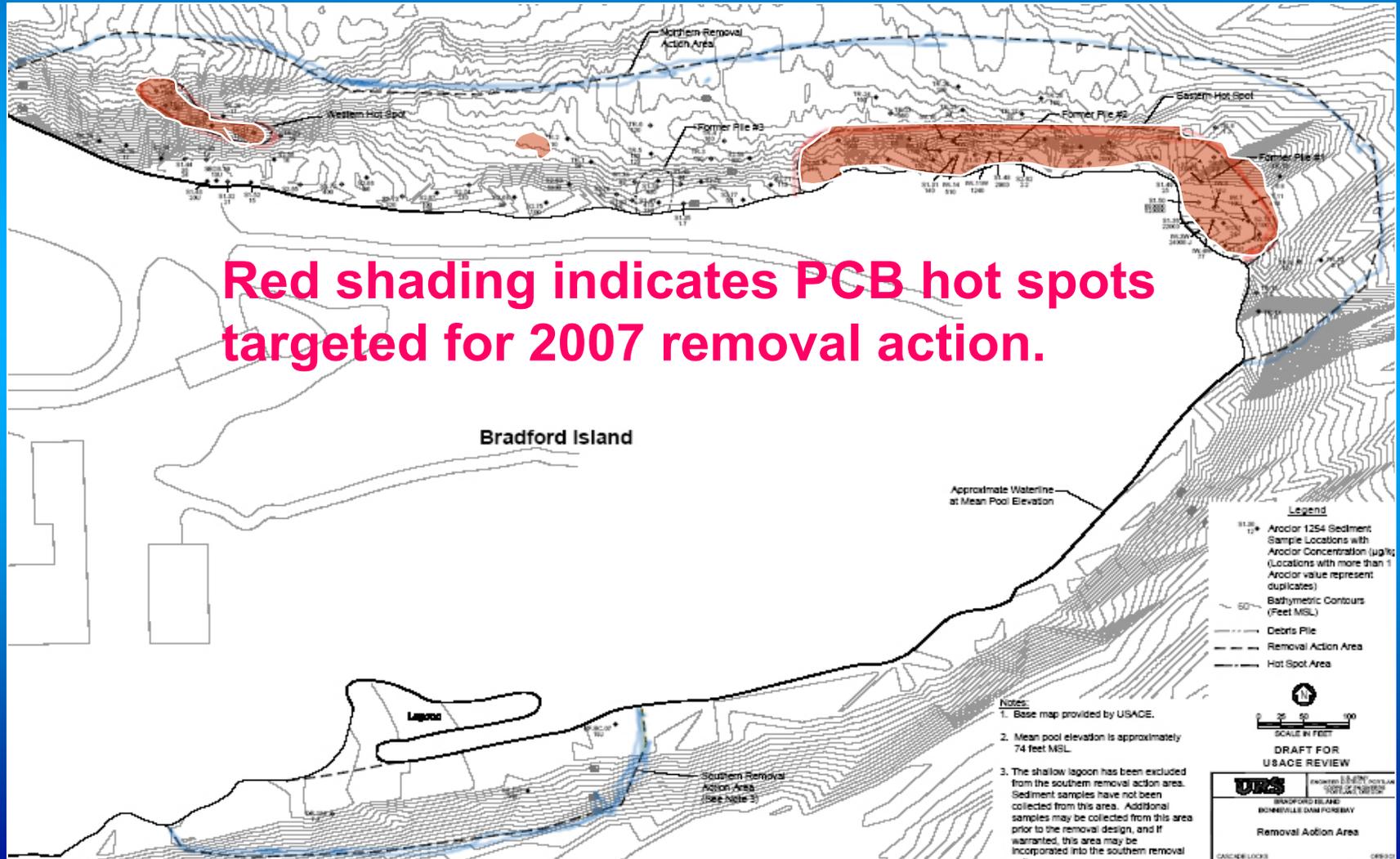
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SEDIMENT REMOVAL



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2007 PCB SEDIMENT REMOVAL





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SEDIMENT REMOVAL

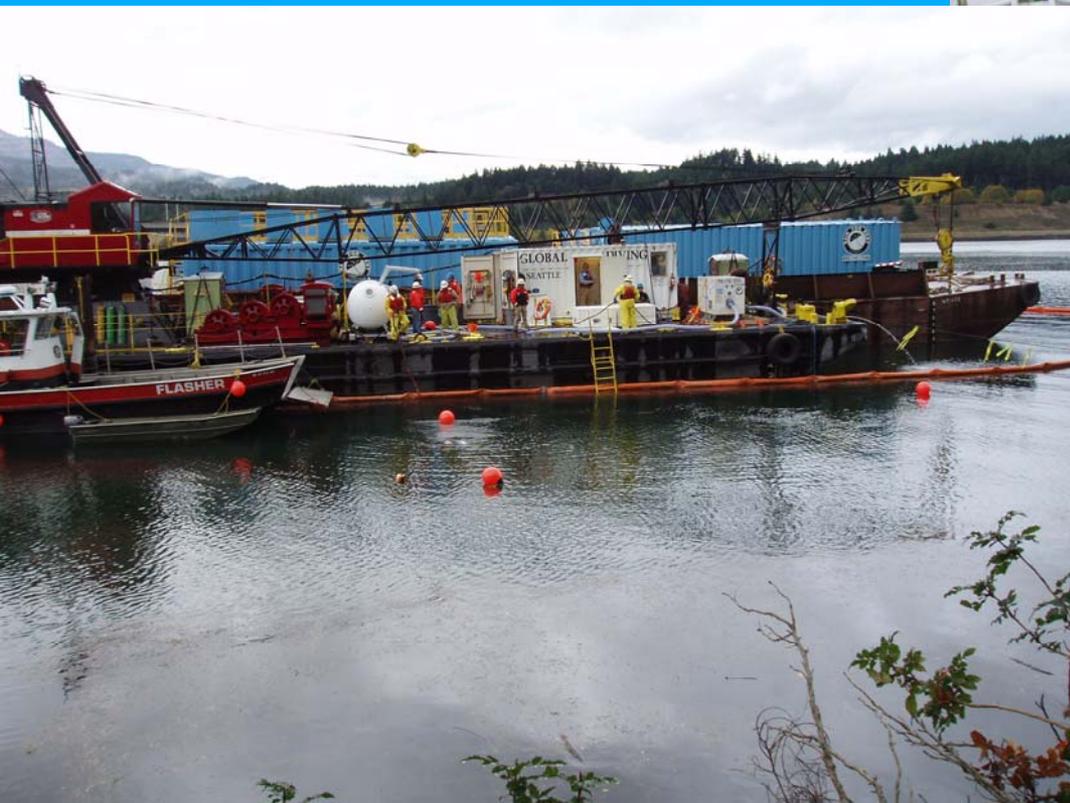
- Diver Assisted Suction of Bottom Sediments
 - ◆ Working from clean areas
 - ◆ Move cobbles to remove sediments underneath
- Return Water
 - ◆ Settlement through 17 tanks, (dewatering, flocculant, weir)
 - ◆ 4 Sand Filters and 2 Bag Filters Tanks (remove remaining particulates)
 - ◆ Activated Carbon Filter (removes dissolved PCBs)
- Final Placement (Disposal)
 - ◆ Sampled and characterized for transport and disposal to Title D Landfill





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DIVING OPERATIONS





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WATER QUALITY MONITORING



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SPMD Sample Locations

Deployment Phase I (Baseline): 8/20/08 to 9/10/08

Deployment Phase II: 10/1/08 to 10/22/08

Deployment Phase III: 10/22/08 to 11/2/08





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Sediment Removal Water Quality Monitoring

	Goal	Result
Turbidity	<10% increase in turbidity downstream of dredging	All < 2.6 NTU No sig. difference between upstream and downstream
Dredge Effluent Sampling	PCBs below 24.6 ppb (ng/L) in effluent	All samples non-detect at 5 ng/L
SPMDs	No increase in PCBs downstream of dredging	All < 55 pg/L No sig. difference between upstream and downstream



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REMEDIAL INVESTIGATION (Update)



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SCHEDULE

- 2007 – Complete Work Plan (September)
- **2008 – Complete sampling**
 - ◆ *Upland sampling (Mar '08 - Jan '09)*
 - ◆ *In-water sampling (Feb '08 – Sep '08)*
- 2009 – Risk assessment
- 2010 – Record of decision (ROD)
- 2010 – Design of clean-up (remedial) actions
- 2011 – Implement actions



Reference
Sampling Area

Cascade Locks

Columbia River

Forebay
Sampling Area

Cascades Island

Bonneville Dam
and Spillway

Bradford Island

Robins Island

Bonneville

North
Bonneville

Hamilton Island

Ives Island

Pierce Island

Downstream Sampling Area





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Total PCB Aroclor Data in Post Removal Samples

	Sediment	Clam	Crayfish	Smallmouth Bass (congener data)
Forebay	<i>19 samples</i> 17 non-detect 2 detections ≤ 27 ppb (dry)	<i>19 samples</i> 18 samples ≤ 30 ppb 1 sample 120 ppb (wet)	<i>17 samples</i> all non-detect	<i>17 samples (pre- removal)</i> detected in all samples 32 to 26,502 ppb (wet)
Reference	<i>18 samples</i> all non-detect	<i>18 samples</i> detected in all samples 31 to 39 ppb (wet)	<i>19 samples</i> all non-detect	<i>19 samples</i> detected in 7 analyzed 22 to 164 ppb (wet)
Eagle Creek Sediment	<i>2 samples</i> 1 non-detect 1 detection of 76 ppb (dry)	--	--	--
Downstream Sediment	<i>6 samples</i> all non-detect	--	--	--