Pacific Coast Congress
37th Semi-Annual Conference

Port of Edmonds Boatyard
Good Environmental Stewards
Presented by: Marla Kempf

Port of Edmonds

Activity and Financials

Annual Totals	2008	2009	2010
Stall Usage	**2437**	**2227**	**1694**
Travel-lift to Yard	**288**	**273**	**265**
Sling-time	**198**	**144**	**163**

	2008	2009	2010
Revenue	211,680	213,855	187,683
Cost of Sales	2,635	2,778	2,154
Net	209,045	211,077	185,529
Expenses	124,032	117,413	125,977
Net	85,013	93,664	59,552
Depreciation	55,341	55,188	54,193
Net Income/(Loss) Before O/H, Interest	29,672	38,476	5,359
Overhead	20,967	24,875	27,290
Net Income/(Loss) Before Interest	8,705	13,601	(21,931)

PORT OF EDMONDS

From Water to Yard

- No boat goes to the yard without pressure wash
- Every boat required to pay for ground tarp
- Every boat owner must sign BMP's and Hold Harmless
- Violation fees for not complying with BMP's

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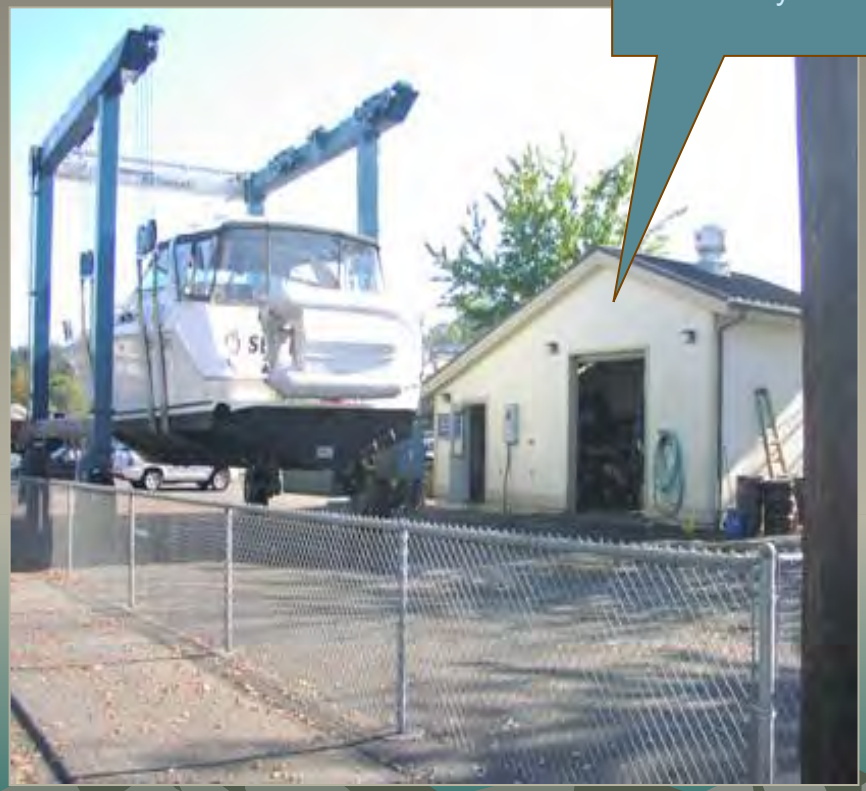
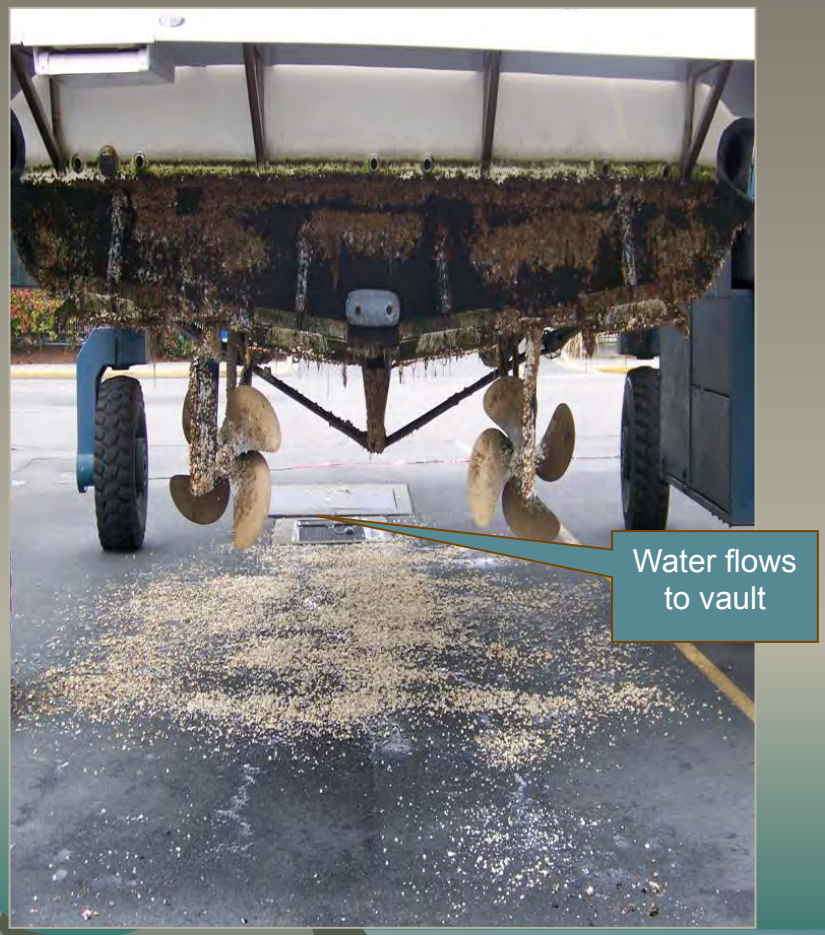
Before going to the boatyard





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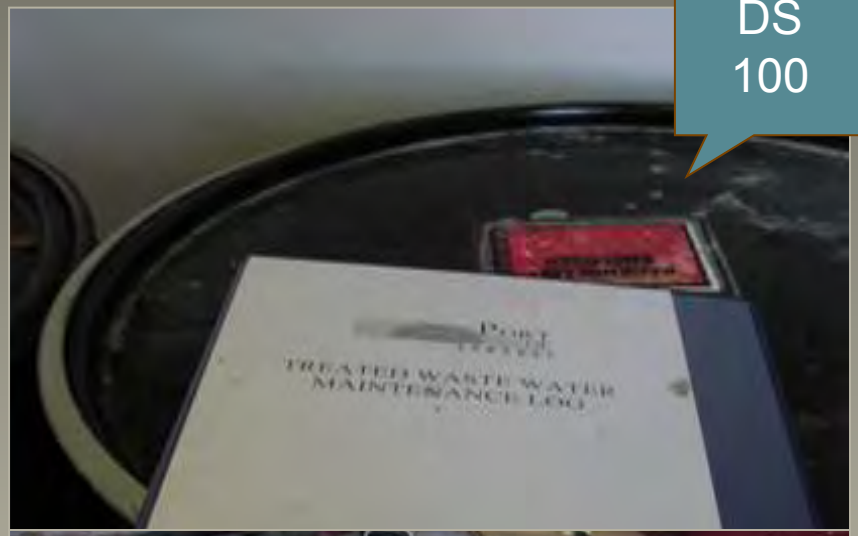
Treatment Center



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Boat is moved to boatyard

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Boat fully enclosed for bottom work

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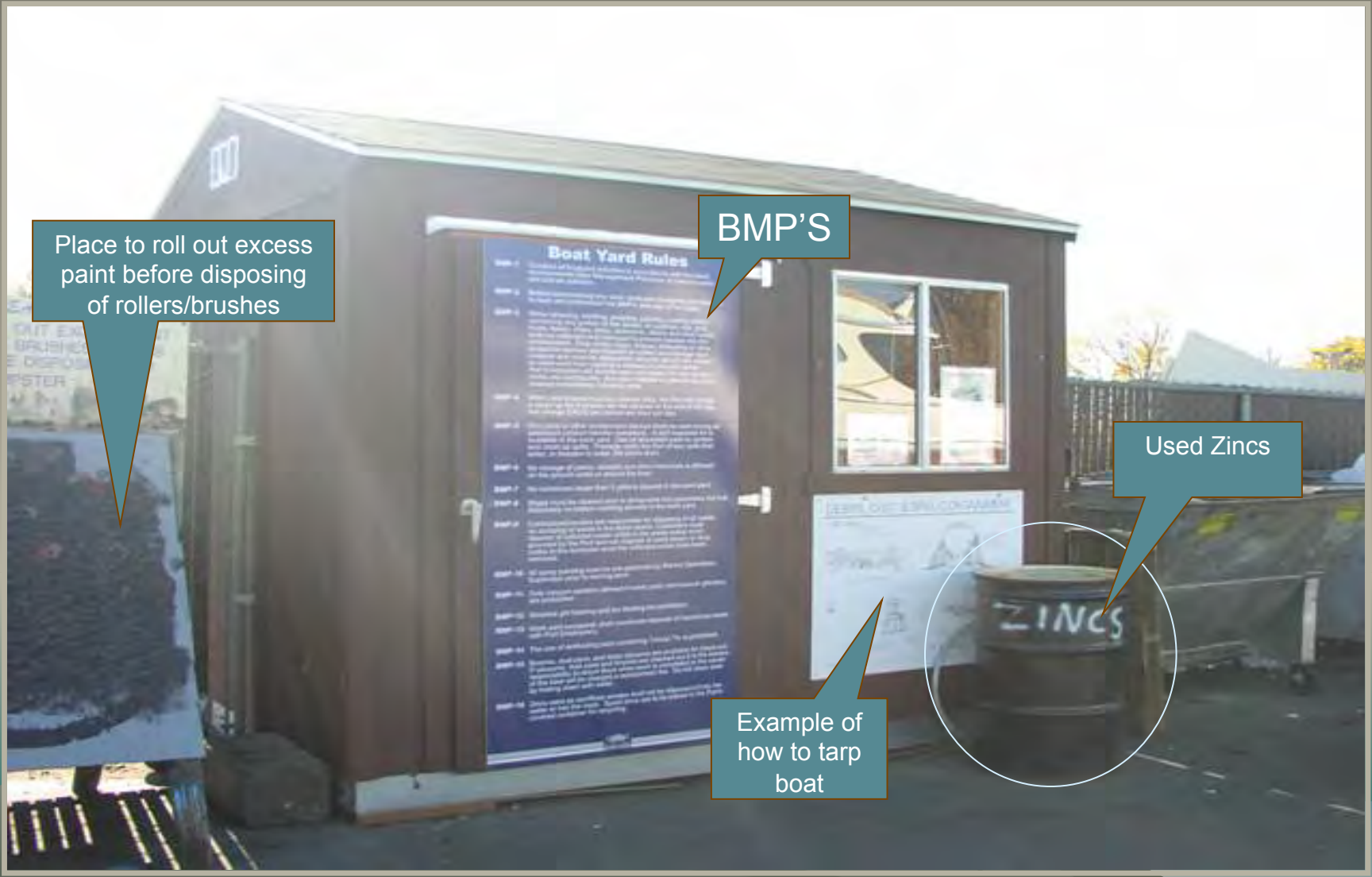
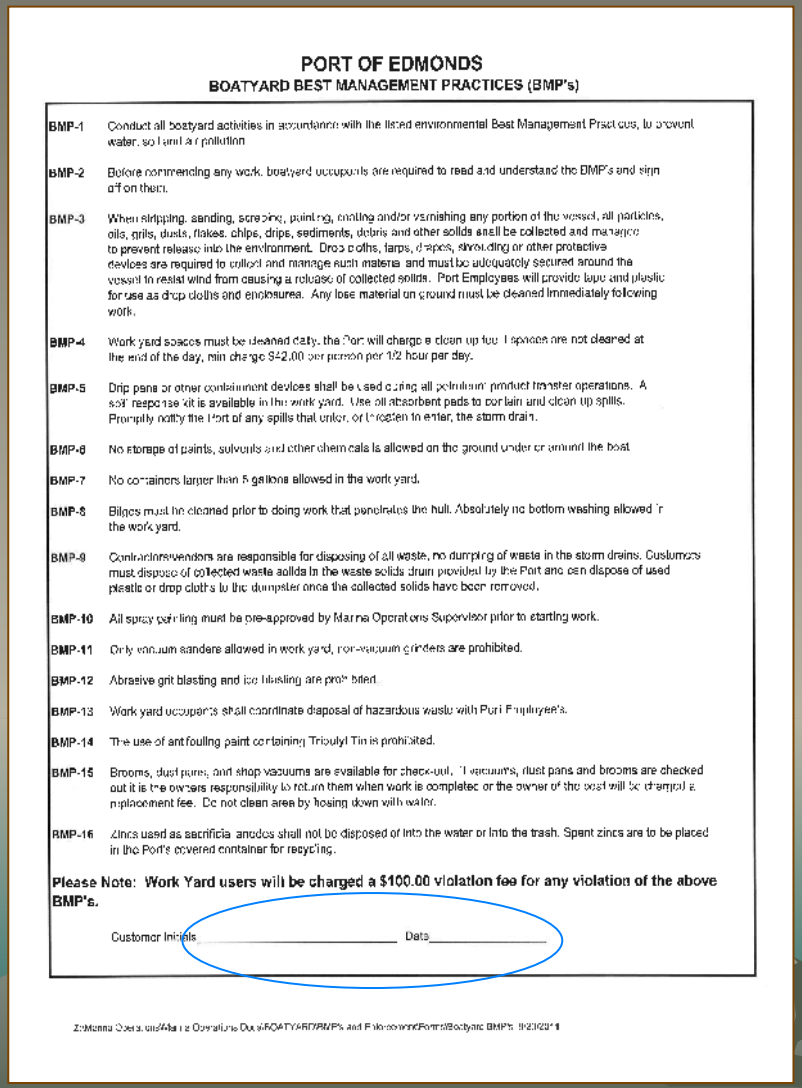
BMP Building



Customer Signs
BMP's and Hold Harmless



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BOATYARD BEST MANAGEMENT PRACTICES (BMP's)

BMP-1 Conduct all boatyard activities in accordance with the listed environmental Best Management Practices, to prevent water, soil and air pollution

BMP-2 Before commencing any work, boatyard occupants are required to read and understand the BMP's and sign off on them.

BMP-3 When stripping, sanding, scraping, painting, coating and/or varnishing any portion of the vessel, all particles, oils, grits, dusts, flakes, chips, drips, sediments, debris and other solids shall be collected and managed to prevent release into the environment. Drop cloths, tarps, drapes, shrouding or other protective devices are required to collect and manage such materials and must be adequately secured around the vessel to resist wind from causing a release of collected solids. Port Employees will provide tape and plastic for use as drop cloths and enclosures. Any lose material on ground must be cleaned immediately following work.

BMP-4 Work yard spaces must be cleaned daily, the Port will charge a clean up fee if spaces are not cleared at the end of the day, min charge $42.00 per person per 1/2 hour per day.

BMP-5 Drip pans or other containment devices shall be used during all petroleum product transfer operations. A spill response kit is available in the work yard. Use all absorbent pads to contain and clean up spills. Promptly notify the Port of any spills that enter, or threaten to enter, the storm drain.

BMP-6 No storage of paints, solvents and other chemicals is allowed on the ground under or around the boat

BMP-7 No containers larger than 5 gallons allowed in the work yard.

BMP-8 Bilges must be cleaned prior to doing work that penetrates the hull. Absolutely no bottom washing allowed in the work yard.

BMP-9 Contractors/vendors are responsible for disposing of all waste, no dumping of waste in the storm drains. Customers must dispose of collected waste solids in the waste solids drum provided by the Port and can dispose of used plastic or drop cloths in the dumpster once the collected solids have been removed.

BMP-10 All spray painting must be pre-approved by Marina Operations Supervisor prior to starting work.

BMP-11 Only vacuum sanders allowed in work yard, non-vacuum grinders are prohibited.

BMP-12 Abrasive grit blasting and ice blasting are prohibited.

BMP-13 Work yard occupants shall coordinate disposal of hazardous waste with Port Employee's.

BMP-14 The use of ant fouling paint containing Tributyl Tin is prohibited.

BMP-15 Brooms, dust pans, and shop vacuums are available for check-out. If vacuums, dust pans and brooms are checked out it is the owners responsibility to return them when work is completed or the owner of the boat will be charged a replacement fee. Do not clean area by hosing down with water.

BMP-16 Zincs used as sacrificial anodes shall not be disposed of into the water or into the trash. Spent zincs are to be placed in the Port's covered container for recycling.

Please Note: Work Yard users will be charged a $100.00 violation fee for any violation of the above BMP's.

Customer Initials _____ Date_____

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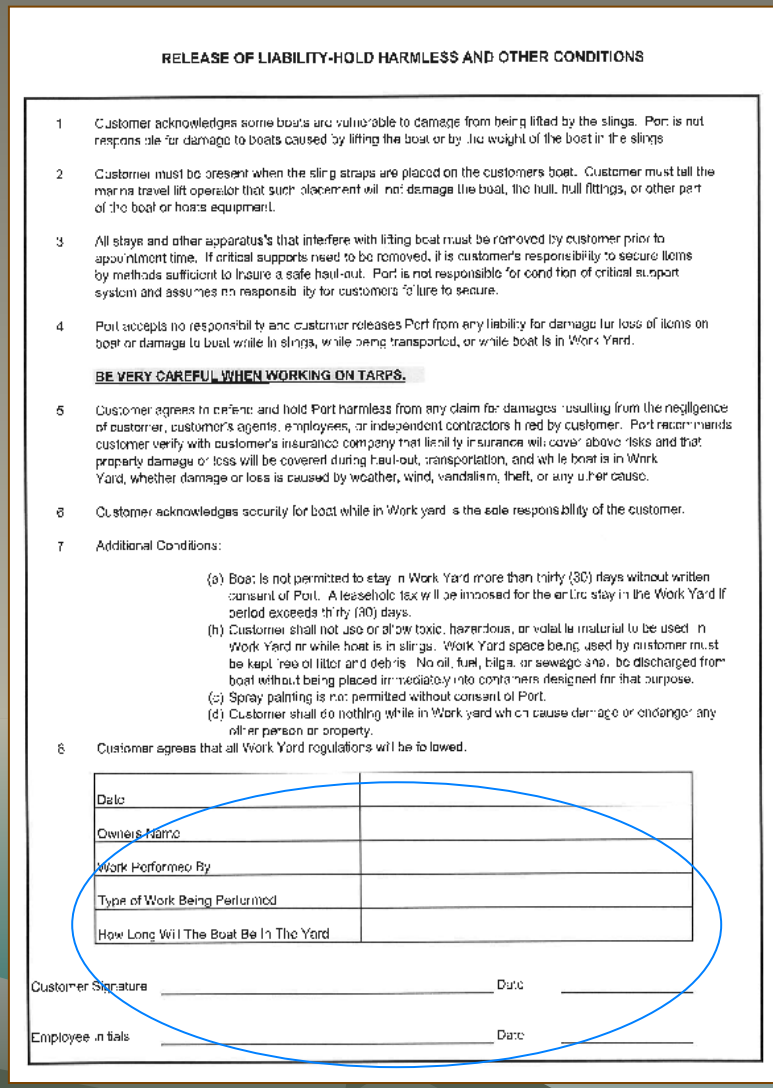


RELEASE OF LIABILITY-HOLD HARMLESS AND OTHER CONDITIONS

1 Customer acknowledges some boats are vulnerable to damage from being lifted by the slings. Port is not responsible for damage to boats caused by lifting the boat or by the weight of the boat in the slings

2 Customer must be present when the sling straps are placed on the customers boat. Customer must tell the marina travel lift operator that such placement will not damage the boat, the hull, hull fittings, or other part of the boat or boats equipment.

3 All stays and other apparatus's that interfere with lifting boat must be removed by customer prior to appointment time. If critical supports need to be removed, it is customer's responsibility to secure items by methods sufficient to insure a safe haul-out. Port is not responsible for condition of critical support system and assumes no responsibility for customers failure to secure.

4 Port accepts no responsibility and customer releases Port from any liability for damage for loss of items on boat or damage to boat while in slings, while being transported, or while boat is in Work Yard.

BE VERY CAREFUL WHEN WORKING ON TARPS.

5 Customer agrees to defend and hold Port harmless from any claim for damages resulting from the negligence of customer, customer's agents, employees, or independent contractors hired by customer. Port recommends customer verify with customer's insurance company that liability insurance will cover above risks and that property damage or loss will be covered during haul-out, transportation, and while boat is in Work Yard, whether damage or loss is caused by weather, wind, vandalism, theft, or any other cause.

6 Customer acknowledges security for boat while in Work yard is the sole responsibility of the customer.

7 Additional Conditions:

(a) Boat is not permitted to stay in Work Yard more than thirty (30) days without written consent of Port. A leasehold tax will be imposed for the entire stay in the Work Yard if period exceeds thirty (30) days.
(b) Customer shall not use or allow toxic, hazardous, or volatile material to be used in Work Yard or while boat is in slings. Work Yard space being used by customer must be kept free of litter and debris. No oil, fuel, bilge, or sewage shall be discharged from boat without being placed immediately into containers designed for that purpose.
(c) Spray painting is not permitted without consent of Port.
(d) Customer shall do nothing while in Work yard which cause damage or endanger any other person or property.

8 Customer agrees that all Work Yard regulations will be followed.

Date	
Owners Name	
Work Performed By	
Type of Work Being Performed	
How Long Will The Boat Be In The Yard	

Customer Signature _____ Date _____

Employee Initials _____ Date _____

PORT OF EDMONDS

Easy to Employ Best Management Practices

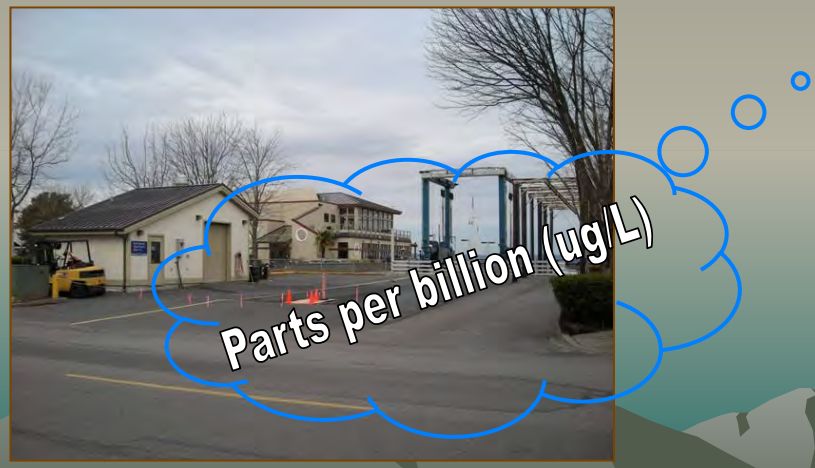
General Overview of 2005 Boatyard Permit Requirements

- Requires water sampling (specified months)
- Meeting benchmarks for copper, zinc, lead, total suspended solids, pH levels, oil and grease
- Sending sample results to DOE
- Corrective action if above benchmarks
- Three levels of response
  - Level One (each time) – inspection, identification of source, action taken to correct, brief summary submitted with monitoring report
  - Level Two (after 4 failures) – investigate, prepare source control report outlining potential treatment practices w/i 3 months.
  - Level Three (after 6 failures) – engineering report including design and construction info for treatment devices to be installed.

2005 Boatyard Permit
Two Kinds of Water

Pressure Wash Water:

- 4 water samples per year
  - Copper - 2.4 mg/L
  - Zinc - 3.3 mg/L
  - Lead - 1.2 mg/L
  - pH - w/i range of 5.0-11.0

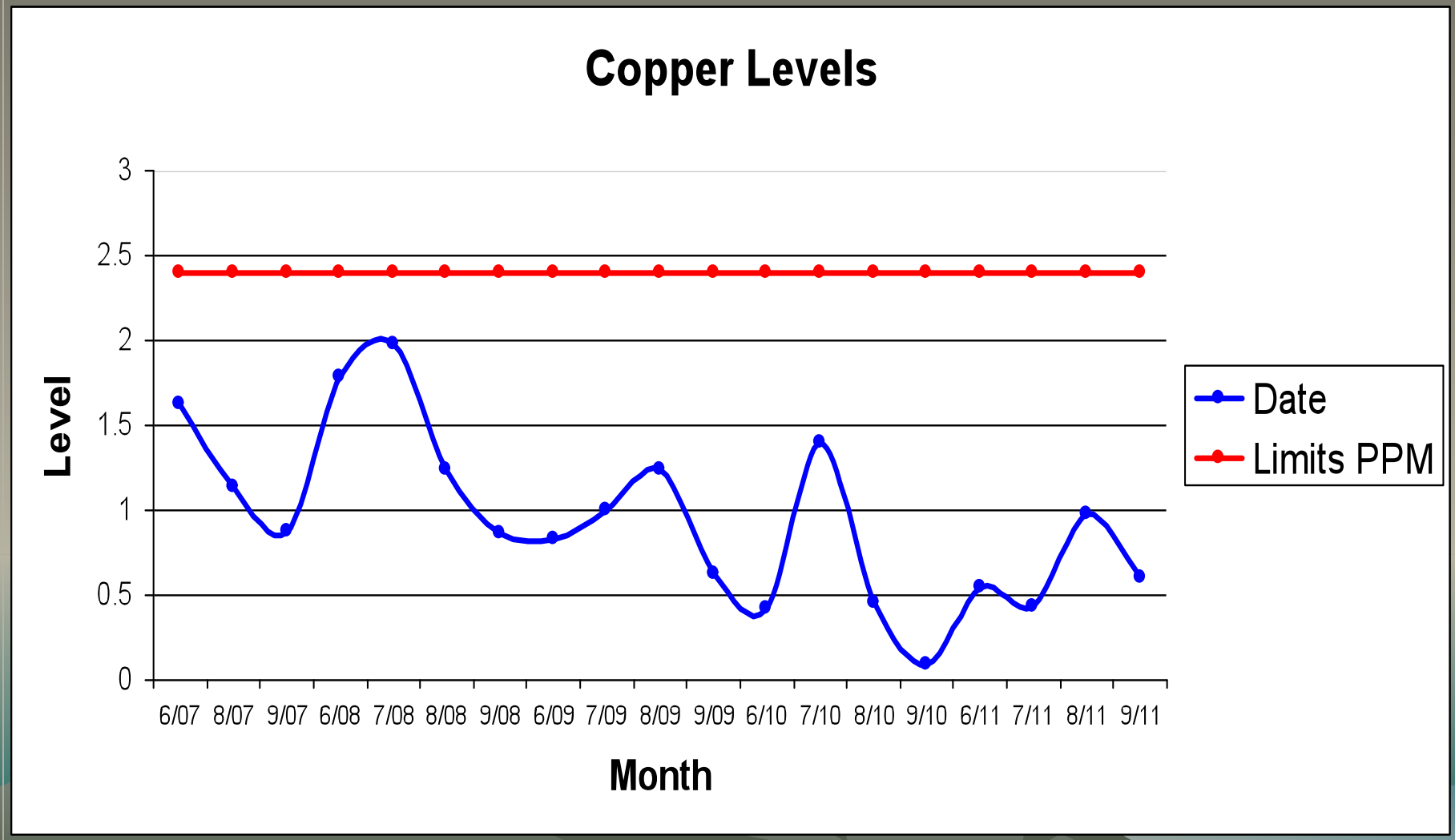


Storm water:

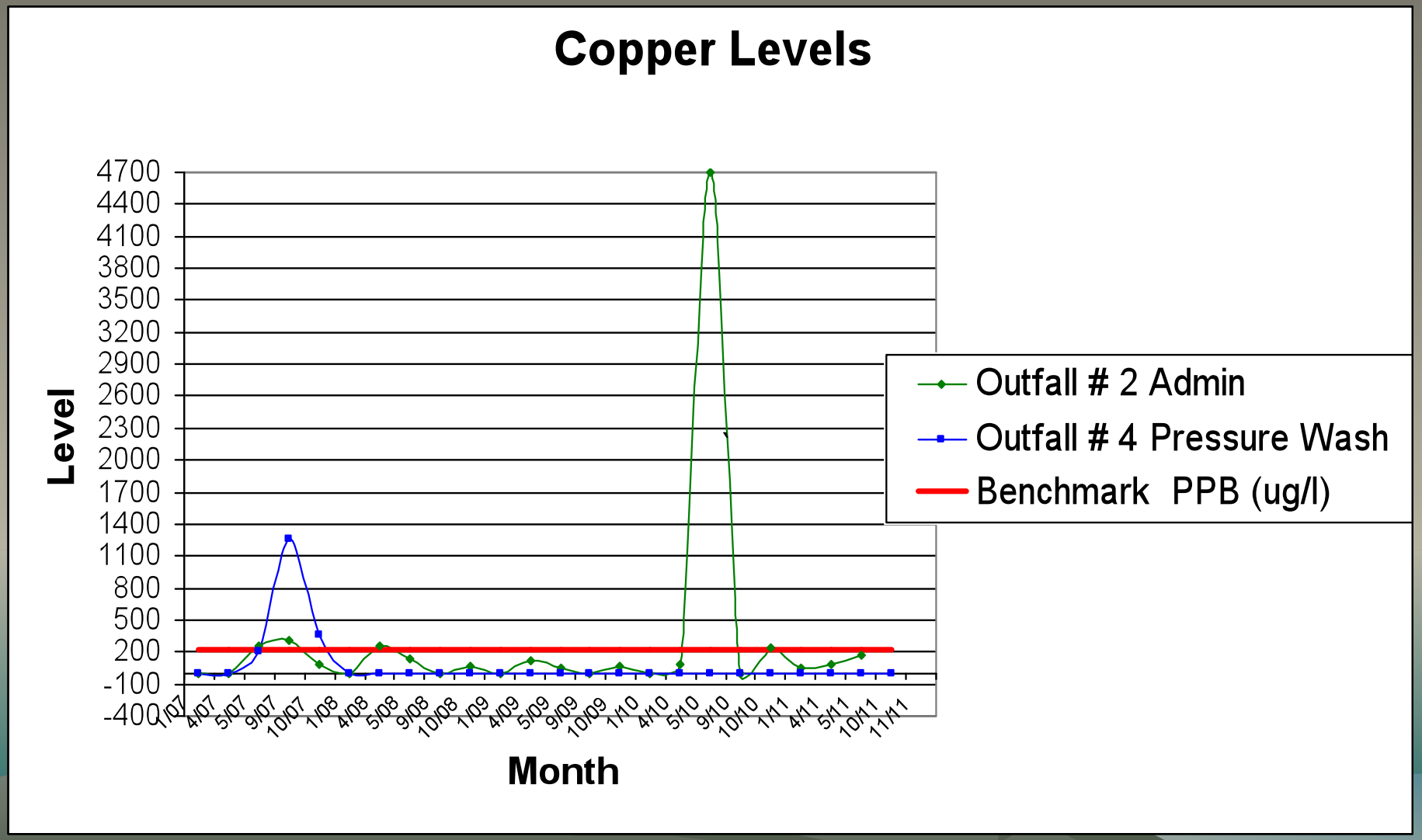
- 5 water samples per year

Copper	229		ug/L
Zinc	n/a		n/a
TSS	21.0		mg/L
Oil/Grease	6.0		mg/L

Treated Pressure Wash Water Sample Results



Storm Water Sample Results



Efforts to Improve Storm Water Discharge

- ✓ BMP building
- ✓ BMP's signed by customers before their haul-out
- ✓ Signage letting workers know that the area is subject to STRICT ENVIRONMENTAL REGULATIONS
- ✓ Oil Spill Kits throughout the boatyard
- ✓ All staff are trained on acceptable work practices and how to address violators
- ✓ Actively educate vendors through individual meetings, workshops and walk-thru's
- ★ ✓ Commission approved and staff implements a $100.00 violation fee for offenders
- ✓ Active monitoring and enforcement on a daily basis by random staff site inspections.

Efforts to Improve Storm Water Discharge

- ✓ Tenant education
- ✓ Experimentation with filtration in various catch basins
- ✓ Increased deep cleaning – vaults, oil water separator, trenches
- ✓ Storm Water Pollution Prevention Plan (SWPPP) created and updated regularly as training and requirements change.
- ★ ✓ resurfaced/seal coated pressure wash pad and entire boatyard
- ✓ purchased and actively use a self propelled scrubber/sweeper

Measurable Improvements Through BMP's

- 92% reduction of copper levels in storm water samples since 2006
- 100% reduction in discharge of copper at pressure wash pad
- 52% reduction as an industry

Still not good enough…

Nov 2005 -	New Boatyard General Permit issued
Jan 2006 -	Appeals were filed by PSA & NMTA
July 2006 -	Hearing before PCHB
Jan 2007 -	PCHB issues ruling
Feb 2007 -	NMTA appeals; PSA follows
April 2007 -	NMTA initiates settlement mtgs. w/PSA & DOE

Outcome:

- Pooled resources to fund a technology study
- DOE postpones boatyards obligation to complete Level III studies

Stormwater Treatment Technology Study

- Three Treatment Technologies and Three facilities chosen
- Test conducted between Nov 2007 and Feb 2008
  1) Ion Exchange
  2) Electro-coagulation
  3) Passive Filtration

Pilot Study

Canal Boatyard
Test Flow Rate 10 gpm

Siemens WWIX System (Wastewater Ion Exchange)

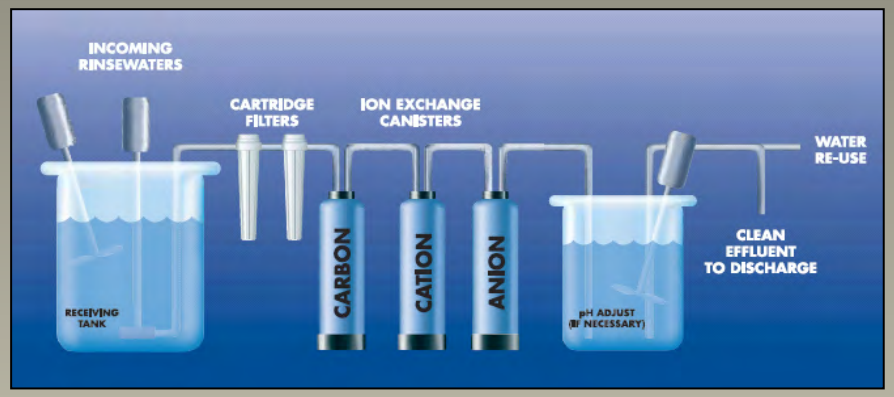


Image courtesy of Siemens Water Technologies, Inc.

CSR Marine
Test Flow Rate 13 gpm

Electro-coagulation System

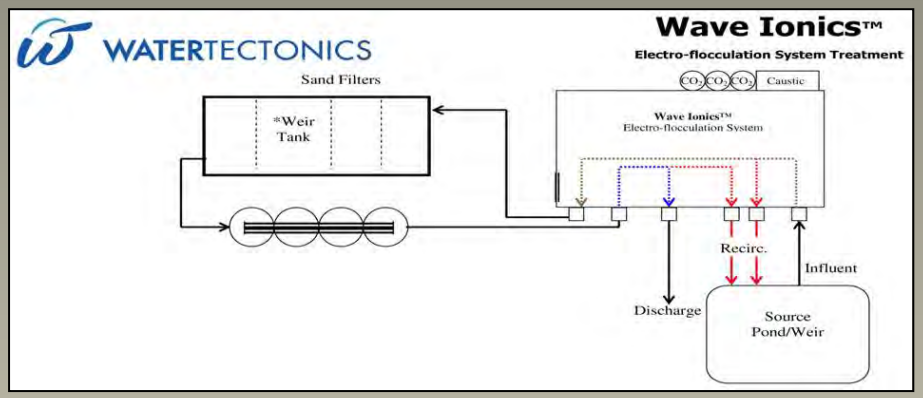


Image courtesy of WaterTectonics, Inc.

Pilot Study

Port of Edmonds
Test Flow Rate 7.5 gpm

StormwateRx Aquip Filtration System

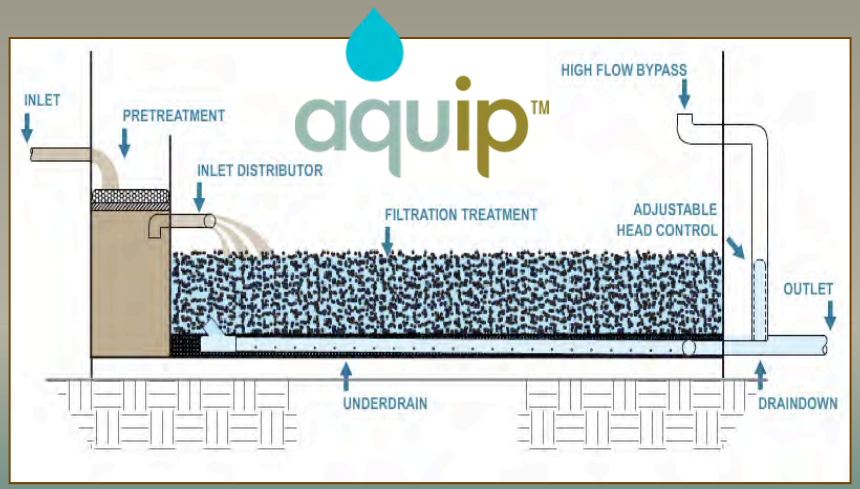


Image courtesy of StormwateRx

Stormwater Treatment Testing

- Taylor Associates Performed the Sampling and Prepared a Summary Report (March 2008)
- Samples were collected for 7 storm events for the Aquip and WWIX, and 4 Storm Events for the Wave Ionics
- It's concluded through this test that StormwateRX passive filtration performs the best

Level II Response
Low Impact Development Grants

- Estimate to install StormwateRX system at the Port of Edmonds $114,000
- No guarantee it can consistently meet the new benchmarks
- At this time - - Still not sure if benchmarks will change in the next permit
- Difficult to develop specs for new filtration
- Difficult to justify investment

Timelines

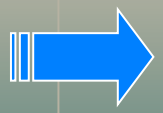
Nov 2008 –	DOE issues draft modified permit
Feb 2009 –	DOE determines modified permit creates significant changes requiring them to complete an Economic Impact Analysis
Sept 2009 –	DOE announces LID grant program for storm water retrofits
Nov 2009 –	POE submits application for LID grant
Dec 2009 –	PSA files lawsuits against five boatyards alleging non-compliance. Lawsuits were mainly substantiated by the boatyards inability to submit Level III Engineering Studies until a final Boatyard Permit was issued.

Preparing for Level III Response Low Impact Development Grants

- DOE announces LID Grant funding available for storm water
- POE submits application to install storm water filtration system
- Informed we were not even rated or ranked because we were "determined to be ineligible for funding consideration based on proposing facilities for industrial storm water"
  - retrofit of a previous recreational vehicle storage yard to a transit public transportation maintenance facility was funded during the same funding cycle.
  - Port of Port Townsend applied for grant funding under Ecology 2008 LID Grant and was awarded funding for storm water treatment improvements for their boatyard/shipyard which is also covered under the Boatyard General Permit.
- We appealed this decision, DOE agreed to rate us. In the end they determined that LID Grant money is not to be used for industrial or boatyard storm water.

Comparison of 2007/2011 Boatyard Permit Requirements

- Water sampling (Sept, Oct, Jan, Apr, May)
- Meeting benchmarks for oil/grease, total suspended solids, copper
- Sending sample results to DOE by 15th day of month following sample
- Corrective action if above benchmarks
- Three levels of response
  - Level One (each time) – inspection, identification of source, action taken to correct, brief summary submitted with monitoring report
  - Level Two (after 4 failures) – investigate, prepare source control report outlining potential treatment practices w/i 3 months.
  - Level Three (after 6 failures) – engineering report including design and construction info for treatment devices to be installed.



- Water sampling (Oct, Nov, Jan, Apr, May)
- Meeting benchmarks for: copper, zinc, and lead. One Sample in Nov or Dec 2012 of Total Coli form, Fecal Coli form & E. coli
- Send sample results to DOE by 28th day of month following sample
- Corrective action if above benchmarks
  - Level Three (after 6 failures) – engineering report including design and construction info for treatment devices to be installed.
  - Level One – for every exceedance
  - Level Two – whenever 4 exceedances
  - Level Three – after 6 exceedances
- Benchmarks for copper and zinc have a seasonal average and a maximum daily

Two Kinds of Water
2011 Boatyard Permit

Pressure Wash Water:

- 4 water samples per year
  - Copper - 2.4 mg/L
  - Zinc - 3.3 mg/L
  - Lead - 1.2 mg/L
  - pH - w/i range of 5.0-11.0

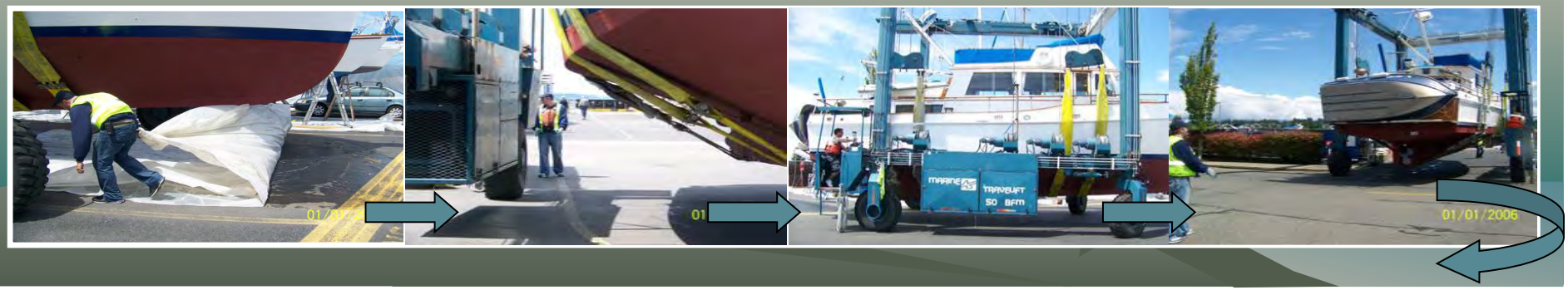
Storm water:

- 5 water samples per year

	Seasonal Average		Max. Daily Average
Copper (ug/L)	50		147
Zinc (ug/L)	85		90
Lead	N/A		N/A

Next Steps Toward Compliance

- Level III Engineering Report
- Submitted to Ecology on Sept. 1, 2011
- Ecology reviews and responds within 60 days.



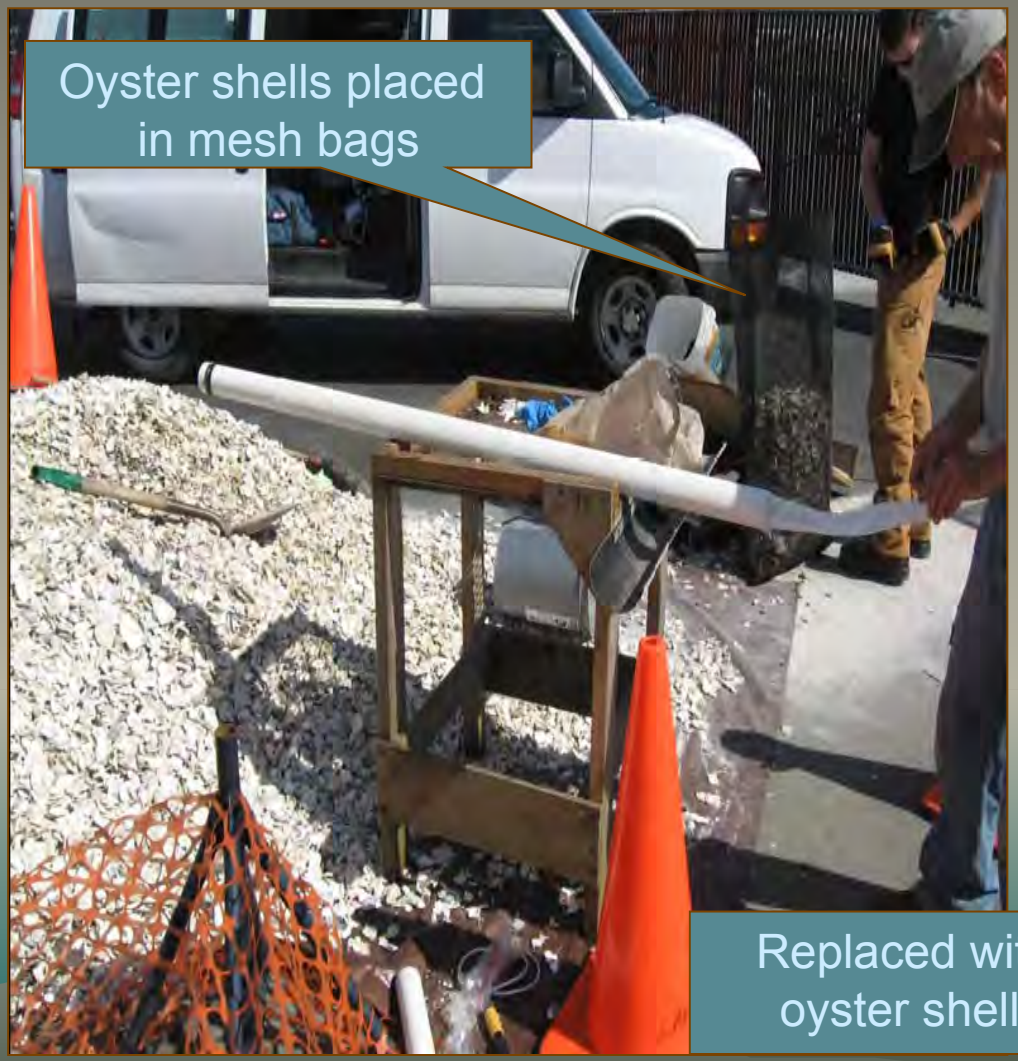
Exploring New Territory

- Oyster shells for filtration
  - Study conducted by Taylor Associates in 2008 at an Air Cargo facility revealed:
    - Improved water quality
    - Decrease in acidity
    - Increase in pH
    - Decrease in TSS and turbidity
    - Increase in calcium and magnesium concentrations
    - Reduced metals concentrations (especially with regard to total and dissolved copper - - up to 64%)

Engineering Report Conclusions

- Our Boatyard is a good candidate for Oyster Shell Filtration.
- Because of good BMP's
- Historical data shows dramatic improvement in copper levels
- Recent legislative mandate to remove copper bottom paint from the market by 2020
- Offering to go above and beyond the permit requirements and monitor pH levels and hardness
- Gather this data for DOE

Oyster Shells



The GOOD, the BAD, the UGLY

- Many small businesses are hurting – boatyards, vendors, marinas – regulatory environment isn't helping
- One environmental improvement leads to another environmental problem (plastic)
- Environmental groups may have actually created degradation of the environment through extreme approaches
- Citizen lawsuits (threat vs. collaboration)
- No rewards for positive improvements (yet)

The GOOD, the BAD, The UGLY

- Since 2004 – 38 boatyards no longer exist
- Business closures take money away from communities & lower State tax revenues
- DOE estimates $212,000 annually to administer this permit and is currently proposing recovery
- Who pays? The boaters.
- Unreasonable controls cause environmental steps backwards
- Higher cost to maintain a boat - leads to boat maintenance in uncontrolled settings or derelict boats in the water.

The GOOD, the BAD, the UGLY

- Boatyards (individual and as an industry) have achieved huge positive progress toward reducing the impact of our industry on the environment
- Benchmarks vs. Limits
- Forced improvements and innovation in technology
- Legislative action toward solving the root problem of copper in bottom paint
- Stimulated generation of Clean Boatyard Program