



**Proposed Remedial Action Plan
Site 12
Former Exchange Laundry/Dry
Cleaning Facility**

Public Meeting

May 9 , 2005

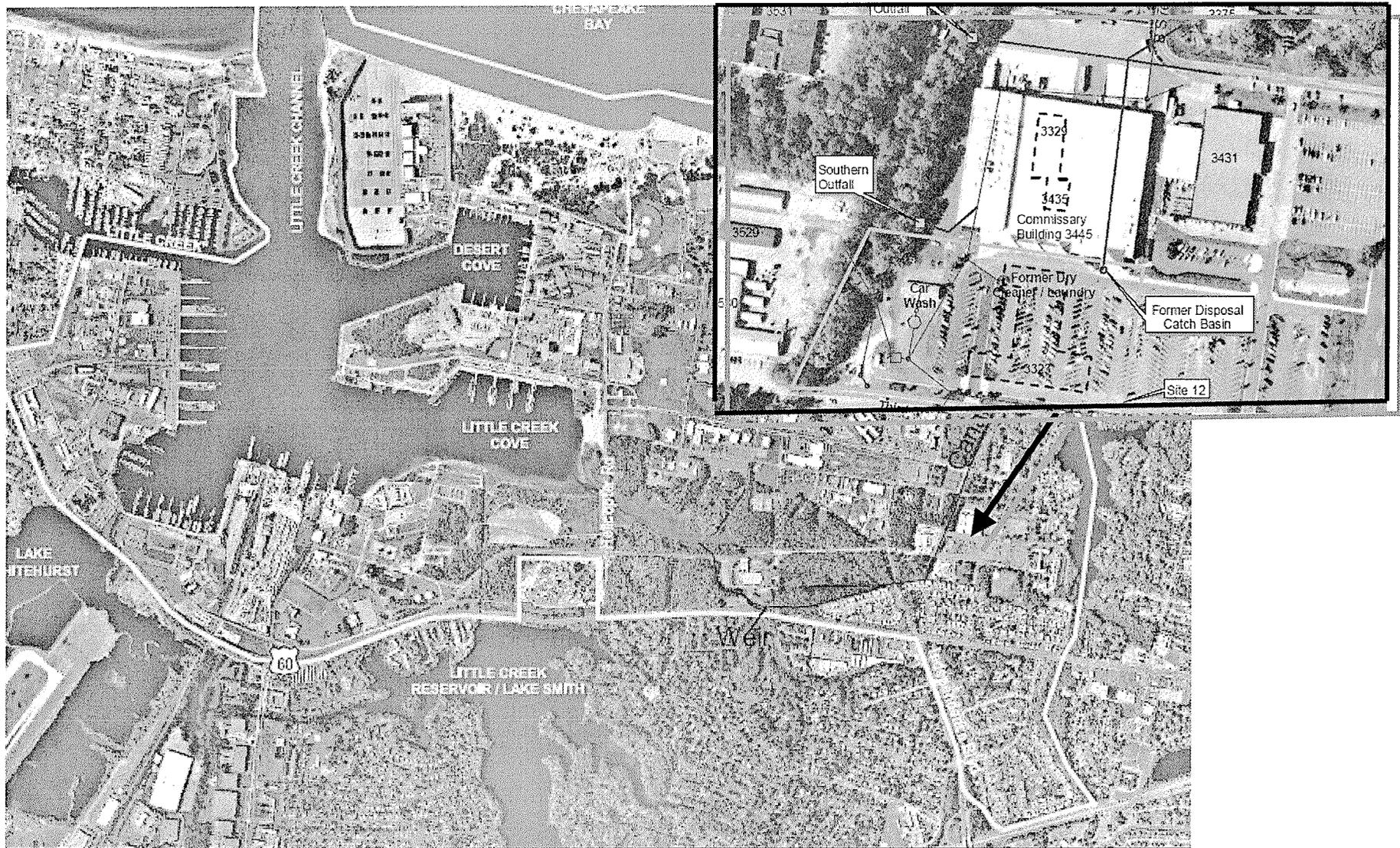
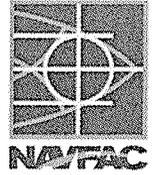
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Purpose of Presentation

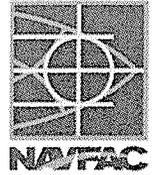


- History of Site
- Present the Proposed Remedial Action Plan (PRAP) for Site 12
 - The PRAP identifies the Preferred Alternative for addressing potential contamination (potential risk) at the Site
 - The PRAP explains the rationale for selecting this alternative
- Answer questions and seek community feedback on the PRAP

Site Map

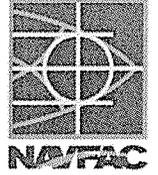


History and Previous Investigations



- The Exchange Laundry/Dry Cleaning Facility operated from 1973 until 1987
- An estimated 1,320 gallons of waste including chlorinated solvents (approximately 20 gallons), soap, sizing, and dyes were reportedly dumped into the storm water system and emptied into a freshwater drainage canal west of Site 12
 - The storm water conveyance system was removed and regraded during commissary construction
 - Sediment in the drainage canal was removed in 1999
- New Commissary Constructed early 1990s

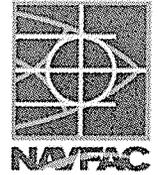
History and Previous Investigations



- Environmental Sampling
 - 57 soil
 - 47 groundwater
 - 32 sediment
 - 27 surface water samples

- Remedial Investigation
 - Nature and Extent of Contamination
 - Human Health Risk Assessment
 - Ecological Risk Assessment
 - Recommendation for Further Action

Site 12 Risk Assessment



Remedial Investigation Results

Media	Human Health Risk	Ecological Risk
Surface Soil	Acceptable	Acceptable
Subsurface Soil	Acceptable	Not Applicable
Shallow Groundwater	Unacceptable	Not Applicable
Deep Groundwater	Acceptable	Not Applicable
Sediment	Acceptable	Acceptable
Surface Water	Acceptable	Acceptable

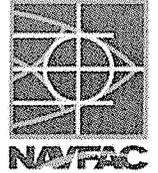
Note: Subsurface soil and groundwater are incomplete pathways for ecological risk

Maximum concentrations of chemicals of concern in groundwater

Chemical (µg/L)	Concentration
1,1-Dichloroethene	2.2
cis-1,2-Dichloroethene	4,900
Tetrachloroethene	23,000
trans-1,2-Dichloroethene	0.47
Trichloroethene	4,286
Vinyl Chloride	460

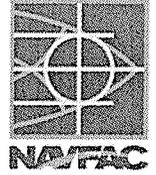
- The Navy and USEPA in partnership with VDEQ agree that shallow groundwater at the site poses unacceptable human health risk

Site 12 Feasibility Study



- A Feasibility Study was completed to evaluate remedial action alternatives
 - No Action
 - Long-Term Monitoring of Natural Attenuation
 - Pump and Treat
 - Permeable Reactive Barrier Wall
 - Biostimulation
 - Pump and Treat with Biostimulation
 - In Situ Chemical/bio-augmentation

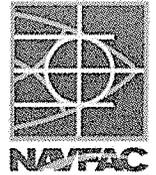
Proposed Remedy Selection



- Comparative Analysis

Category	Criteria
Threshold Criteria	1. Overall protection of human health and the environment
	2. Compliance with applicable or relevant and appropriate requirements
Primary Balancing Criteria	3. Long-term effectiveness and permanence
	4. Reduction of toxicity, mobility, or volume
	5. Short-term effectiveness
	6. Implementability
	7. Cost
Modifying Criteria	8. State acceptance
	9. Community acceptance

Relative Ranking of Treatment Alternatives

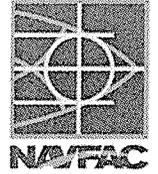


CERCLA Criteria	No Action (1)	Natural Attenuation (1a)	Pump and Treat (2)	Permeable Reactive Barrier (3)	Bio-Stimulation (4)	Pump and Treat with Bio-Stimulation (5)	In-Situ Chemical / Bio-augmentation (6)
Threshold Criteria							
Protection of Human Health and the Environment	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Compliance with ARARs	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Primary Balancing Criteria							
Long-term Effectiveness and Permanence	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Reduction in Toxicity, Mobility, or Volume	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Short-Term Effectiveness	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Implementability	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Present-Worth Cost	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total Implementation Cost	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Ranking: ● High ○ Moderate ○ Low

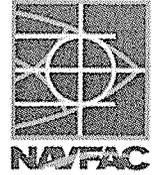
Rankings are provided as qualitative descriptions of the relative compliance of each alternative with the criteria

Preferred Alternative



- In-Situ Chemical/Bio-augmentation
 - Chemical Injection
 - **Fast Treatment of Source**
 - Bio-augmentation
 - **Long-Term Treatment of Residual**
 - Monitoring
 - Land Use Controls
 - Technology Review

Community Participation



- Community Acceptance

- Public notice of the public meeting was placed in *The Virginian-Pilot* newspaper on May 2, 2005

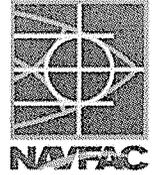
- **Comments Solicited and Recorded**

- Public comment period is from May 2 through June 2

- The PRAP for Site 12 is available for review and public comment at

Virginia Beach Central Library
4100 Virginia Beach Boulevard
Virginia Beach, Virginia 23452
(757) 431-3100

Community Participation



- **During the comment period, interested parties may submit written comments to one of the following addresses:**

Ms. Mary Cooke, Code 3HS13

Remedial Project Manager
USEPA Region III
1650 Arch Street
Philadelphia, PA 19103
Phone (215) 814-5129
Fax (215) 814-3051

Mr. Paul Herman

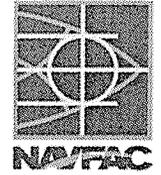
Virginia Dept. of Environmental Quality
Remedial Project Manager
629 Main Street, 4th Floor
Richmond, VA 23219
Phone (804) 698-4464
Fax (804) 698-4234

Ms. Lora Fly, Code N455

Commander, Navy Region Mid-Atlantic
Regional Environmental Group
Naval Weapons Station Yorktown
Building 406, Spring Road
Yorktown, VA 23691
Phone (757) 887-4933
Fax (757) 887-4478

flylb@pwcnorva.navy.mil

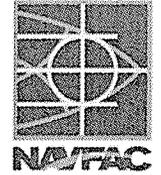
Path Forward



- **Public Comments**

- Responsive Summary
 - **Comments Review, Record, Response**
- If modifications substantially change the proposed remedy, additional public comment may be solicited
- The Navy and USEPA, in consultation with VDEQ, will make the final decision on the remedial approach for Site 12 after reviewing and considering all information submitted during the public comment period
- Record of Decision (ROD) for Site 12
 - **Responsive Summary Attached**

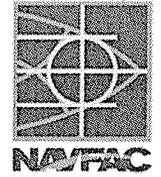
Next Steps



- **When the ROD is completed and signed, the public will be notified**
- **The Administrative Record for NAB Little Creek is available for public review at NAVFAC Atlantic at:**

**Naval Facilities Engineering Command, Atlantic Division
Attn: John Peters
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278
(757) 322-8005**

Community Participation



- The Restoration Advisory Board (RAB) for NAB Little Creek was formed in 1994
 - RAB consists of members of the community, Navy, USEPA, and VDEQ
- The Navy solicits input from the RAB and informs the community of environmental activities at NAB Little Creek
 - Periodic meetings of the RAB are open to the public
- Community Relations Plan for NAB Little Creek provides detailed information on community participation
- Community Acceptance - Proposed Remedial Action Plan
 - Public Comment Period

Site 12 PRAP



- **Questions / Comments**