



ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND

# ENVIRONMENTAL ADVISOR



FALL 2000

The ENVIRONMENTAL ADVISOR is designed to provide up to date information on environmental and natural resources regulations, events, issues and news.

## DOING THE RIGHT THING AT NAS OCEANA

**Tim Reisch, Remedial Project Manager**

The Navy is committed to doing the right thing in its protracted investigation, on-site bioremediation, and risk assessments of petroleum contaminated soils at Solid Waste Management Unit 15 (SWMU 15) located at Naval Air Station (NAS) Oceana in Virginia Beach, Virginia. SWMU 15 is an abandoned tank farm that served as the primary source of aircraft fuel for NAS Oceana from the mid-1950s to the mid-1970s. Soil contamination discovered at the tank farm triggered an interim action, initially regulated under RCRA and subsequently completed under CERCLA, to investigate and remediate the soil contamination.

The tank farm was identified as a potential hazard to human health and the environment in the 1984 initial assessment study and the EPA identified the tank farm as SWMU 15 in the 1988 RCRA Facility Assessment. The extent of soil contamination at SWMU 15 was investigated in two phases of a RCRA Facility Investigation (RFI) in 1993 through 1995. The RFIs identified total petroleum volatile compounds primarily composed of benzene, toluene, ethylbenzene, and xylenes (BTEX) in soil at the SWMU. Remedial alternatives were developed in the Corrective Measures Study (CMS) completed in 1996. The selected remedial alternative for soil was contaminated soil excavation and on-site treatment. In May 1996 the Navy conducted soil sampling to delineate the volume of contaminated soil to be removed and treated on site.

Beginning in August 1996, approximately 18,000 cubic yards of soil was excavated, hammer-milled, screened, amended with nutrients, and treated on site in two biopiles. Perforated PVC piping was interlayered within the piled soil and air was pumped through the pipes to aerate the soil. The piles were covered with black plastic to keep the soil warm and dry. The treatment process

was expected to last approximately 6 weeks, at which time the treated soils would be placed back into the excavated area.

During the treatment cycle, the Navy and EPA mutually agreed to change the regulatory oversight of the NAS Oceana Installation Restoration Program (IRP). Although the change from RCRA oversight to CERCLA oversight has initiated progress towards site closeout at many of the station's IRP sites, the progress at SWMU 15 was delayed and extended to 18 months due some inconsistencies between the programs.

In October 1998, the Navy conducted confirmatory soil sampling of the biopile soil to check for compliance with Virginia Solid Waste Management Regulations for disposal of petroleum-contaminated soil as clean fill (10 ppm of BTEX and 50 ppm of TPH). BTEX results were below the regulatory limit. The sampling data also supported a human health risk assessment that determined that all risks were below or within the USEPA's target levels for the residential user. The high TPH values were detected in soil at the base of the piles and still exceed the limit.

In July 1999 the Navy deconstructed the biopiles. The soil from the base of the piles was spread out and tilled. After 2 weeks of aeration a second round of confirmatory sampling was conducted to confirm that the soil aeration had reduced TPH to below the 50 ppm cleanup goal. The sampling results indicated that some of the soil still exceeded the cleanup goal so the soil was left in place for another two weeks to accomplish further biodegradation through aeration. In late August 1999 a third round of confirmatory soil sampling was conducted and this time, the TPH was less than 50 ppm. Therefore, the soil was determined to meet the VDEQ criteria for clean fill. Then, rather than putting the soil back into the excavation from which it came, the soil was proposed for use in the tarmac restoration project adjacent to SWMU 15. The Navy would otherwise have to pay to acquire 18,000 cubic yards of clean soil to support to the tarmac restoration project.

Before the Navy could draw the SWMU 15 biopile project to a close, the EPA biological technical assistance group (BTAG) requested that the biopile soils be subjected to an ecological risk assessment to insure that the habitat created by spreading the soil adjacent to runways would not be hazardous to the environment.

Therefore, the soil sampling data were subjected to a screening ecological risk assessment. The preliminary screen indicated that the PAHs were elevated. However, the PAH data were collected early in the treatment process, before the significant drop in TPH was achieved. So, the EPA BTAG determined that additional sampling was required to demonstrate that PAH concentrations had decreased along with TPH concentrations.

In December 1999, the Navy collected a fourth round of samples of the biopile soil and also collected soil from the tarmac restoration project area to serve as background. The final sampling of the SWMU 15 biopile soils indicated that concentrations of the PAHs were below the BTAG's action level for PAHs and were similar to PAH concentrations in the background soil samples. All of the soil was ultimately spread within the tarmac restoration area and no further action is warranted for the SWMU 15 soil.

If you have questions or need further information, please contact Tim Reisch at 757-322-4758 or email [reischta@efdlant.navfac.navy.mil](mailto:reischta@efdlant.navfac.navy.mil).

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## **PETROLEUM OIL LUBRICANTS (POL) STORAGE TANK MANAGEMENT NEWS**

A media management responsibility shift from the Solid, Hazardous and Oily Waste section to the POL Storage Tank Management section has recently been implemented. The shift moves POL Storage Tank Management as the lead for the stateside Oil Pollution Act of 1990 (OPA 90) and the overseas Spill Prevention Control and Response (SPCR) requirements. The Solid, Hazardous and Oily Waste section will still be responsible for the hazardous and waste oil portions of the regulations. With the exception of waste oil, the Solid, Hazardous and Oily Waste section will be the lead for all POL management issues. This includes POL storage tank management (compliance and remediation), Spill Prevention Control and Countermeasures (SPCC) plans, Integrated Contingency plans, Facility Response plan (FRP) plans, SPCR plans and Oil

Spill Response support to Navy On Scene Coordinator (NOSC) and activities.

The POL Storage Tank Management section has also undertaken the consolidation of storage tank management plan (STMP) elements into SPCC and SPCR plans at a number of CONUS and OCONUS activities. This consolidation has proven to be cost efficient as it eliminates the need for a separate plan. The incorporation of STMP related information into SPCC plans does not add additional regulatory commitments onto the activity as it relates to the 40 CFR 112, "Oil Pollution Prevention" regulation.

If you have questions or need further information, please contact Andy Michael 757-322-4743 or [michaelag@efdlant.navfac.navy.mil](mailto:michaelag@efdlant.navfac.navy.mil).

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### **MISSION STATEMENT**

- **Assist in the prevention and abatement of environmental pollution**
- **Execute, responsibly and expeditiously, Department of Defense funds entrusted to our care**
- **Keep our customers and partners informed on all current environmental issues**

The **Environmental Advisor** is a quarterly publication of the Environmental Division, Code 18. It is designed to keep readers informed on issues relating to the environment. If you are interested in contributing an article, please contact:

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Naval Facilities Engineering Command  
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Norfolk, Virginia 23511-2699**

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(757) 322-4785**

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### **WELCOME TO THE NEIGHBORHOOD!**

**Lee Anne Rapp, CLEAN COTR  
Karen Wilson, RAC COTR  
Environmental Programs**

Our RAC and CLEAN contractors have opened an office in the Airport Industrial Park just minutes from our offices here at LRA. OHM Remediation Services Corporation and CH2M Hill have jointly leased spaces at 5700 Thurston Avenue, Suite 116. The primary goal of the offices is to support local LANTDIV projects and customers in Tidewater. They have co-located because it is important for them to work closely together during the design and construction of our large environmental remediation projects.

The facilities they have leased include offices for CH2M Hill, offices for OHM Remediation Services, and shared common spaces. The shared common space includes a conference room that seats fourteen. It provides an alternative location for project meetings. Remedial Project Managers who are experiencing difficulties in finding a meeting place should take advantage of this nearby facility by contacting their CLEAN Activity Manager or LANTDIV RAC I/III Project Manager for scheduling.

On the LANTDIV RAC I/III side, OHM Remediation Services, Inc has established all the Program Functions here. The Program Manager, Roland Moreau, and his program staff are living in the local area working out of this office. In addition, there is a senior project manager, cost schedule engineers, project scientist, project business accountants, and clerical staff to support local projects. There are future plans to relocate additional project staff as local projects are funded. If you need any assistance, do not hesitate to contact them at their local phone, (757) 363-7190.

On the CLEAN II side, CH2M HILL has also relocated its Program Manager, Ray Tyler to this office. In addition to Ray, CH2M HILL has added activity and project managers for the

Tidewater activities and key technical resources to support the CLEAN program. The CH2M HILL phone number is (757) 460-0429.

Baker Environmental, Inc., which holds the nearly completed CLEAN I contract and is on CH2M Hill's CLEAN 2 team, has a strong local presence in Virginia Beach. Baker has supported CLEAN work from this location for a number of years and with the current transitions of the CLEAN I/II Management functions to Virginia Beach, will be adding staff through 2000 and 2001 to expand that support base. The Virginia Beach office, located at 770 Lynnhaven Parkway, serves as the center of Baker's Southeast Region. Baker's Virginia Beach Office phone number is (757) 631-5416.

Having a local staff of CLEAN and RAC contract personnel has improved the performance and efficiencies of the work. When unforeseen developments occur at local sites, members of the RAC/CLEAN team can be on site to quickly assess and resolve the issues.

For further information concerning the RAC and CLEAN programs contact either the RAC COTR, Karen Wilson at (757) 322-4817 ([wilsonke@efdlant.navfac.navy.mil](mailto:wilsonke@efdlant.navfac.navy.mil)) or the CLEAN COTR, Lee Anne Rapp at (757) 322-4814 ([rappla@efdlant.navfac.navy.mil](mailto:rappla@efdlant.navfac.navy.mil)).

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### **COMMON BUSINESS PRACTICES FOR THE NAVFAC CORPORATION**

**Jeanette Register  
Environmental Program Management**

The NAVFAC Corporation currently manages budgets, project schedules, execution information and financial information in various local databases, as well as, in the Facilities Information System (FIS). For quite sometime, the NAVFAC Corporation has had a need for a "corporate" database. The volume and variety of information that the NAVFAC Corporation tracks and reports on has far exceeded the

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capabilities and functionality currently offered by the local databases and FIS.

Oracle Projects, a web-based Commercial Off-the shelf (COTS), was selected to meet the corporation's Project Management requirements. Human Resource (HR) requirements were added to the scope of the Oracle Projects initiative. Oracle Projects will be implemented at all EFD's/EFA's, NFESC and NAVFACHQ as the "Corporate Project Management System".

The "Oracle Projects" initiative has high visibility throughout the corporation and has been identified as the EFD Leadership Council initiative. Implementation of Oracle Projects is

on a fast track. The current implementation schedule has production planned for the 1<sup>st</sup> Quarter of FY-01 as a trial project at Northern Division.

While this transition is a major effort for our support personnel, we intend to see that our customers will see minimal, if any, disruptions in service. In the long run, the change will mean more rapid and efficient data handling and reporting.

If you need information or have questions, please contact Jeanette Register at (757) 322-4781 or email: [registerjp@efdlant.navfac.navy.mil](mailto:registerjp@efdlant.navfac.navy.mil).

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## MEMBRANE SYSTEMS

**Steve Azar P.E.**  
**Senior Environmental Engineer**

Membrane processes can be used to remove a wide variety of materials from water ranging from suspended particles to sodium ions. While these processes all use a membrane barrier for separation of the material from the water, specific membrane applications can be as different as rapid sand filtration and ion exchange.

The advantages and limitations of the different types of membrane processes are important to understand. Applying sound engineering and testing principals, the appropriate membrane process can be selected to provide effective treatment for reducing many regulated and unregulated materials in water. The membrane process or processes to be used in a given application depends on the raw water quality and the finished water treatment objectives. More specifically, it is necessary to determine what materials require removal, to what level they must be removed, and what effect other materials in the water may have on membrane performance.

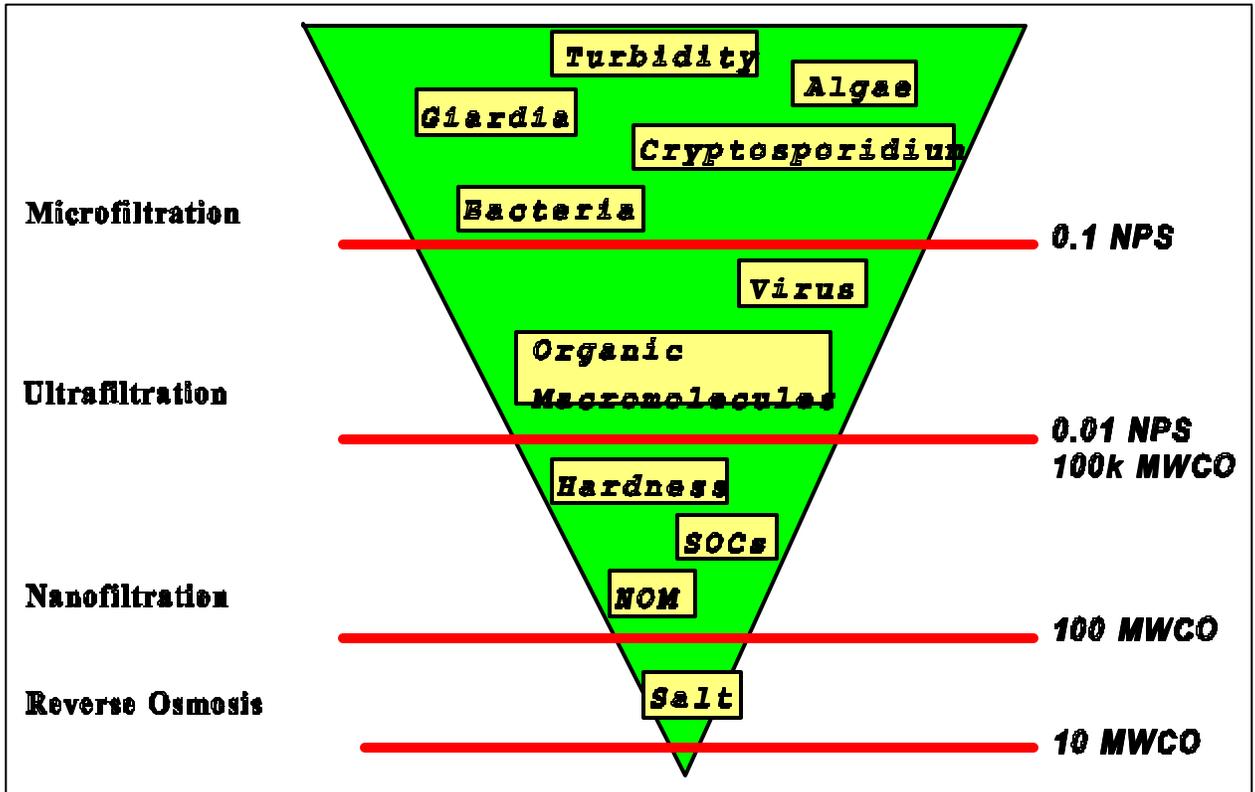
Most membrane processes used in the water industry are pressure-driven. Membrane processes include microfiltration (MF), ultrafiltration (UF), and nanofiltration (NF), which is commonly known as membrane softening, and hyperfiltration, commonly called reverse osmosis (RO). Presented in descending order with respect to the size of contaminant removed, MF membranes are designed to remove large suspended particles such as bacteria, Giardia cysts, Cryptosporidium oocysts, and colloidal particles while RO membranes remove small ionic and organic materials. In addition to pressure-driven membrane processes, there are membrane processes that depend on electrical potential (electrodialysis, ED and electrodialysis reversal, EDR), concentration gradients and other driving forces.

The rejection characteristics of pressure-driven membrane processes are normally identified by the size of material retained by the membrane. This can be in terms of nominal pore size (NPS) for membrane filtration processes such as microfiltration and ultrafiltration or molecular weight cut off (MWCO), for membrane desalination processes such as reverse osmosis, nanofiltration, and sometimes ultrafiltration.

Relative rejection properties of the generic classes of pressure-driven membranes for various dissolved and suspended materials are presented in the Separation Spectrum below. While this figure can be used as a general guide, actual rejection of materials by a membrane can be dependent on factors other than MWCO and NPS. For example, microfiltration systems may provide some virus removal, even though the virus may be ten times smaller than the NPS of the membrane. This is because virus typically attaches to particles in the water that can be removed by a microfiltration membrane.

While the majority of past membrane applications at the industrial scale have been for desalting and softening, future applications are expected to rival conventional organic material and solids removal processes.

This is due in part to improvements in membrane performance and longevity, which have significantly reduced membrane process costs over the last ten years.



Over the past several years, there has been a substantial increase in the use of membrane processes for the production of drinking water. As of this writing, the following LANTDIV activities have operating membrane plants: Brackish R.O. plant at NAS Naples, brackish R.O. plants at NSA Bahrain, Electrodialysis reversal EDR membrane plants at NAS Sigonella, and a Seawater R.O. plant at NAVSTA Guantanamo Bay, Cuba. This trend will continue as the navy seeks alternative methods for meeting increasingly more stringent drinking water quality requirements.

If you have questions or need further information, please contact Steve Azar at 757-322-4742 or azarbi@efdlant.navy.mil.

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**ENVIRONMENTAL DIVISION (EV) REORGANIZATION**

**Andrew Kissell**  
**Environmental Program Management**

The Naval Facilities Engineering Command's Atlantic Division is moving steadily forward with its re-engineering plans. For the most part, clients will see little change in the way environmental services are provided. This is largely due to the fact that we are simply formalizing a matrix structure that has been part of the way the Environmental Division has worked for years. In the past, environmental staff was routinely assigned to a technical specialty while also serving a geographic area for that media. All of the staff is now **formally** assigned to both a technical and a geographic area.

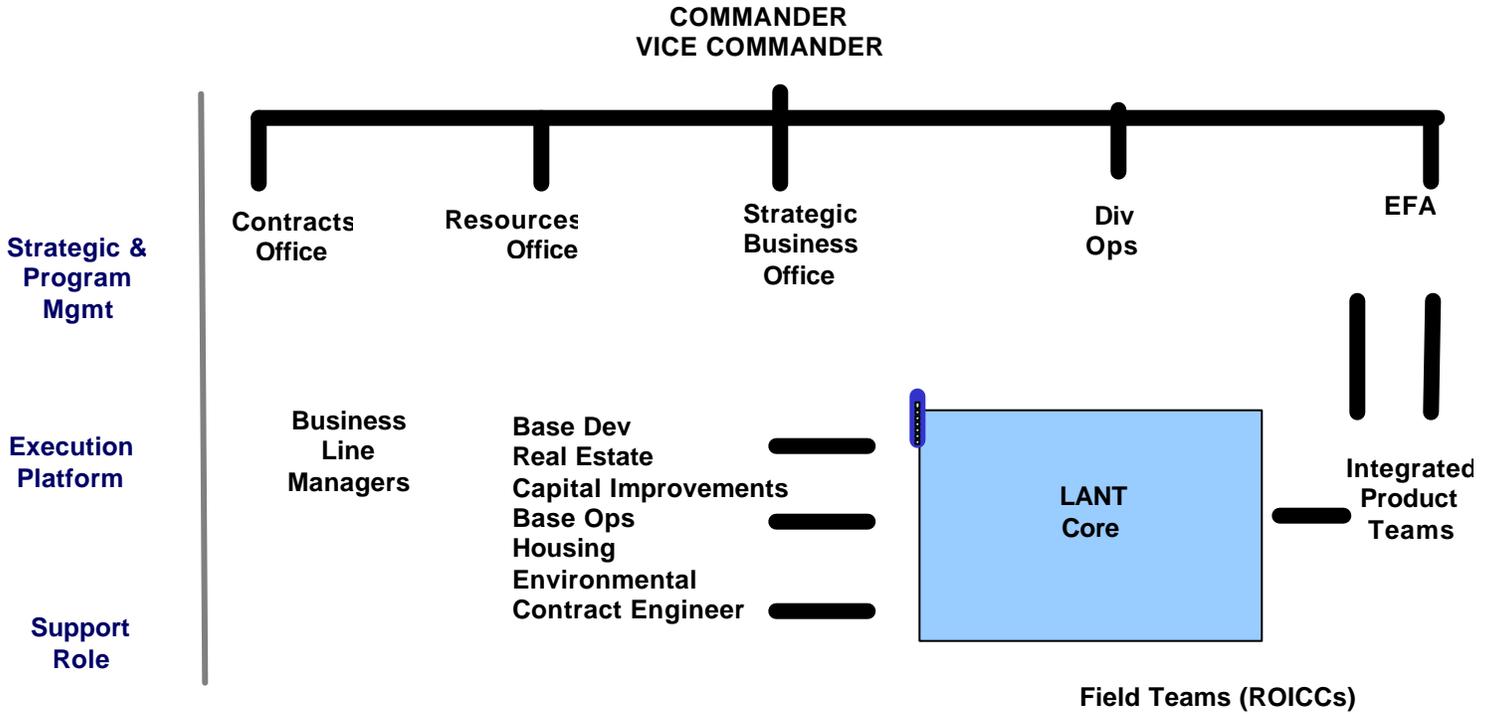
Newly formed Integrated Process Teams (IPTs) and Activity Liaison Officers (ALnOs) **(see below)**

<b>LIAISON OFFICERS</b>	<b>ACTIVITY LIAISON OFFICERS</b>
<b>REGIONAL COMMANDS</b>	
CNRMA	CAPT D. GEORGE
CNRNE	CAPT J. ZORICA
CNRNDW	CAPT P. McMahan
CNRLE	CAPT J. Hollrith
<b>CLAIMANTS</b>	
CINCLANTFLT	Glen McDowell
CINCUSNAVEUR	Mitch Cooperman
CMC (East)	Phil Bolton
<b>UNIFIED COMMANDS</b>	
EUCOM	Mitch Cooperman
CENTCOM	CDR E. Odderstol
JFCOM	CDR E. Odderstol
SOUTHCOM	CDR E. Odderstol
SOCOM	CDR E. Odderstol
<b>OTHERS</b>	
NEXCOM	Dennis Phelps
CNO	TBD
BUPERS	Jim Duffy
NAVCENT	Roger Saunders
NAVSOUTH	TBD
USAFE/USAE	Mitch Cooperman
	<u>LANT (7)</u> Virginia Beach, VA Norfolk / Keflavik, Iceland Portsmouth/Chesapeake, VA VA Peninsula/WestVirginia Caribbean / Azores (2) Marines, North Carolina
	<u>Med (2 + 1)</u> Eastern/Western Mediterranean Central Mediterranean SouthWest Asia (Bahrain*) * LANT PM
	<u>North (3 + 1)</u> Connecticut / Rhode Island Pennsylvania / New Jersey Maine / New York Reserves (Collateral Duty)
	17 Full Time Officers: 3 Collateral Duty Officers

will facilitate coordination of all products and services across business lines, e.g., between the Utilities Section in the Base Ops Business Line and the Safe Drinking Water Section in the Environmental Business Line. Business lines like ours will focus on developing longer term strategies to meet client's changing needs and missions while the IPT concentrates on coordinating and effectively executing current year projects. We have assigned two journeymen environmental engineers full time to the IPT to facilitate product and service delivery. ALnOs are dedicated to individual clients working closely with Public Works Officers and other key Base personnel to ensure all facilities issues are quickly brought to the attention of the appropriate team members.

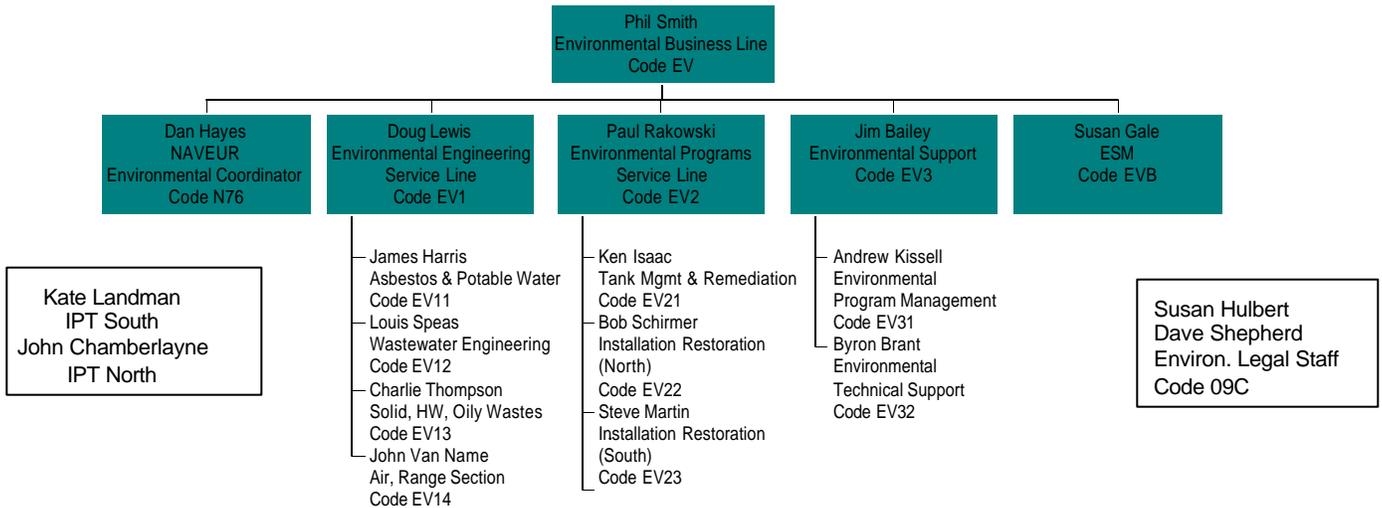
We anticipate that by institutionalizing this operational concept, all capital improvements projects will have improved coordination and therefore fewer of the glitches typically associated with environmental documentation, regulatory liaison, permitting, and the like. Customers who sometimes have had to intervene to ensure integration of services across LANTDIV Departments will now be assured of a fully coordinated and integrated product across the lifecycle of the product. Furthermore, we anticipate more responsiveness to client requirements since we now have a team (the IPT) dedicated to integrating each dynamic Business Line with the immediate operational demands as communicated by the installation via the ALnO.

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If you need further information or have questions, please contact Andrew Kissell at 757/322-4621 or [kissellar@efdlant.navfac.navy.mil](mailto:kissellar@efdlant.navfac.navy.mil).

**ENVIRONMENTAL DIVISION REDESIGNATION AND PERSONNEL INFORMATION**



Personnel changes, including new Project Managers as well as changes in personnel responsibilities within the Sections include Code EV11, Alex G. Oviedo, Project Manager, Code EV12, Brian Lee, Project Manager, Code EV13, Maritza Montegross, Project Manager, Code EV14, John Kresky, Project Manager, Code EV21, Alberto Sepulveda and Robert Magee, Project Managers, Code EV22, Jennifer Davis (PDC) and Dawn Hayes, Project Managers, Code EV23, Channing Blackwell, Kevin Cloe, Glenn Markwith, Dominic O'Connor and Kirk Steven, Project Managers.