

**Marine
Environmental
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Office**



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**WHITE HOUSE EXPRESSES NEED FOR
RISK ASSESSMENT METHODOLOGIES**

Addressing the problems which blocked the passage of several environmental bills during the past Congressional session, the administration is seeking advice on the development of risk assessment and management policies and associated methodologies. At the inaugural meeting of the President's Committee of Advisors on Science and Technology, Robert T. Watson, Associate Director for the Environment in the White House Office of Science and Technology Policy, said that the administration must further develop risk assessment technologies to "effectively unblock this issue."

Watson said that, previously, risk assessment was focused on cancerous effects, while non-cancer and ecological effects were not taken sufficiently into account. He also addressed the need to improve the production and marketing of risk assessment and cleanup technologies.

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The committee is to make recommendations regarding regulatory and statutory barriers to the commercialization and certification of environmental technologies. Recommendations on the appropriate relationship between natural sciences and environmental sciences in governmental policy are also being sought.

The President's Committee of Advisors on Science and Technology was established by Executive Order No. 12882 on November 23, 1993, and includes individuals from academia and industry appointed by the president to provide private sector advice in the science and technology policy-making process.

--*Environment Reporter*, Vol. 25 No. 26, October 28, 1994, p. 1271.

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PHNSY DEVELOPS NEW HULL AF PAINT REMOVAL PROCESS

The Pearl Harbor Naval Shipyard (PHNSY) is using a unique process to remove organotin antifouling (AF) paint from the underwater hull of the USS LEFTWICH (DD 984), a SPRUANCE-class destroyer, in conjunction with a scheduled regular overhaul. When the organotin AF paint from the underwater hull of the USS JOHN F. KENNEDY (CV 67) was removed at the Philadelphia Naval Shipyard, a wet blasting technique using a grit and water solution was selected for the operation, as this method generates no dust.

This method, however, created two significant problems. The first problem was the need to constantly repair damage to the dry dock floor plastic liner caused by heavy equipment in order to prevent leaks. The second was the collection and disposal of the millions of gallons of waste water generated during the blasting process. Wet blasting was initially considered for removing the AF paint from the USS LEFTWICH, but was rejected.

A Process Action Team at the PHNSY developed a dry blasting process using a dustless steel grit media. Paint residue is removed from the blasting grit so that the



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material can be reused, thus reducing costs. The blasting is done in a portable containment unit sealed to the hull of the ship, which, in concert with powerful dust collection equipment, totally isolates the operation from the outside environment. When one area of the hull has been cleaned and primed, the containment unit is disconnected from the hull, sealed, and moved by crane to another position. It is then resealed to the hull and all of the equipment is readied for use. This process is repeated until the entire underwater hull has been completed.

With this system, the PHNSY was able to comply with the State of Hawaii's Water Quality Criteria for tributyltin while removing the organotin AF paint. It also allowed other critical path work, such as sonar dome replacement and propulsion shaft removal, inspection and repair, to proceed in parallel.

--*Shipyard Log*, Vol. 47 No. 19, September 15, 1994, p. 1.

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EPA DREDGE SPOIL TESTING REQUIREMENTS CLARIFIED

Dredge spoils earmarked for ocean disposal do not need to be tested in the suspended solid phase for bioaccumulation of toxics in aquatic organisms, according to the EPA (59 FR 52650, October 18, 1994). Addressing an interim proposed rule (25 ER 137) announced on May 13, 1994, an EPA Region II press officer stated that the agency has never required such tests. The material is not exposed in its suspended solid phase (i.e., as it is settling to the ocean floor) for enough time for serious bioaccumulation to occur. However, the EPA continues to require toxicity tests on material in its suspended phase, and bioaccumulation tests in its solid (sediment) phase as part of the process to determine the suitability of the material for ocean disposal.

--*Environment Reporter*, Vol. 25 No. 25, October 25, 1994, p. 1228.

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EPA GUIDANCE WHERE NO APPROVED TEST METHODS EXIST

Some discharges under the Clean Water Act (CWA) that are also subject to certain Emergency Planning and Community Right-to-Know Act (EPCRA) reporting requirements must also adhere to test methods set forth in 40 CFR 136. The EPA-approved test methods are entitled *Guidelines Establishing Test Procedures for the Analysis of Pollutants*.



In those cases where there is no approved test method for a particular compound, dischargers must obtain EPA or state (if the state is the permitting authority) approval prior to substituting an alternate test method. This requirement is set forth in the EPA document *Guidance for the Determination of Appropriate Methods for the Detection of Section 313 Water Priority Chemicals*. This approval must be obtained before the collection and analysis of sample data can begin.

Requests to use an alternate test must be submitted in triplicate to the appropriate EPA regional administrator or to the authorized state permitting agency approved under the CWA's National Pollutant Discharge Elimination System (NPDES) program. The permitting authority will respond to the application within 90 days, according to the EPA. The application must include:

- The name and address of the responsible firm or person making the discharge
- The identification number of the existing or pending permit
- A request for the type of permit involving the alternate test procedure
- The discharge serial number
- The identification of the pollutant or parameter for which approval of the alternate test method is being sought
- Justification for use of a method other than those specified in 40 CFR 136
- A detailed description of the proposed test procedure, including references to published studies of the procedure's applicability to the effluents in question and
- Comparability data, if nationwide approval of the alternate method is being sought.

--*Air & Water Pollution Control*, Vol. 7 No. 20, September 28, 1994, p. 7.

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NO-DISCHARGE ZONE DESIGNATED IN MASSACHUSETTS

On October 18, 1994, Weymouth Harbor in Massachusetts was designated a "No-Discharge Zone" for vessels by EPA Region I Administrator John DeVillars. He also stated his intention to apply a similar designation to the entire New England coastline. The designation prohibits the discharge of treated or untreated sewage from vessels in the harbor and the surrounding embayments of the east and west branches of the Weymouth River. Ninety-one miles of coastline in New England are currently designated as No-Discharge Zones, including Wareham and Nantucket harbors.

--*Environment Reporter*, Vol. 25 No. 25, October 25, 1994, p. 1228.

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SMALL-QUANTITY STORM WATER DISCHARGERS IN TENUOUS POSITION

The EPA failed to generate a specific framework for storm water discharges under Phase II of the Clean Water Act, previously targeted for October 1, 1994. This may lead to citizens' suits for illegally discharging storm water without a permit; however, the possibility of such suits are minimal according to Michael Cook, director of EPA's Office of Wastewater Management. Congress may soon consider a measure (S 2507) which would allow deadline extensions for permitting storm water discharges.

The Baucus-Chafee bill would require the EPA to publish, within a two-year period, an advance notice of proposed rule-making summarizing municipal storm sewer systems, in addition to outlining regulatory methods. Also, within a two-year period, the EPA would be required to develop measures for managing storm water discharges to the maximum extent practicable. Sources would be required to follow municipality guidelines defined under Section 6217 of the Coastal Zone Management Act.

The EPA would be allowed to grant an exemption if storm water discharges are managed in a manner resulting in minimal impact on water or sediment quality. Permits for municipal discharges would not require compliance with numerical effluent limitations or water quality standards for 10 years under the bill. The EPA already regulates larger sources of storm water discharges which include industrial activity, cities which consist of populations over 100,000 that have separate storm water sewer systems and construction projects disturbing more than five acres of land.

--*Air & Water Pollution Control*, Vol. 7, No. 21, October 12, 1994, p. 7.

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DUPLICATION, FUNDING PROBLEMS HAMPER DOD SITE CLEANUPS

According to a report released on September 30, 1994 by the General Accounting Office (GAO/NSIAD-94-142), the Department of Defense's New Environmental Security Strategy for handling environmental cleanups has been impeded by fragmented funding sources, duplication of effort, and limited cooperation between DoD and other agencies. The report also found that cleanup of the most contaminated DoD sites under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) is too expensive and time-consuming.

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The GAO report said the funding for DoD's environmental program comes from 34 separate accounts among the services and three centrally-managed DoD accounts, leading to inconsistencies in identifying, classifying and funding projects. DoD officials, in comments included with the report, generally concurred with the findings and stated that many procedural changes have been implemented within the past year.

--*Environment Reporter*, Vol. 25 No. 26, October 28, 1994, p. 1278.

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KEYS TO IMPROVING PERMIT PROGRAMS

The EPA held its first environmental permits improvement team meeting on October 20. At this meeting, regulated industry representatives, state regulators, environmental groups and the public were allowed to attend and give their comments. The idea behind establishing this group is to upgrade the quality, certainty, and timeliness of the permit decision process, according to executive director of the team, Lance Miller. Instead of the current EPA process, the top priority of this team would be to adopt a joint state/EPA approach. Recommendations from the team included:

- Targeting permit priorities
- Identifying regulatory and statutory barriers
- Encouraging pollution prevention
- Facilitating meaningful public participation
- Measuring the success of permitting programs
- Designing training for permit writers
- Streamlining state reporting requirements and
- Integrating permit databases.

According to Cynthia Peterson of the League of Women Voters, the value of public involvement will help make the permitting process quicker, more comprehensive, and cheaper, and should encourage public participation to be substantive, rather than procedural. Suggestions that come from regional meetings will be put into an action plan that will go to EPA Administrator Carol M. Browner in December. The plan is set to be implemented January 1, 1995.

--*Environment Reporter*, Vol. 25, No. 29, November 18, 1994, pp. 1380-1381.

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SUPREME COURT DECLINES REVIEW OF CWA RULING

On October 11, 1994, the U.S. Supreme Court said that it would not review a federal appeals court decision that storm water discharges to an artificial retention pond are not discharges regulated under the Clean Water Act (CWA). The town of Oconomowoc Lake, Wisconsin, wanted to require discharges from the site of a 110-acre warehouse facility to comply with the CWA. The appeals court ruled that the pond's connection to ground water that is connected to a nearby stream was too tenuous to classify the pond as waters of the United States. According to the appeals court, the CWA only regulates discharges of pollution to navigable waters (24 F.3d 962, 38 ERC 1760; 25 ER 158). Residents argued that a high court review was needed to fill a gap in environmental regulation and resolve a dispute concerning discharges to ground water.

--*Environment Reporter*, Vol. 25, No. 24, October 14, 1994, p. 1182.

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NRAD SYSTEM PROTECTS MARINE MAMMALS DURING SEA TESTING

An NRaD signal processing system which was originally designed to track Soviet submarines has been successfully used for the protection of marine mammals during shock trials of a new Navy destroyer. The shock trial, which consists of the detonation of a 10,000 pound explosive charge near the vessel being tested, presents a risk of injury or death to the animals. To reduce that risk, and to comply with the Marine Mammal Protection Act, the Navy worked with the National Marine Fisheries Service (NMFS) for over a year prior to the tests to obtain the needed permits and to select a test area where marine mammals were least likely to be found.

The established procedure to certify an area to be clear for testing was previously based entirely on visual surveys taken by NMFS personnel from aircraft and ships. While visual observations are an essential element in the certification procedure, especially for smaller mammals such as dolphins and seals, it was believed that an acoustic monitoring capability would substantially reduce the risk of injury or death for larger marine mammals (whales). Some whales are known to dive to great depths and stay submerged for periods of up to 90 minutes.

The system used by NRaD employs a modified multichannel processing system which was originally being developed for the Air Defense Initiative (ADI) program until the program was terminated due to defense spending cuts. The ADI processor was converted to detect, localize and track vocalizing whales and was renamed the Marine Mammal Acoustic Tracking System (MMATS). A neural network processor trained to

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recognize whale vocalizations recorded by precisely-placed pairs of sonobuoys signals the system operator when detections are made. The MMATS can detect blue, finback, sperm, minke, gray and humpback whales.

After being successfully demonstrated, the MMATS was approved for use during the shock trials. During the tests, blue whales were acoustically detected during both days of the trials. These detections were subsequently confirmed by visual surveys conducted by NMFS personnel. The test ships were relocated to an area determined to be clear of marine mammals by both acoustic and visual surveys, and the trials were successfully completed. Surveys of the test area after each test shot by the NRaD Marine Animal Recovery Team confirmed that no marine mammals were harmed.

--*Outlook*, July 1, 1994.

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EPA OUTLINES POLICY TOOLS FOR FUTURE ENVIRONMENTAL REGULATIONS

On October 21, EPA Region IX Administrator Felicia Marcus outlined seven major principles which the agency will use to create future policy. According to Marcus, these principles are the forefront in EPA's evolution towards policies and regulations which are not strictly founded upon traditional command and control. These principles are as follows:

- Pollution prevention
- Sound science
- Enforcement
- Environmental justice
- Reinventing government
- Ecosystem management and
- Partnerships.

Pollution prevention was at the top of the list as a common-sense initiative for finding cleaner, simpler, smarter ways to achieve pollution prevention. In addition, Marcus stated that pollution prevention is an effective method for spotting regulatory obstacles specific to a particular industry. The EPA's new goal will be focusing on environmental management and regulation on an industry by industry basis.

--*California Environment Reporter*, Vol. 5, No. 1, November 4, 1994, p. 6.

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CONE PENETROMETER USED IN ENVIRONMENTAL ASSESSMENTS

An assessment of a hazardous waste site at the Naval Training Center San Diego is being performed by the Site Characterization and Analysis Penetrometer System (SCAPS). The Naval Exchange Gas Station site is being assessed for subsurface gasoline, oil and lubricant contamination as part of the Navy's environmental cleanup prior to releasing the property for public use under the Base Realignment and Closure process.

In September, at the request of the State of California, SCAPS conducted a three-week assessment of Unocal's Guadalupe Oil Field near San Luis Obispo to verify soil contamination and resultant cleanup requirements. During the first two weeks of the deployment, 38 investigative locations, designated by the state, were analyzed by the SCAPS team. The real-time data provided by the system would have ordinarily required 60 to 90 days to develop at an off-site laboratory.



SCAPS working at a well head site in the Guadalupe Oil Field. -U.S. Navy photograph.

The SCAPS technology was initially developed by NRaD to detect petroleum, oil and lubricant (POL) contamination in bays and harbors where Navy ships operate and anchor. The SCAPS fiber optic-based chemical sensor is housed in a probe that can be pushed into the ground as deep as 150 feet to provide real-time assessment of soil contaminants. The traditional method for such assessments requires progressive soil borings and samples for laboratory analysis that requires months to complete, leading to long delays in the start of cleanup operations.

The EPA's Environmental Monitoring Systems Laboratory, Las Vegas, has accepted SCAPS as the first program for "Technology Verification" under their "EPA Consortium Program." NRaD (on behalf of the DoD Tri-Services) will combine the SCAPS program effort with similar programs initiated with several western governors and the California EPA. A single, consolidated test plan is expected to be ready for demonstration at the Hydrocarbon National Test Site at Port Hueneme, California in 1995.

--compiled from U.S. Navy sources.

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COURT SAYS MEDICAL MONITORING COSTS NOT RECOVERABLE UNDER SUPERFUND

The cost of medical monitoring to detect disease caused by exposure to hazardous waste is not recoverable as a response cost under the superfund law, a federal appeals court ruled November 7 (*Price v. U.S. Navy*, CA 9, No. 93-55447, 11/7/94). The U.S. Court of Appeals for the Ninth Circuit said the monitoring of long-term health has nothing to do with containing or cleaning up releases of hazardous substances, and is therefore not a response cost recoverable under Section 107 of the CERCLA.

The case had its roots in the 1930's, when the U.S. Navy dumped paints, asbestos gaskets and insulation in a junkyard in San Diego County. In 1958, the Moses family purchased part of that land, and in turn sold it to the Price family in 1960. Asbestos was later discovered in the soil. The State of California paid a contractor \$300,000 to clean up four residential properties, including the Price-owned property. Price sued the U.S. Navy, the Moses family and the Sylvan Pools company (which originally reported the asbestos to the county) for recovery costs under CERCLA, attorney fees and future medical costs, including medical monitoring. Price also sought an injunction to order the defendants to remove contaminated soil below the foundation of her house under the Resource Conservation and Recovery Act (RCRA).

In 1992, the district court held the defendants liable for cleanup costs and ruled that the U.S. Navy was 95 percent liable, Sylvan Pools 4 percent and the Moses family 1 percent (Section 114 of CERCLA prohibits duplicate compensation). According to the district court, however, private response costs under CERCLA do not include the cost of medical monitoring to detect disease caused by exposure to hazardous waste. Price's RCRA claim was dismissed by the courts stating she failed to prove an imminent and substantial endangerment to health or the environment.

--*Environment Reporter*, Vol. 25, No. 29, November 18, 1994, p. 1380.

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SAN DIEGO WATER BOARD ADOPTS BASIN PLAN CHANGES

The San Diego Regional Water Quality Control Board approved an updated basin plan on September 8, 1994. The plan establishes numerical and descriptive water quality objectives based on existing and potential beneficial uses of surface and ground water bodies identified by the board. These objectives are used by the board to determine water quality requirements for waste discharges in the San Diego region. The new basin plan includes provisions for a new ground water quality limited zone for properties that cannot meet cleanup levels set by the board. The board may amend the plan to formally

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remove one or more of the beneficial uses from the list, if it determines that restoration is not feasible in the foreseeable future.

The revised plan adds a 1 milligram per liter water quality objective for toluene for waters designated municipal and domestic supply established by the EPA in 40 CFR, and raises the boron water quality objective from 0.5 milligram per liter to 0.75 milligram per liter. The amended plan also sets the water quality objective for pH to no lower than 7.0 and no higher than 9.0 (raised slightly from the previous limit of 8.5) for bays and estuaries. The water quality objective for pesticides stating "total identifiable chlorinated hydrocarbon pesticides shall not be present at detectable levels" has been eliminated to resolve a conflict with the objectives for maximum contaminant levels (MCLs) for organic chemicals. The board stated that the remaining objectives for pesticides and the MCLs provide adequate protection of the beneficial uses from the discharge of pesticides.

A new policy that details methods for establishing cleanup levels for ground water and soils is included in the basin plan. The policy requires that procedures to establish cleanup levels must consider the potential additive effects of individual constituents. If achieving background levels of pollutant concentrations is not feasible, the plan calls for setting cleanup levels that are as close to background concentration as technologically and economically attainable, while restoring and protecting the "beneficial uses" as measured by the water quality objectives.

--*California Environment Reporter*, Vol. 4, No. 23, September 23, 1994, p. 429.

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NAVY SUED FOR 19,000 ALLEGED VIOLATIONS AT HUNTERS PT

On October 5, the U.S. Navy was sued by a coalition of environmentalist, sports fishing, and public interest groups who alleged that toxic discharges from Hunters Point Naval Shipyard are contaminating San Francisco Bay. The lawsuit filed against the Navy with the U.S. District Court in San Francisco charges the Navy with 19,000 violations of the Clean Water Act. The violations are based on the Navy's own self-monitoring reports to the EPA and the San Francisco Bay Regional Water Quality Control Board.

According to Michael Herz of the *San Francisco BayKeeper*, the suit claims that toxic discharges of polychlorinated biphenyls (PCBs), acids, bases, organic solvents, paints, waste oils, and vinyl chlorides wash into the bay daily through broken tidal gates and leaking storm drains at the shipyard. Herz said that these chemicals are not only



toxic to fish, but a health hazard to thousands of low-income people who consume contaminated seafood from the bay.

--*California Environment Reporter*, Vol. 4, No. 25, October 21, 1994, p. 469.

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DOCUMENTS AVAILABLE FROM MESO

Standard Operating Procedures and Field Methods Used for Conducting Ecological Risk Assessment Case Studies

Determining the ecological impacts of hazardous substances on coastal and estuarine ecosystems requires the use of appropriate methods and procedures to obtain accurate and comparable data. This document presents methods and procedures field-tested during research and monitoring activities performed to support ecological risk assessment studies as part of an interagency Memorandum of Agreement between NRaD and the EPA's Environmental Research Laboratory, Narragansett (ERLN) in Narragansett, Rhode Island.

The methods and procedures were prepared by scientists from ERLN, the University of New Hampshire's Jackson Estuary Laboratory, and the Marine Environmental Support Office. This report was prepared to fully document the procedures used in case studies, and to assist in the development of suitable techniques capable of achieving the objectives of ecological monitoring and assessment activities.

Acid Volatile Sulfides and Simultaneously Extracted Copper, Lead, and Zinc in Sediments of Sinclair Inlet, Washington

As part of an assessment of the availability and mobility of toxic metals in the sediments of Sinclair Inlet, Puget Sound, Washington, acid volatile sulfides (AVSs) and simultaneously extractable metal (SEM) concentrations of copper, lead and zinc were measured in conjunction with the deployments of an NRaD-developed benthic contaminant flux device. The benthic contaminant flux device was used to measure the *in situ* metal flux between the sediments and the water column at ten stations in the inlet. The AVS and SEM measurements were made from sediment cores collected at the benthic flux stations to assess the geochemical availability and potential toxicity of the metals present.

The stations selected encompass the range of metal concentrations in the inlet and provide a representative analysis of the potential for the release of toxic metals. This

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report describes the procedures and methods used for sampling and analyzing AVS and SEM, presents the results obtained, and evaluates the significance of AVS and SEM concentrations measured in the sediments of Sinclair Inlet.

Environmental Effects from In-Water Hull Cleaning of Ablative Copper Antifouling Coatings

The primary goal of this field study was to objectively evaluate the magnitude of environmental effects attributable to in-water hull cleaning operations in a typical Navy harbor. San Diego Bay was selected for detailed analyses of vessels coated with copper-based antifouling paints. This evaluation can be used to support discussions with environmental regulators, strengthen future compliance strategies and provide a framework for future monitoring studies.

During the course of this investigation, six detailed measurement/sampling series were accomplished during in-water hull cleaning operations. Hull cleaning effluent plumes were monitored for several hours while copper levels were measured to assist in defining the composition, amounts and fates of typical hull cleaning effluents. Harbor-wide surveys of copper levels and related oceanographic parameters were performed during periods when hull cleanings were not taking place to characterize background levels and ambient copper distribution.

The fate and effects of three primary by-products of hull cleaning were evaluated:

- Dissolved copper - mostly released during and shortly after hull cleaning activities from brushed and fragmented paint surfaces.
- Particulate copper - present largely as paint chips associated with bottom sediments; some fine material is suspended in the water column for varying lengths of time.
- Organic fouling debris - present mostly on and in sediments near hull cleaning areas (derived from fouling growth brushed from hulls).

In most studies of copper toxicity, "total copper," which includes copper of all species, is measured and is assumed to be responsible for any noted toxic effects. In reality, considerable differences exist in the biological availability and toxicity of various copper species. The measurement of biologically active and ligand-exchangeable copper was an important aspect of this program. These are the two groups of copper species having the greatest biological availability and mobility.



ABOUT THE MARINE ENVIRONMENTAL UPDATE

This newsletter is produced by the Marine Environmental Support Office (MESO) and is dedicated specifically to inform the Navy about marine environmental issues that may influence how the Navy conducts its operations. MESO is located at the Naval Command, Control and Ocean Surveillance Center's Research, Development, Test and Evaluation Division (NRaD) in San Diego, California. The mission of MESO is to provide Navy-wide technical and scientific support on marine environmental science, protection and compliance issues. This support covers a broad spectrum of activities, including routine requests for data and information, technical review and consultation, laboratory and field studies, comprehensive environmental assessments, and technology transfer. Significant developments in marine law, policy, and scientific advancements will be included in the newsletter, along with references and points of contact for further information. The Marine Environmental Support Office may be reached at:

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