

**U.S. DEPARTMENT OF ENERGY  
LOS ALAMOS NATIONAL LABORATORY**

**NPDES Permit Compliance Program  
Summary of Success**

**NPDES Outfall Reduction Program**

The Los Alamos National Laboratory's National Pollutant Discharge Elimination System (NPDES) Outfall Reduction Program should be recognized for the successful deletion of 105 wastewater outfalls from the Laboratory's NPDES Permit No. NM0028355 since 1993 (See Attachment 1). As a result of the deletion of 105 wastewater outfalls, the Laboratory has experienced a significant positive impact including: water conservation; reduced contaminants to the environment; reduction in programmatic costs associated with permitting, monitoring, chemical analysis, and reporting; improved environmental excellence and performance with contract requirements; and the reduction of the Laboratory's environmental compliance liabilities through minimization of NPDES Permit exceedances, and an increase in overall compliance with the Clean Water Act and the Laboratory's NPDES Permit.

The Laboratory's NPDES Outfall Reduction Program has demonstrated exceptional performance in planning and meeting the Laboratory's objectives and programmatic efforts for achieving water quality improvements and positive environmental results. In October 1993, the Laboratory had 141 NPDES permitted outfalls. Successful reduction of 105 wastewater outfalls to-date has been achieved through effective coordination and integration of several special projects and dedicated activities with the Department of Energy (DOE) – Los Alamos Area Office (LAAO), Laboratory Management, facility management staff, outfall owners, and outfall contacts. The Laboratory's Outfall Reduction Program provided quality customer service and support to Laboratory outfall owners by providing technical and regulatory expertise, and effective coordination and oversight of outfall reduction activities. This effort effectively provided institutional assurance and consistency regarding Laboratory NPDES outfall permit matters; and addressed concerns of both the outfall owners and regulators without interruption to facility operations.

The 105 NPDES outfalls eliminated to-date represent all types of wastewater systems including, sanitary (Category S), radioactive (Category 051), and other industrial effluents. Industrial effluents are further broken down into waste stream categories by the U. S. Environmental Protection Agency (EPA). These waste stream categories include: (Category 01A) Power Plant Discharges, (Category 02A) Steam Plant Discharges, (Category 03A) Treated Cooling Water, (Category 04A) Once-Thru Cooling and Water Production Well Facilities, (Category 05A) High Explosives Wastewater, (Category 06A) Photo Rinsewater, (Category 07A) Asphalt Production and, (Category 128) Printed Circuit Board Discharges.

The Laboratory currently has 36 NPDES permitted outfalls. Applications for 34 outfalls were included in the Laboratory's 1998 NPDES Permit Re-Application document submitted May 4, 1998, to the EPA. The elimination of 16 additional outfalls is planned. Three of the 16 outfalls will be deleted pending completion of physical construction and approval from the New Mexico Environment Department (NMED) and the EPA. Thirteen additional outfalls will be eliminated as a result of the lease transfer of the drinking water system from DOE to the Los Alamos County. The elimination of 121 outfalls total will have resulted from several activities including:

(1) the removal of process flows; (2) re-piping of wastewater drain systems; (3) plugging of open floor drains; (4) modification, removal, replacement or installation of equipment such as package recirculation units; and, (5) the lease transfer of the drinking water system to the Los Alamos County. Additionally, the construction of the Laboratory's TA-46 Sanitary Wastewater System Consolidation (SWSC) Facility in 1992 and the TA-16 High Explosives Wastewater Treatment Facility (HEWTF) in 1997, contributed significantly to outfall reduction.

Construction of the TA-46 SWSC Facility eliminated 8 of the Laboratory's 9 sanitary treatment facilities, plus 30 septic tank systems. As a result, 8 permitted outfalls (Category S), were eliminated and overall compliance significantly increased from 96.8% to 99.3% (See Attachment 2). The only sanitary outfall remaining to-date is Outfall 13S located at the new TA-46 SWSC Facility.

In October 1997, construction and start-up of the TA-16 HEWTF was completed. As a result of the construction of the HEWTF, 19 of 21 high explosive (Category O5A) wastewater outfalls have been eliminated and overall effluent reduction of 99% through waste minimization and recycling of effluent. Construction of the HEWTF now allows for the transfer of HE-contaminated fluids from existing building sumps to the treatment facility, rather than continued discharge to the environment from the TA-16 NPDES outfalls. Outfall 05A055, located at the new TA-16 HEWTF; and, Outfall 05A097, located at the TA-11 Drop Pad are the only 2 remaining HE outfalls. Overall compliance at the industrial outfalls has significantly increased from 97.6% to 99.4% (See Attachment 2).

Future activities are planned to further reduce the number of permitted outfalls. Additional elimination of outfalls will be accomplished as a result of the long-term NPDES Outfall Reduction Program objectives which requires evaluation for continued outfall operation by the Laboratory Division Directors, Facility Managers, and/or outfall owners. Outfall owners will also be required to propose designs and plant modifications which provide for "reduced" or "no flow" outfall wastewater effluent discharge systems.

### **WASTE PROFILE/WASTE ACCEPTANCE CHARACTERIZATION, AND CERTIFICATION PROGRAM**

The Laboratory's Waste Acceptance, Characterization, and Certification Program requires any waste generator to properly identify and document the characterization of any solid, liquid, hazardous, radioactive, or mixed waste pursuant to the Laboratory Implementation Requirements (Lab-wide Standards). The Waste Profile Form (WPF) is used to provide a complete and concise description of the waste, including the details of the generating process. The WPF process provides generators with guidance to help make the determination of the waste's physical, chemical, and radiological characteristics with sufficient accuracy to permit proper segregation, treatment, and disposal according to the final treatment/disposal facility's waste acceptance criteria (WAC).

The Laboratory has developed WACs for the TA-50 Radioactive Liquid Wastewater Treatment Facility (RLWTF), TA-46 SWSC Facility, and TA-16 HEWTF. Waste Acceptance Criteria are based on NPDES effluent limits, New Mexico Water Quality Standards, Resource Conservation and Recovery Act (RCRA) Universal Treatment Standards, and/or other federal and state requirements. The treatment processes and the capacities of these facilities are also considered during the development of WACs.

Each Group or Division at the Laboratory that generates liquid waste is represented by a Waste Management Coordinator (WMC), the primary contact between the waste generators and the treatment/disposal facility. Each Laboratory Group must ensure that: (1) waste streams discharged into the TA-50 RLWTF, TA-46 SWSC Facility, or the TA-16 HEWTF are acceptable under the Laboratory's NPDES Permit; (2) operating personnel are familiar with pertinent administrative requirements, and waste management regulations; (3) the wastewater does not exceed the recommended limits set forth in the WAC for the TA-50 RLWTF, TA-46 SWSC Facility, or the TA-16 HEWTF; (4) listed hazardous wastes are not discharged into the TA-50 RLWTF, TA-46 SWSC Facility, and the TA-16 HEWTF; and, (5) the treatment/disposal facility personnel are notified of any unusual or accidental discharges that may violate waste management regulations.

Waste Profile Forms (WPFs) are prepared by the WMCs as required for any new discharge to the aforementioned NPDES wastewater treatment facilities or their collection systems. Additionally, the Laboratory's Waste Acceptance, Characterization, and Certification Program requires that a WPF be prepared if an existing waste stream to these facilities significantly changes in quality or quantity. The waste generator is required to notify the Laboratory's Water Quality and Hydrology Group (ESH-18) Group of any significant changes in the waste streams.

The WPF/WAC processes have provided a positive impact to Laboratory operations by assuring that all waste streams are identified, characterized, and properly disposed in accordance with all state and federal requirements. Additionally, on-site treatment at all liquid waste treatment and disposal facilities has provided operating groups with alternative disposal locations resulting in significant cost savings for treatment and disposal of liquid wastes.

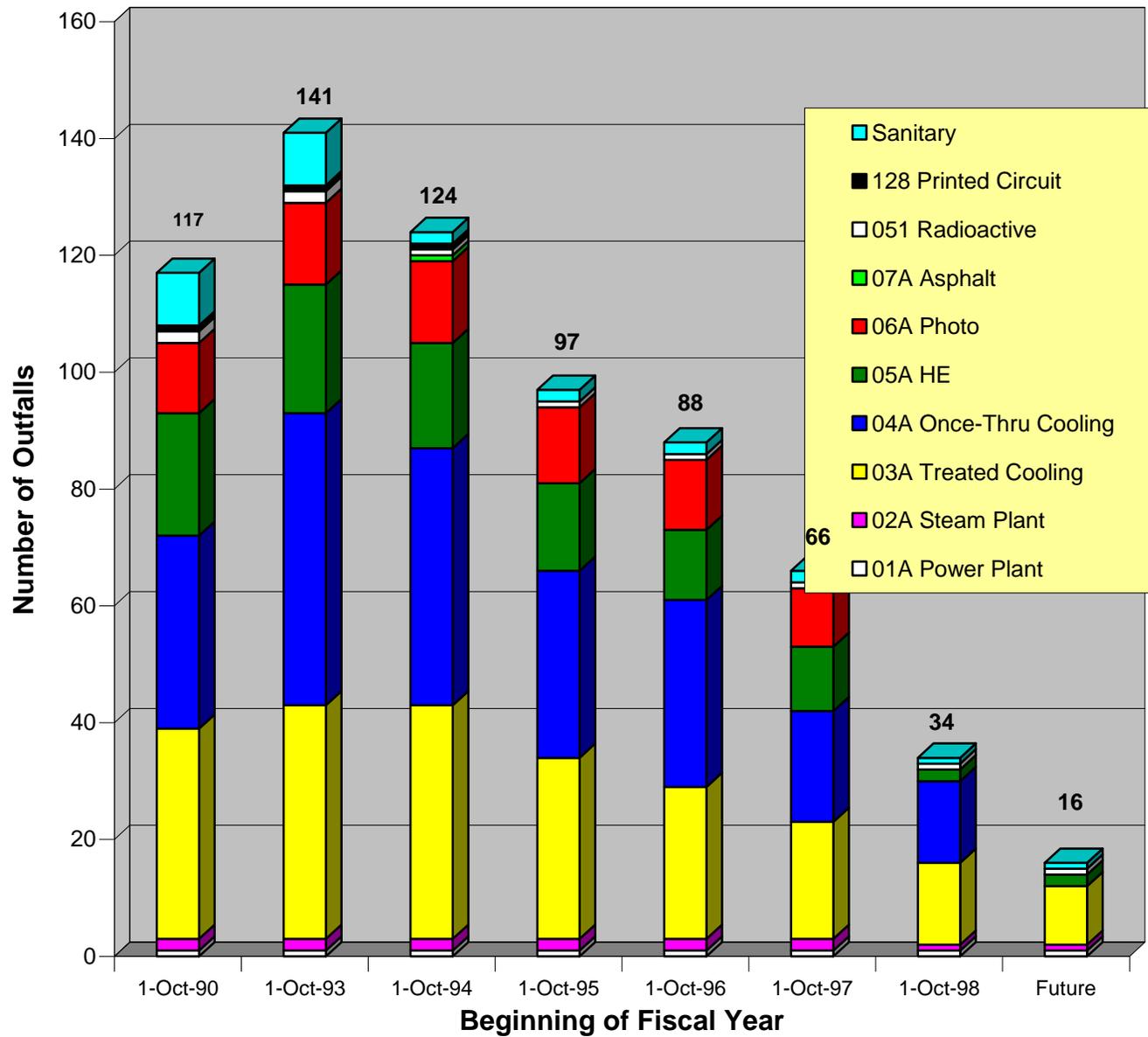
Activities accomplished under the NPDES Outfall Reduction Program and the Waste Profile/Waste Acceptance, Characterization, and Certification Program are consistent with the objectives set forth in the *Laboratory's Business Plan for NPDES Permit Compliance*, dated March 31, 1995. The Business Plan was prepared by the Laboratory's ESH-18 NPDES Outfall Team. The primary objects of the business plan is to: (1) provide a framework for unifying and coordinating Laboratory NPDES Program compliance activities; (2) to develop and implement the NPDES Permit Compliance and Outfall Reduction Programs at the Laboratory; and, (3) to insure and improve compliance with the Clean Water Act and the Laboratory's NPDES Permit.

(DOE Contact: Karen Agogino, (505) 845-6100)

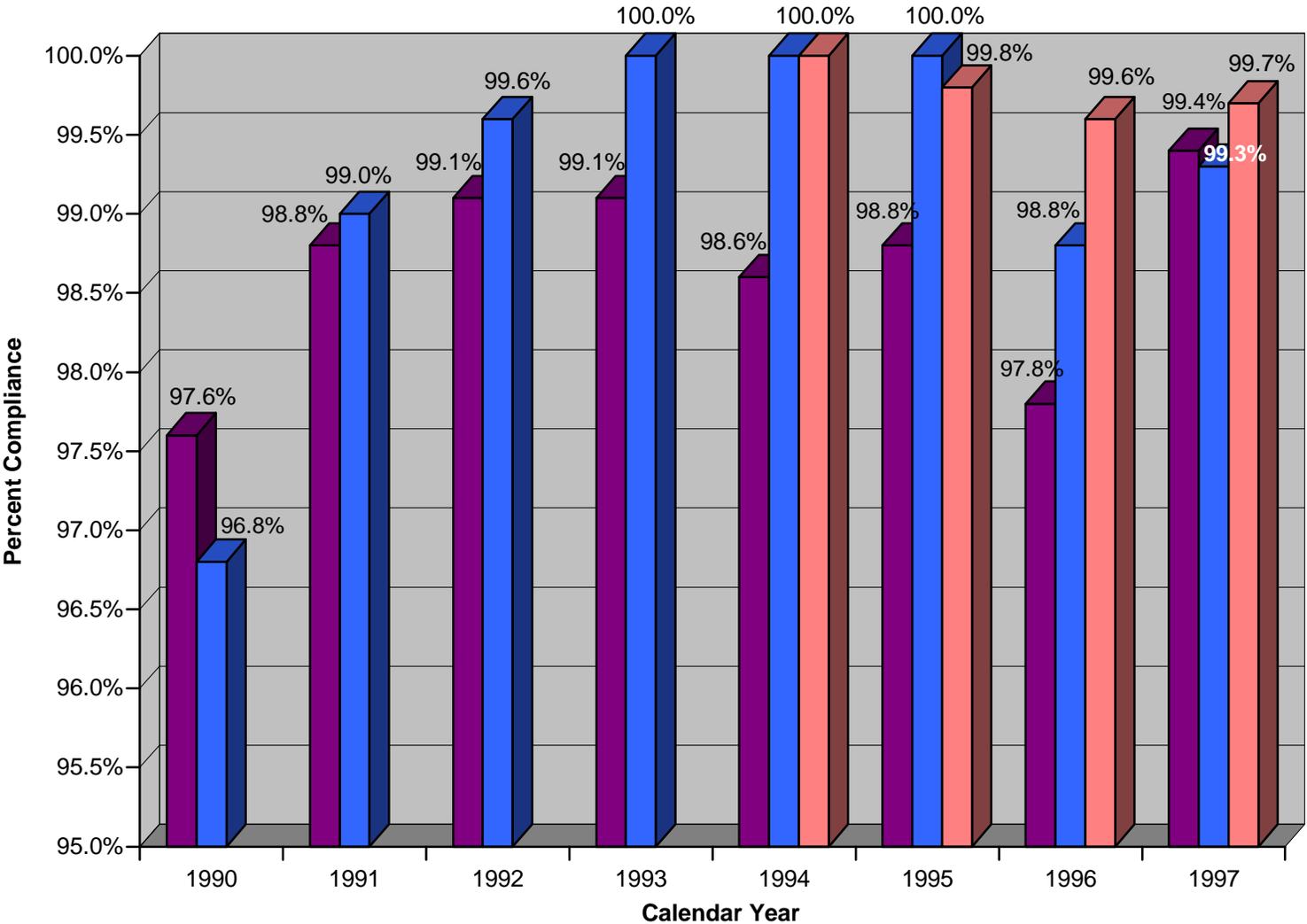
# ATTACHMENT 1

## Los Alamos National Laboratory

### NPDES OUTFALL REDUCTION HISTORY



**ATTACHMENT 2**  
**Los Alamos National Laboratory**  
**NPDES ANNUAL COMPLIANCE HISTORY**



■ Industrial ■ Sanitary ■ Water Quality Stds.