

# Permit

Los Alamos National Laboratory  
NPDES Permit No. NM0028355  
EPA/LANL Meeting  
January 30, 1998

Meeting attendees were introduced to one another. A list of attendees is attached. Following introductions, staff from Los Alamos National Laboratory (herein after referred to as the "Laboratory") provided the following summary and status of the NPDES Permit Program.

## **(1) Laboratory's Compliance Summary for 1997:**

### **NPDES Non-Compliances**

Laboratory staff discussed NPDES industrial and sanitary effluent non-compliances and spills occurring during 1997. The Laboratory had a total of nine (9) NPDES exceedances during 1997, down from 40 exceedances during 1996. A copy of all non-compliance reports have been previously provided to EPA with the Discharge Monitoring Reports (DMRs) during the specific monitoring period when they occurred. A summary of the corrective actions taken by the Laboratory are listed below.

#### **Industrial:**

(1) TA-53, Cooling Towers 62 and 64 (NPDES Outfalls 03A048 and 03A049).

There were two arsenic exceedances at TA-53 cooling towers 62 and 64 (NPDES Outfall 03A048 and 03A049) on January 16, 1997. The Laboratory's LANSCE Division is currently monitoring the arsenic levels in the cooling tower basins. Short-term corrective actions include using untreated redwood in cooling tower repair; operational sampling; controlling blow-down cycles in the cooling tower; and, routing the wastewater through an ion exchange treatment system for further treatment, as needed. The long-term corrective action is to replace the two wooden cooling towers with new unit(s) constructed of steel, fiberglass, and PVC.

(2) TA-53, Cooling Towers 293, 365, 1032 (NPDES Outfall 03A113).

There were two chlorine exceedances (daily avg/daily max) at NPDES Outfall 03A113 on February 20, 1997. Upon discovery of the elevated chlorine, the operating group immediately shut off and locked out the blow-down valves. The cooling tower basin (structure number 293) that was over-chlorinated was treated with a neutralizing agent and returned to service on February 24, 1997. The facility returned to the original treatment method of placing a mesh bag containing bromine/chlorine tablets in the cooling tower basin, which allows for a controlled chemical addition.



(3) TA-50, Building 1 (NPDES Outfall 051).

There was one pH non-compliance at NPDES Outfall 051 on April 8, 1997. The exact cause of the non-compliance was not identified. The operating group suspects the compliance pH meter malfunctioned although no problems with the meter could be found. An operator failed to follow established procedure by not being present in the control room to respond to the pH alarm. The low pH of 5.9 S.U. occurred for approximately 2 minutes. Corrective actions being considered is to have a computerized system programmed to automatically stop the effluent discharge pump when the system is alarmed. Discharge is into an ephemeral tributary to Mortandad Canyon. The discharge did not cross the Laboratory boundary.

(4) TA-55, Cooling Tower at Building 6 (NPDES Outfall 03A181).

There was one pH exceedance and two vanadium exceedances (daily avg/daily max) at NPDES Outfall 03A181 on October 30, 1997. Upon discovery of the non-compliant condition, the discharge was stopped. Due to safety and equipment damage concerns, the discharge was resumed pending a work permit to adjust the pH. The work permit was received and HCl was added on October 30, 1997, adjusting the pH to within permit limits. Operators at the site indicated that the cooling tower monitoring equipment was not operating correctly and was not properly calibrated or maintained. The operating group repaired the monitoring equipment which has increased the number of blowdown cycles thus reducing the concentration in the cooling tower to lower pH and reduce vanadium concentrations in the cooling tower basin.

#### **Sanitary:**

(1) TA-46, Sanitary Wastewater Systems Consolidation (SWSC) Plant (NPDES Outfall 13S).

There was one BOD exceedance at the TA-46 SWSC Plant on March 20, 1997. The Laboratory conducted a two-phased pilot study using the MIOX SAL-80 System for disinfection of wastewater at the TA-46 SWSC Plant. The purpose of the pilot study was to evaluate the use of the MIOX System rather than the existing chlorine gas system for effluent disinfection. Initial operational data suggested that the problem was due to the MIOX System increasing BOD at the outfall. The SWSC Plant Operating Engineer believed that the exceedance was caused by other factors and conducted a separate investigation. The exact cause of the non-compliance has not been identified.

#### **Spills:**

The Laboratory had a total of eighteen (18) liquid releases during 1997. All releases were reported to the New Mexico Environment Department under Section 1203 of the New Mexico Ground and Surface Water Quality Protection Regulations (20 NMAC 6.2). A copy of each release report was also provided to EPA to meet NPDES Permit requirements. Laboratory representatives briefly discussed the corrective actions for each discharge. A copy of the Laboratory's Liquid Release Notification Log was also provided to EPA.

## Compliance Evaluation Inspection

On May 15 and 16, 1997, Ms. Barbara Hoditschek and Ms. Ann Young of the New Mexico Environment Department, Surface Water Quality Bureau (NMED/SWQB), conducted a Compliance Evaluation Inspection (CEI) at the Laboratory's TA-46 SWSC Plant (Outfall 13S). Ms. Hoditschek submitted the CEI Report to the EPA and the Laboratory on January 23, 1998. The Laboratory provided a copy of the CEI Report to EPA. Laboratory representatives briefly reviewed the report and discussed corrective actions.

The Laboratory indicated that the main concerns noted in the CEI Report by NMED included: (1) sludge management/disposal; (2) issues concerning NPDES Outfall 001, deleted Outfall 01S, and Outfall 13S; (3) sample collection for fecal coliform; and (4) discharge into a drainage located on the side of the SWSC Plant. The Laboratory indicated that corrective actions have been completed to eliminate the discharge of treated effluent used in irrigation at the SWSC Plant from entering Canada del Buey, and that the Laboratory has changed its NPDES sampling procedures and sampling techniques for collection of fecal coliform samples.

However, the Laboratory disagreed with NMED's findings associated with sludge management/disposal and issues at NPDES Outfall 001, deleted Outfall 01S, and Outfall 13S. The last time the Laboratory disposed of sludge by land application was November, 1995. All sludge disposed since November, 1995, has been disposed at a TSCA permitted landfill. A "Notice of Changed Condition" to landfill the sludge was submitted to EPA on July 31, 1997. EPA approved the disposal of sludge at a landfill authorized to accept this material on November 13, 1997.

NMED also raised concerns that the deleted Outfall 01S outfall has not been sampled. The NPDES Permit does not require monitoring at the outfall. The Laboratory collects the NPDES compliance samples at the end of the chlorine contact chamber, as required by the NPDES Permit for Outfall 13S. Outfall 13S effluent is then reused in cooling operations and discharges to Outfall 001 or through the old 01S Outfall into Sandia Canyon. The Laboratory's NPDES Permit requires the Laboratory to utilize Best Management Practices (BMPs) in such a manner as to enhance and maintain wetland areas in Sandia Canyon and Canada del Buey. To date, Outfall 13S has not discharged into Canada del Buey, therefore, wetland vegetation does not exist below the TA-46 SWSC Plant. The Laboratory is addressing wetlands maintenance below NPDES Outfall 001 (Sandia Canyon) through BMPs to be installed by the Laboratory. The Laboratory will provide a detailed written response to EPA and NMED regarding these issues and corrective actions. 

Dioxin-Request for Deletion

On March 21, 1997, the Laboratory submitted a request to EPA for the removal of Dioxin from NPDES Permit monitoring requirements for Outfall 051 (TA-50 Radioactive Liquid Waste Treatment Facility). The Laboratory has been sampling for Dioxin on a monthly basis as required by its NPDES Permit dated August, 1994. Dioxin has not been detected in any of the samples collected. The March, 1997, letter indicated that the Laboratory's Chemical Inventory List did not identify Dioxin and to the best of our knowledge that Dioxin was not present at the Laboratory. However, since that date, an unopened container of dibenzo-p-dioxin (TCDD) was discovered at one of the Laboratory's facilities. The Laboratory has since properly disposed of the container (not part of the Outfall 051 waste stream).

The Laboratory requested EPA review and respond to the letter. Mr. Spencer indicated he would review the request and provide a response to the Laboratory. ★

**(2) FFCA/AO Close Out:**

Laboratory representatives provided EPA with a copy of the draft AO/FFCA Quarterly Report for January, 1998. A summary of the corrective activities is provided below.

High Explosives Wastewater Treatment Facility (HEWTF)

Initial testing and start up have been completed at the Laboratory's new High Explosives Wastewater Treatment Facility (HEWTF). New Waste Acceptance Criteria (WAC) have been developed for the new HEWTF based upon RCRA Universal Treatment Standards (UTS) and NPDES Permit requirements. Wastewater which does not meet the UTS is being sent to the existing HEWTF which will remain on-line and serve as a back-up treatment facility until all HE waste streams are characterized and are confirmed to meet the WAC for the new HEWTF. Both the new and back-up HEWTF are currently meeting NPDES Permit limitations.

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The Laboratory indicated that the finalized AO/FFCA Quarterly Report for January, 1998, would be submitted to EPA within a couple of weeks. A copy of the November 3, 1997, Status Report letter, and the Notice of Changed Conditions, dated January 29, 1998, which included HEWTF treatment schematics and potential contaminants of concern were reviewed and provided to EPA.

Waste Stream Characterization Program and Corrections Project (WSC)

Due to a serious accident occurring in January, 1996, and a delay in re-start of WSC construction activities at the Laboratory, a request for extension of the September, 1996, AO/FFCA completion milestone was made to EPA. EPA granted the Laboratory a six-month extension for the Waste Stream Corrections (WSC) Project under Administrative Order (AO) VI-96-1236.

The WSC Project was completed on March 31, 1997. Each of the 7,602 deficiencies identified in the Waste Stream Characterization Final Reports were addressed by construction of physical improvements, by implementation of administrative controls, or by three modified permit applications submitted to the EPA on March 13, 1997.

During the WSC Project, the Laboratory's Industrial Hygiene and Safety Group conducted operational safety reviews of completed construction. As a result of these reviews, approximately 50 drains that were previously plugged to prevent non-complying discharges from entering the environment were identified as potential safety hazards. These potential safety hazards have been addressed through alternative methods such as internal controls of discharges and, opening and re-routing of drains in order to mitigate potential operational hazards.

On April 1, 1997, the Laboratory submitted to EPA, the Quarterly Progress Report (January 1, 1997 thru March 31, 1997) certifying completion of WSC Project in compliance with AO VI-96-1236. All completed corrective actions have been tracked and verified by use of a database system developed by the Laboratory. Information collected under this database system will be used for preparation of the Laboratory's NPDES Permit Re-Application, which is due for submittal to the EPA in May, 1998.

### **(3) Outfall Reduction Program:**

In conjunction with the WSC Project, an in-depth assessment of the Laboratory's 88 NPDES permitted outfalls was performed to determine candidate outfalls for elimination. In addition to the 39 NPDES outfalls which were eliminated as a result of waste stream corrections and construction of the HEWTF, the Outfall Reduction (OR) Program has identified an additional 16 outfalls for potential elimination. These 16 outfalls have been identified as unused or underutilized. The elimination of 55 outfalls total is proposed and will result from the installation of recirculation units or re-routing of flows. Outfalls, which will remain "storm water only," will be further evaluated regarding appropriate regulatory coverage, and will be managed accordingly.

As required by DOE's National Environmental Policy Act (NEPA) Regulations, two Environmental Assessments (EAs) were performed by DOE Los Alamos Area Office (LAAO) with the assistance of two Laboratory groups, the Water Quality & Hydrology Group and the Ecology Group. The EAs were performed to determine impacts to the environment due to the elimination of effluent from outfalls targeted for reduction. On August 27, 1995, the DOE/LAAO issued a "Finding of No Significant Impact (FONSI)" for high explosive wastewater outfalls which have been eliminated as a result of the construction of the HEWTF.

Additionally, a categorical exclusion and FONSI were issued by DOE/LAAO on January 12, 1996, and September 18, 1996, respectively, for proposed effluent reduction from NPDES outfalls targeted for elimination as a result of the WSC Project activities and Outfall Reduction Program activities.

Following completion of outfall reduction activities, the Laboratory is expected to have approximately 34 remaining NPDES outfalls. These 34 outfalls plus any proposed new ones related to the Laboratory's potable water supply (approximately 13) will be included in the May, 1998, NPDES Permit Re-Application submittal to the EPA.

**(4) NPDES Permit Re-Application:**

The Laboratory's NPDES Permit No. NM0028355 will expire on October 31, 1998. NPDES Regulations require that a permit application be submitted for renewal by EPA and for certification by the NMED 180 days prior to expiration (May 5, 1998) of the existing permit. This is currently the only active NPDES Industrial Wastewater Permit at the Laboratory. On December 29, 1997, the Laboratory's second NPDES Industrial Wastewater Permit (No. NM0028576) for the Fenton Hill Geothermal Site was discontinued by EPA at the Laboratory's and DOE's request.

Information generated from the completion of several activities will be integrated and compiled into a permit re-application document. Activities include completion of: the WSC Project and Outfall Reduction Program; administration of an outfall owner survey; implementation of a special flow study; sampling of effluent at outfalls; and, the compilation of a three year compliance data summary from existing Discharge Monitoring Reports (DMRs), including specified radiation parameters. These activities are presented in more detail in the draft document entitled "*Los Alamos National Laboratory NPDES Permit Re-Application Project Implementation Plan,*" dated December, 1997. A copy was provided to Mr. Everett Spencer, and Mr. Scott Wilson. The Laboratory indicated that a final copy of the Plan will be forwarded following completion.

The following is a status report of re-application activities and a summary of issues which were presented and discussed in more detail. Questions raised or requests for EPA clarification are noted as applicable.

**Computer Re-creation and Generation of NPDES Permit Re-Application Forms**

The Laboratory requested approval to use computer generated re-created NPDES Permit application forms in lieu of the pre-printed forms provided on the internet by EPA.

With the exception of the *Standard Form A*, all NPDES application forms have been re-created at the Laboratory as "Reports" in Microsoft ACCESS to enable automated data entry, and ensure accuracy, completeness, and ease of reproduction. The forms have been reviewed by a quality assurance specialist for conformance to the "original" forms as downloaded from the internet at the address [www.epa.gov/earth1r6/6wq/npdes/forms/forms.htm](http://www.epa.gov/earth1r6/6wq/npdes/forms/forms.htm).

Mr. Scott Wilson, approved the Laboratory's verbal request to the computer re-creation of the EPA NPDES application forms for use in the May, 1998, submittal.

### Completion of Standard Form A

The Laboratory requested clarification of EPA NPDES regulations regarding whether or not completion of a *Standard Form A* was required for renewal of NPDES Permit No. NM0028355.

On February 2, 1998, Mr. Scott Wilson, indicated in a phone call to the Laboratory (Ms. Tina Marie Sandoval) that the completion of a *Standard Form A* would not be required. However, Mr. Wilson indicated that the Laboratory would be required to submit a copy of its *Sludge O&M Plan*, which describes sludge treatment and disposal issues, as an attachment to the Form 2C for Outfall 13S, located at the TA-46 SWSC Facility.

### Chemical Parameters Sampled for Re-Application Purposes

NPDES Application Form 2C, Items V-A, B, C, and D require the applicant to collect and report data on the pollutants discharged for each of the outfalls included in the re-application. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part.

Part A requires the applicant to report at least one analysis for each pollutant listed. Parts B and C require the applicant to report analytical data in two ways. For some pollutants, the applicant may be required to mark 'x' in the "Testing Required" column (column 2-a, Part C), and test (sample and analyze) and report the levels of the pollutants in the discharge whether or not the pollutants are expected to be present in the discharge. For all others, the applicant must mark 'x' in either the "Believe Present" column or the "Believe Absent" column (columns 2-a or 2-b, Part B, and columns 2-b or 2-c, Part C) based on the applicants best estimate, and test for those which the applicant believes to be present. Form 2C also requires that the determination be based on the applicants determination that a pollutant is present in or absent from the discharge or the applicants knowledge of raw materials, maintenance chemicals, intermediate and final products and by-products, and previous analyses known by the applicant regarding the effluent or similar effluent. Also, if the applicant expects a pollutant to be present solely as a result of its presence in the intake water, the applicant must mark "Believe Present" but the applicant is not required to analyze for that pollutant. Instead, an 'x' must be marked in the intake column.

The Laboratory indicated to EPA that the sampling of outfall discharges for permit re-application purposes are being performed according to the general instructions noted above. However, due to analytical costs, the parameters sampled for will be selected on an outfall by outfall basis. The Laboratory intends to perform a full analytical scan for all Form 2C priority pollutants for a minimum of one outfall per NPDES category. As required, Form 2C information for priority pollutants analyzed for will be provided from a "knowledge of process" basis (i.e., knowledge of raw materials, maintenance of chemicals, intermediate and final products and by-products), and also from other analytical data available for outfall effluents.

Mr. Scott Wilson and the other EPA representatives indicated they concurred with the re-application sampling regime being performed by the Laboratory.

#### Composite -vs- Grab Sampling of Outfalls

Form 2C instructions indicate that, "the Director may waive composite sampling for any outfall for which you demonstrate that use of an automatic sampler is infeasible and that a minimum of four grab samples will be representative of your discharge."

The Laboratory requested approval for the use of grab samples versus composite samples for batch discharges and discharges from outfalls, which are of low volume and intermittent flow. Because these types of discharges are not continuous, a 24-hr composite sample (definition: at least 8 grabs of 100 milliliters each) is infeasible. Mr. Scott Wilson, provided verbal approval allowing the collection of one grab sample in lieu of four grab samples or a composite sample, for low-flow intermittent and batch discharges.

#### Request for Approval to Use Alternative Method for Sample Analysis

The Laboratory requested a response to a letter dated January 8, 1998, addressed to Mr. Charles Ritchey, wherein a request was made for interim approval for the use of EPA Method 200.8 (Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma Mass Spectrometry) for the analysis of cadmium and lead for the Laboratory's NPDES Permit and Permit Re-Application.

In addition, the Laboratory requested whether previous EPA approval granted to Assaigai Analytical Laboratories for use of EPA Method 300.0 as a alternative method for NPDES Permit purposes also extended to Los Alamos National Laboratory for NPDES Permit Re-Application purposes since Assaigai Analytical Laboratories is completing analytical work for the permit re-application.

An EPA letter dated February 4, 1998, (copy attached) was received by the Laboratory, addressed to Mr. Steve Rae from Mr. Sam Becker, Acting Assistant Regional Administrator for Management. The EPA letter approves the Laboratory's request to use EPA Method 200.8 for the measurement of cadmium and lead. On March 6, 1998, Mr. Scott Wilson provided verbal approval via telephone to Ms. Tina Marie Sandoval, regarding use of EPA Method 300.0 by the Laboratory as an alternative analytical method for NPDES Permit and Permit Re-Application purposes.

### Permitting of Production Well Mechanical Equipment Discharges (i.e., bearing cooling water)

The Laboratory requested clarification regarding NPDES permitting requirements for mechanical equipment discharges to floor drains from water supply facilities. Currently, the floor drains, which have been submitted to NMED in a NOI, can receive intermittent flows of bearing cooling water during pump operation and from leaks from potable water pipes, sand samplers, and pumps. These discharges do not include the larger blowdown flows from the well pumps, which are piped separately from these floor drains and presently covered under the Laboratory's NPDES Permit (Category 04A Outfalls).

Both Mr. Everett Spencer and Mr. Scott Wilson, agreed that Form 2Ds should be submitted in the upcoming re-application for these discharges to floor drains. Mr. Mike Saladen of the Laboratory indicated that they would be included in the permit re-application as directed.

### Form 2C "Other Potential Contaminants of Concern"

Laboratory representatives indicated that the Form 2C currently does not address or require information regarding many contaminants that may be generated at the Laboratory. Potential for generation of these "other" contaminants arise from the Laboratory's diverse research and development programs.

EPA representatives acknowledged this information and indicated that in the case(s) where these "other potential contaminants of concern" were identified, that the Laboratory should document this information in summary form by the generic chemical name, and provide this information as an attachment or appendix to the relevant Form 2C.

### Storm Water

A copy of the Laboratory's listing of NPDES outfalls with co-mingling stormwater was provided to EPA for informational purposes. EPA raised several questions regarding the permitting of storm water at Los Alamos National Laboratory.

Laboratory representatives briefly explained that the Laboratory's storm water runoff is currently regulated under a General Notice of Intent (NOI) Permit. To provide further clarification, the Laboratory is currently covered under a single NPDES Storm Water Baseline General Permit for Industrial Activity. This permit expired on September 9, 1997, and under EPA guidance the Laboratory applied for an extension of the Baseline General Permit until EPA publishes the modified Multi-Sector General Permit. The industrial activities at the Laboratory include the Charter Codes of: HZ for hazardous waste treatment, storage, or disposal facilities; LF for landfills; land application and open dumps; and, SE for steam electric power generating facilities.

For storm water discharges associated with industrial activity, the Laboratory will continue to cover these discharges under the General Storm Water Permits issued by EPA. It is the Laboratory's intention not to include storm water discharges with the permit re-application for NPDES Permit No. NM0028355.

Additionally, the Laboratory has submitted requests to EPA for the elimination of NPDES outfalls that formerly received industrial or sanitary discharges. A few of these outfalls still receive storm water runoff. Laboratory representatives indicated that they are currently evaluating these "storm water only" outfalls for potential coverage under the Laboratory's Storm Water Program. ←

Request for Clarification on Class I Sludge Management Facility, Laboratory's NPDES Permit

Following the Laboratory's return from meeting with EPA, on February 2, 1998, a verbal request via telephone was made to Mr. Scott Wilson from Ms. Tina Marie Sandoval, regarding clarification of 40 CFR 503.9( c ), and whether or not the Laboratory meets the definition of a "Class I Sludge Management Facility." ←

A written response (copy attached) dated February 10, 1998, addressed to Ms. Tina Marie Sandoval, from Mr. Jack Ferguson, Chief of Permits Branch, was received indicating that the Laboratory "does not fall into" the category of a Class I Sludge Management Facility. This clarification will be noted in the Laboratory's response to the NMED's CEI Report dated January 23, 1998.