

Sandia National Laboratories/California
Wastewater Discharge Report

April 2007

Monitoring Program

The Sandia National Laboratories/California (SNL/CA) sanitary sewer effluent samples are collected at the site sewer outfall at the northwest corner of the site. The site outfall is equipped with two refrigerated automatic samplers. One of the samplers is programmed to collect discreet, flow-proportioned samples for each seven consecutive 24-hour periods (daily composite). The second sampler is programmed to collect one flow-proportioned sample for the entire seven-day period (weekly composite). The weekly composite is prepared and sent to a state-certified contract laboratory for analysis. The daily composite is preserved and archived on-site in the event that additional metal analyses are needed.

Continuous monitoring is done for pH and flow. Once a month a daily composite sample is collected for total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), and specific conductivity. Once a month, a grab sample is collected for cyanide. Monthly grab samples are also collected for semi-volatile organics and volatile organics. The organics results are compared to the total toxic organics (TTO) effluent limitation. Flow-proportional weekly composites are collected for metals. A state-certified contract laboratory performs these analyses.

A detailed description of the monitoring program is contained in SNL/CA's Environmental Monitoring Program Annual Report.

Sewer Monitoring Results

The attached tables present all the sampling data collected at the SNL/CA sanitary sewer outfall for April 2007. Table 1 presents the monthly sampling results for the physical, biological, and cyanide analyses. Table 2 presents the analytical results for metals analyses. Table 3 presents the monthly sampling results for TTO. For completeness, this table includes all organic constituents identified by EPA methods 624, and 625. Only the positively detected constituents are reported in this table; all other compounds were below detection limits. The sum of all organic priority pollutants was well below the TTO standard of 1 mg/L. The sewer outfall monitoring data demonstrate that SNL/CA was in compliance with all discharge limitations for this report period, the month of April 2007.

Continuous Monitoring Results

The liquid effluent from the site is monitored continuously for pH, flow rate, and total flow. The real-time monitoring data did not indicate any permit violations for pH during this reporting period, the month of April 2007. These monitoring records are maintained on site and are available upon request. Copies of the pH circular charts for April are attached in Appendix A for your review.

Discharge Volume

The total volume of wastewater discharged from SNL/CA during the period March 27, through May 1, 2007 was 951,000 gallons

Other Issues

Corrective actions taken to address the copper exceedance of March 15, 2007 include the following.

1. A Puroflux centrifugal separator is scheduled to be installed on the Building 943 cooling tower. Installation is scheduled to be completed by June 30, 2007.
2. A Puroflux centrifugal separator has been ordered for the Building 968 cooling tower. Anticipated installation date is FY07.
3. Grab samples of the Building 943 cooling tower blowdown will be collected weekly. The first grab sample showed a copper concentration of 0.71 mg/L. Since the tower had been cleaned recently, this could indicate the tower is a source of copper.
4. As a best management practice, the two major sewer trunk lines on-site are sampled for copper and zinc. Since the satellite sewer samplers did not show an increase in copper, the sampling frequency will be increased to every thirty minutes (from one hour now) to better characterize the sewer flow.
5. No suitable location downstream of Building 943 for a supplemental satellite sewer sampler. However, the cooling tower blowdown samples will provide an adequate indication of contamination from the cooling tower.

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Certification Sheet

Attached is the SNL/CA Monthly Wastewater Discharge Report for April 2007. The Wastewater Discharge/Chemical Storage Permit issued to SNL/CA by the City of Livermore Water Reclamation Plant requires this report. It contains results of the compliance sampling performed at the SNL/CA sanitary sewer outfall for the month of April 2007.

I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Gary Shamber
Manager, Environmental Management Department
Sandia National Laboratories/CA

TABLE 1. Routine Monitoring Results for Sandia Sanitary Sewer Outfall
April 2007

Date	Laboratory ID # ^a	BOD ^c (mg/L)	COD ^c (mg/L)	TDS ^c (mg/L)	TSS ^c (mg/L)	Oil & Grease ^d (mg/L)	Cyanide ^d (mg/L)
April 3	0704045-0011	74	330	124	108	<i>f</i>	0.0054
Discharge Limit ^b		N/A ^e	N/A ^e	N/A ^e	N/A ^e	100	0.04

^a Analyses performed by an off-site, state certified laboratory.

^b Discharge concentration limits, City of Livermore Municipal Code 13.32.

^c Daily composite sample. The sample represents a representative composite for a 24-hour period.

^d Grab sample.

^e N/A indicates not applicable; i.e., there is no specific discharge limit for this parameter.

^f The monitoring requirement for oil and grease has been suspended until such time as the City of Livermore Municipal Code 13.32

can be modified to remove references regarding specific analytical methods effective April 3, 1999.

TABLE 2. Routine Monitoring Results for Sandia Sanitary Sewer Outfall
April 2007

Date	Laboratory ID # ^b	As (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Hg (mg/L)	Ni (mg/L)
April								
April 3	0704045-0011	0.0012	0.00070	0.00033	0.28	0.014	0.00052	0.0057
April 10	0704200-001A	0.0011	0.00060	0.0027	0.20	0.0066	0.00050	0.0047
April 17	0704338-001A	0.0012	0.00070	0.0040	0.34	0.0080	0.00017	0.0045
April 24	0704476-001A	0.0013	0.00075	0.0085	0.28	0.010	0.00015	0.0046
Discharge Limit ^c		0.06	0.14	0.62	1.0	0.20	0.01	0.61

^aSamples are collected as a weekly composite.

^bAnalyses performed by an off-site, independent laboratory.

^cDischarge concentration limits, City of Livermore Municipal Code 13.32

^dDaily archive samples sent for analysis. See Table 4 for results.

**TABLE 3. Total Toxic Organic Monthly Monitoring Results,
April 2007**

EPA TEST METHODS

	624 Purgeable Priority Pollutants ($\mu\text{g/L}$)	Extracta Pol ($\mu\text{g/L}$)
April 3	Chloroform, 1.8	Non

This table reports all positively identified organic constituents designated as total toxic organics (TTO) by the United States Environmental Protection Agency. All other compounds comprising the EPA toxic organic list were below minimum detection limits, and therefore were not listed. The toxic organic discharge limit for Sandia National Laboratories, California is 1000 $\mu\text{g/L}$. The total toxic organic number is arrived at by summing up all organic constituents greater than 10 $\mu\text{g/L}$. Also included in the TTO calculations are specific compounds measured at detection limits excess of 0.02 mg/L which are assumed to be one-half the detection limit. Please note that Chloroform is reported in this table although it is a common constituent of chlorinated water.

APPENDIX A