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SITE ASSESSMENT REPORT

LOWER LAKES
HANSEN DAM FLOOD CONTROL BASIN
LOS ANGELES, CALIFORNIA

Prepared for:

US Army Corps of Engineers
Los Angeles District
CESPL-ED-MI
911 Wilshire Boulevard
Los Angeles, California 90017-3401

Contract No. DACA09-01-D-0004 D.O. No. 0005

Prepared by:

SOTA Environmental Technology, Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, California 92127-1613

Version: Draft
Project No. 02HW013
May 19, 2003

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Signature: _____ Date: 05/22/03
Yu Zeng, Ph.D., Project Manager

Signature: _____ Date: 5/22/03
Dakshana Murthy, Ph.D., P.E., Program Manager

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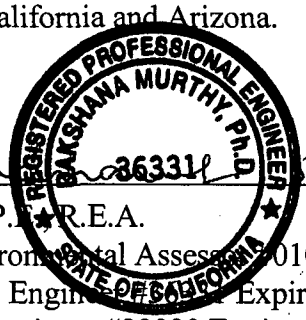
ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
COPC	Contaminants of Potential Concern
CRDL	Contract Required Detection Limit
CRWQCB	California Regional Water Quality Control Board
CWC	California Water Code
DHS	California Department of Health Services
D.O.	Delivery Order
DQO	data quality objective
EPA	(United States) Environmental Protection Agency
FCB	Flood Control Basin
GPS	Global positioning systems
HSA	Hydrographic Sub-Area
IWMB	Integrated Waste Management Board
LACDA	Los Angeles County Drainage Area
LARWQCB	Los Angeles Regional Water Quality Control Board
LEA	Local Enforcement Agency
MCL	Primary Maximum Contaminant Level (DHS, 1999)
NPDES	National Pollutant Discharge Elimination System
MSL	mean sea level
PARCC	precision, accuracy, representativeness, completeness and compatibility
PID	Photo Ionization Detector
PRG	Preliminary Remediation Goals (EPA Region IX, 1999)
QA	quality assurance
QC	quality control
PM	Project Manager
SOTA	SOTA Environmental Technology, Inc.
SOW	Scope of Work
SSHSP	Site Specific Health and Safety Plan
US	United States
USACE	United States Army Corps of Engineers
VOC	volatile organic compound
WDR	Waste Discharge Requirement

ENGINEER'S CERTIFICATION

I certify that the work performed and the report prepared herein was conducted under the direct supervision of the undersigned who is a Registered Civil Engineer and Registered Environmental Assessor in the States of California and Arizona.



36331 5/22/03

Dakshana Murthy, Ph.D., P.E. ★ R.E.A.
California Registered Environmental Assessor #01046 Expires on 6-30-03
California Registered Civil Engineer #36331 Expires on 6-30-04
Arizona Registered Civil Engineer #29090 Expires on 6-30-04


STATE OF CALIFORNIA
30331
REGISTERED PROFESSIONAL ENGINEER

EXECUTIVE SUMMARY

This Site Assessment (SA) summarizes the results of the December 2002 through March 2003 lake water, sediment, and soil sampling activities that occurred at the Lower Lakes, Hansen Dam Flood Control Basin (FCB), California. This report evaluates the nature of contamination present in and near the Large and Small Lower Lakes that may have resulted from the placement of material at those locations by the U.S. Army Corps of Engineers and potential adverse impacts to surface water, groundwater, and human health resulting from the placement of the material. The Site Assessment was conducted under contract with the United States Army Corps of Engineers (USACE), Los Angeles District.

Samples were collected from stockpiles of soil located near both Lower Lakes and analyzed for a number of constituents including VOCs, PCBs and perchlorate. None of these compounds were detected in the samples collected, except PCB-1260. PCB-1260, alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin were detected in soil stockpile samples near both lakes at concentrations below the industrial and residential Preliminary Remediation Goals (PRGs). TPH-gasoline, diesel, and motor oil, for which industrial and residential PRGs have not yet been established, were reported in one or more soil stockpile samples. Several priority pollutant metals were present at low levels comparable to background soil levels. These minerals appear to be naturally occurring at the project site. None of the metals detected in the soil samples, except arsenic and mercury, (in trace or estimated concentrations) exceeded the industrial or residential PRGs.

VOCs, perchlorate, NDMA, 1,2,3-TCP, gasoline and 1,4-dioxane were analyzed and not detected in sediment samples collected in both lakes. PCB-1260, alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, dieldrin, endrin aldehyde, heptachlor, and heptachlor expoxide were detected at levels much below industrial and residential PRGs in the sediment samples collected. Low levels (estimated concentrations) of TPH-diesel and motor oil were detected. Cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc were detected at levels below the industrial and residential PRGs. Arsenic and mercury were detected (in trace or estimated concentrations), but are believed to be naturally occurring at the site.

The water quality data suggest that lake water quality is relatively good. No VOCs, pesticides, PCBs, or perchlorate were found in lake water samples. TPH-gasoline (estimated concentrations) was present in the water in both lakes. Gasoline was also detected at the same level in the up gradient background surface water samples. Several metals were detected at low or estimated levels in the water in both lakes and were below the Maximum Contaminant Levels (MCLs). Most of the detected metals (cadmium, chromium, copper, nickel, selenium, zinc and mercury) were also found in the up gradient background surface water samples.

The SA activities and laboratory analysis indicate no evidence of elevated levels of organic or inorganic compounds in the soil, sediment, or water samples that were collected from the Lower Lakes, except for diesel detected in one stockpile sample collected near the Small Lower Lake. It should be noted that no diesel was found in water or sediment samples collected in the Small Lower Lake.

The Site Assessment results suggest that there has been no significant release of hazardous substances from the materials placed in and adjacent to the Lower Lakes into the water at either site. Further, sediment samples collected from the Lower Lakes indicate that lake sediment was not impacted by the materials placed in either lake. Thus, it appears unlikely that groundwater at the site has been adversely impacted by the placement of materials in and near the Lower Lakes. It is therefore our conclusion that the materials placed in and near the Lower Lakes pose no significant risk to human health or to the environment, and may be disposed on-site following approval and proper permitting by the RWQCB and the City of Los Angeles, Local Enforcement Agency. Following regulatory approval and disposal of the remaining *Arundo*/soil stockpile located to the north of the Small Lower Lake in an approved landfill, SOTA recommends No Further Action at the Hansen Dam FCB.

1.0 INTRODUCTION

SOTA Environmental Technology, Inc. (SOTA) has been contracted by the United States Army Corps of Engineers (USACE), Los Angeles District, to conduct surface water, sediment, and soil sampling associated with site assessment activities, under Contract No. DACA09-01-D-0004, D.O. No. 0005, in accordance with the Scope of Work (SOW) dated September 4, 2002. The site assessment activities took place at the Large and Small Lower Lakes at Hansen Dam Flood Control Basin (FCB), California. The site location map is presented in Figure 1.

The Site Assessment (SA) is performed to characterize *Arundo donax* (a type of reed) mixed with soil, stockpiled to the north of the Small Lower Lake, and native soil stockpiled on the northwest corner of the Large Lower Lake at Hansen Dam Flood Control Basin (FCB). The SA is intended to provide data that will be compared to various regulatory guidance documents that address water quality and solid waste requirements. The approved Work Plan (WP), along with the Site Specific Health and Safety Plan (SSHSP), comprised all the project-related documentation.

Prior to the SA, SOTA prepared the WP and SSHSP, dated October 28, 2002, and submitted for approval by USACE and Los Angeles Regional Water Quality Control Board (LARWQCB), the lead regulatory agency.

1.1 Objectives

The assessment is intended to provide a preliminary characterization of soil, sediment, and surface water at the site. Specifically, the proposed SA activities are intended to help fulfill the following objectives:

- Characterize the types of contaminants, if any, present at the site, as a result of *Arundo Donax* mixed with soil, which were stockpiled at the smaller lake and native soil stockpiled at the larger lake
- Delineate the distribution of contamination, if any, related to the soil stockpiles among the soil stockpile areas, nearby surface water, and sediment in the Lower Lakes
- Characterize the potential migration paths of any subsurface contamination, and
- Identify and assess the potential adverse effects to public health and the environment

1.2 Scope of Work

The scope of work for this project includes the following activities:

- After the regulators approved WP and SSHSP, sampling of nine source and soil samples, five sediment samples, and the collection of nineteen surface water samples
- Laboratory analysis of the samples collected, and
- Preparation and presentation of a report summarizing the results, conclusions, and recommendations of the SA activities at the subject site.

1.3 Report Format

The Lower Lake SA Report is organized as follows:

- Section 1 - Introduction
- Section 2 - Site Background and History
- Section 3 - Field Sampling Activities
- Section 4 - Laboratory Analyses
- Section 5 - Analytical Results
- Section 6 - Discussions and Conclusions
- Section 7 - References

Tables and Figures are included at the end of section 7. Appendices are attached with the following information:

- Appendix A Laboratory Analytical Reports
- Appendix B Photo documentation Logs
- Appendix C Analytical Laboratories Certifications
- Appendix D Sections of the 1999, 2000, 2001 RWQCB Water Quality Monitoring Results

2.0 SITE BACKGROUND AND HISTORY

2.1 Site Location and Description

The Large and Small Lower Lakes are located within Hansen Dam FCB in Los Angeles County, California. The geographic coordinates are 34° 16' 6.18" N latitude and 118° 23' 7.92" W longitude for the Large Lower Lake and 34° 16' 6.1" N latitude and 118 22' 27.9" W longitude for the Small Lower Lake. To reach the site, travel northwest from Los Angeles approximately 0.2 miles from the intersection of the 210-freeway and Foothill Drive.

Hansen Dam was constructed between September 1939 and September 1940 as part of the general system of flood control for the Los Angeles County Drainage Area (LACDA). It was constructed primarily for the purpose of flood control for the lower portions of the San Fernando Valley and the City of Los Angeles. The Dam is located on the northern edge of the San Fernando Valley in Tujunga Wash just below the confluence of the Big and Little Tujunga Creeks, approximately four miles west of the town of Sunland, California (Figure 1). The City of Los Angeles Department of Recreation and Parks leases 1,437 acres within the Hansen Dam Flood Control Basin and operates several recreational facilities on the property.

The climate of Hansen Dam is characteristically temperate; summers are warm and dry with daily temperatures reaching 90° F or higher, and winters are generally mild with daily average temperatures 55° F to 65° F. Mean annual rainfall is 12 inches.

2.2 Site History

In the 1990s, U.S. Army Corps of Engineers or Corps' contractors removed accumulations of sand and gravel to restore flood control storage capacity lost due to sediment buildup from the Big Tujunga and Little Tujunga Washes. The excavations resulted in the creation of "borrow pits." Over time, the pits filled with water and appeared like natural lakes. Currently, there are two such lakes (Large and Small Lower Lakes); they contain fish, are surrounded by vegetation, and have become important resources for birds and other wildlife.

The USACE contractors placed various materials in or adjacent to the Lower Lakes at Hansen Dam FCB. During the SA activities, two source areas were identified in these two artificially created lakes. One source area is composed of approximately 2,200 cubic yards of native soil that was excavated from beneath the re-constructed swim lake and placed above approximately 1,650 cubic yards of construction debris that was comprised mostly of crushed concrete and other clean fill in the northwest corner of the Large Lower Lake. The majority of this material is beneath the water surface with the exception of a small disposal pile of native soil near the northwestern edge of the Large Lower Lake. The other source area is approximately 900 cubic yards of *Arundo donax* (a type of reed) mixed with soil from Sepulveda Dam FCB and approximately 300 cubic yards of *Arundo donax* mixed with soil from Whittier Narrows Dam FCB. All this was placed in the northeastern embankment of the Small Lower Lake. The stockpile locations are presented in Figure 2.

The public raised concerns regarding potential threats to public health and the environment because of the materials placed in and near the Lower Lakes at Hansen Dam FCB. The City of Los Angeles, Local Enforcement Agency (LEA), contacted the Corps of Engineers concerning the piles of *Arundo donax* and soil stockpiled to the north of the Small Lower Lake. The LEA regulates solid waste in the City of Los Angeles on behalf of the California Integrated Waste Management Board (IWMB). The Los Angeles District Army Corps of Engineers has contracted with SOTA to characterize the fill material and determine whether or not the filling activities were conducted in compliance with LARWQCB General National Pollutant Discharge Elimination System (NPDES) Permits, Waste Discharge Requirements (WDR), and other applicable regulatory requirements.

2.3 Local Hydrology

The two lakes are located at approximately 1000 feet above mean sea level (MSL) in the Los Angeles River watershed. The nearby upstream surface water includes Haines Canyon Creek and the Big and Little Tujunga Washes. No drinking water intakes are within three downstream miles of the site. Although the site is not a residential area, it is a public recreational facility.

The Los Angeles River Watershed is shaped by the path of the Los Angeles River, which flows from its headwaters in the mountains eastward to the northern corner of Griffith Park where the channel turns southward through the Glendale Narrows, around the Hansen FCB, before it flows across the coastal plain and into San Pedro Bay near Long Beach. The upper portion of the Los Angeles River Watershed is covered by forest or open space, while the remaining watershed is highly developed with commercial, industrial, or residential uses. The Los Angeles River Watershed has impaired water quality in the middle and lower portions of the basin due to runoff from dense clusters of commercial, industrial, residential, and other urban activities. The Clear Water Act 1998 Section 303d lists impairments in a majority of the watershed are due to point and nonpoint sources. These impairments include pH, ammonia, a number of metals, coliform, trash, scum, algae, oil, chlorpyrifos, as well as other pesticides, and volatile organics.

The site is located in the Tujunga Hydrological Area of the Los Angeles-San Gabriel Hydrological Unit (RWQCB, 1995). LARWQCB has designated the surface water in this area with current and potential beneficial usage. The Hansen Dam floodplain behind the Dam supports open coastal sage-scrub vegetation in the Los Angeles area. The Hansen Dam area is valuable as a wildlife corridor. The Hansen Dam FCB and lakes are within the Big and Little Tujunga Wash. The existing beneficial usage of the surface water is to supply groundwater recharge, provide contact and non-contact water recreation, habitats for warm, cold, wild and rare threatened or endangered species, and the potential beneficial usage is to supply groundwater for municipal and domestic purposes. Furthermore, the existing beneficial usage of the groundwater in this area is for municipal and domestic supply, industrial process, services, and agricultural supply.

2.4 Contaminants of Potential Concern (COPC)

Based on preliminary information provided to SOTA regarding the origins of the stockpiled waste, the contaminants of potential concern for this area include emergent chemicals, Total Petroleum Hydrocarbons (TPHs), Polychlorinated Biphenyls (PCBs), and general water quality parameters. All of the COPCs are listed as follows:

Emergent Chemicals

- Volatile organic compounds (VOCs) included methyl tertiary-butyl ether (MTBE)
- Pesticides
- Perchlorate
- Priority Pollutant Metals
- N-nitrosodimethylamine (NDMA)
- 1,4-Dioxane
- 1,2,3-Trichloropropane (1,2,3-TCP)
- Chromium(VI)

Total Petroleum Hydrocarbons and PCBs:

- TPHs such as gasoline, diesel, and motor oil
- PCBs

General Water Quality parameters

- Biological Oxygen Demand (BOD)
- Nitrate
- Nitrite
- Sulfate
- Sulfide
- Chloride
- Total and Fecal Coliform

3.0 FIELD SAMPLING ACTIVITIES

From December 2002 through March 2003, field sampling activities were conducted for the Large Lower Lake and the Small Lower Lake under phased planning activities with the approval of regulators. The sampling activities included collecting soil, water, and sediment at the site and collecting background soil and surface water samples. The completed field activities were in general accordance with the Work Plan and Health and Safety Plan (SOTA, 2002) that were approved prior to the fieldwork by USACE and LARWQCB. The plans defined the field, analytical, Quality Assurance/Quality Control (QA/QC), and health and safety procedures that were implemented during the SA.

Fieldwork began with a site reconnaissance in the morning to verify that the planned sample locations were appropriate and accessible. During the reconnaissance, ambient air was monitored with PID. All field activities were performed under the direct supervision of a California-registered geologist and overseen by the Project Manager from USACE. All field personnel attended daily health and safety meetings, called "tailgate safety meetings". Tri-County Drilling, Inc., San Diego, provided drilling/sampling equipment and a tow boat.

3.1 Sample Locations

The locations and depths for stockpiled soil, background soil, sediment, and water samples were selected based on the approved Work Plan and the comments dated December 17, 2002 and e-mail dated Feb. 11, 2003 from LARWQCB. Consideration was given to the nature of suspected contaminants, and the nature of potentially- contaminated media. Global positioning system (GPS), which uses satellite telemetry, was used to locate the actual sampling points; sample locations are indicated in Figure 3. The actual latitudes and longitudes of the sample locations are listed in Table 1.

According to the work plan, eight stockpiled soil samples were collected and analyzed for COPCs. Four samples (SS-1 through SS-4) were collected from the graded area on the northwest corner of the Large Lower Lake; the sampling location was as close as possible to the fill material. Three samples (SS-5 through SS-7) were collected from the large debris pile located in the north corner of the Small Lower Lake. For quality control purposes, one field duplicate (QC-1) was collected along with SS-3. Also, one sample was collected from the stockpile at the Small Lower Lake, then sorted and weighted for the trash/physical components based on soil (2,000 g), *Arundo donax(*141 g*)*, and plastics, glass and others (3 g). The weight percentage of the trash/physical components are approximately 92 percent soil, 7 percent *Arundo donax,* and 1 percent plastics, glass and others.

One background soil sample (BG-1) was collected from an area outside of the Large Lower Lake not impacted by dumping.

Samples were collected at all possible lake water targets identified as primary targets during the SA. Eighteen samples were collected at the Large Lower Lake and Small Lower Lake to investigate possible contamination. Seven lake water samples (SW-1 through SW-3 at different

depths) from the north corner of the Small Lower Lake and nine water samples (SW-4 through SW-6 at different depths) from the northwest corner of the Large Lower Lake were collected. These water samples were obtained at random locations. Two field duplicate lake water samples (QC-2 and QC-3) from the Large Lower Lake (QC-3) and the Small Lower Lake (QC-2) were collected for quality control purposes. QC-3 was collected along with SW-6-3, and QC-2 was collected along with SW-1-1.

Five surface sediment samples (SD-1 through SD-4) were collected in March 2003 at the Small Lower Lake and Large Lower Lakes to evaluate the surface water pathway. Two sediment samples (SD-1 and SD-2) were collected at sample points directly tangent to the periphery of the fill material on the northeast corner of the Small Lower Lake, and two sediment samples (SD-3 and SD-4) were collected at sample points directly tangent to the periphery of the fill material on the west corner of the Large Lower Lake (Figures 4 and 5). One field duplicate sediment sample (SD-QC-1) was collected along with SD-4 at the Large Lower Lake for quality control purposes.

Four surface background water samples (BG-SW-1 through BG-SW-3) were collected from upstream of the Lower Lakes to determine background levels, originating from the upper watershed of Big and Little Tujunga Washes at the following locations: 1) Big Tujunga Wash, 2) Haines Canyon Creek, outflow from Tujunga Ponds, and 3) Haines Canyon Creek, inflow to Tujunga Ponds, along with one field duplicate sample (BG-SW-QC1) at Haines Canyon Creek, inflow to Tujunga Ponds.

3.2 Sampling Procedure

The following subsection describes sampling procedures that were followed during the collection of soil, sediment and surface water samples.

3.2.1 Soil Sampling

On December 10 and 11, 2002, seven borings (SS-1 through SS-7) were advanced and sampled by Tri-County Drilling Inc. The soil samples were collected from the stockpiled materials using a hand auger at spatially disparate areas. These locations were chosen to identify possible hazardous substances at the site. The soil sample locations are shown in Figures 4 and 5. The samples were collected at horizontal intervals of 2 feet, 5 feet, and 10 feet from the edge of the stockpile and at depths of 2 feet, 6 feet, and 8 feet below the top of the stockpiled materials. This sampling procedure followed LARWQCB directions of 3 vertical and 3 horizontal samples at the Small Lower Lake with dredged soil and vegetative fill material. Similar sampling procedures were followed for the stockpiled soil placed above demolition debris at the Large Lower Lake.

The lead sample was prioritized for all VOCs and TPH-gasoline analyses and transferred to En Core® samplers, in accordance with EPA Method 5035. Then, the end sample was transferred to a stainless steel liner from each sampling interval and was sealed with Teflon® sheets and plastic caps. En Core® samples and liners containing soil samples were labeled properly and submitted for laboratory analysis.

A background soil sample (BG-1) was advanced and sampled by Tri-County Drilling Company at the site, approximately 100 feet from the source area near the Large Lower Lake to evaluate the background soil concentrations.

3.2.2 Sediment Sampling

On March 25, 2003, two surface sediment samples (0-12 inches) at the Small Lower Lake and three surface sediment samples (0-12 inches) at the Large Lower Lake were collected using Navy diver sampling technique. Grab core samples were collected using pre-cleaned dedicated acetate liners. The lead sample was prioritized for all VOCs, TPH-gasoline, and 1,2,3-TCP analyses and transferred to En Core® samplers, in accordance with EPA method 5035 and a laboratory-supplied pre-cleaned 4-ounce glass jars with a Teflon-lined lid. Then, the end sample was sealed with Teflon® sheets and plastic caps. En Core® samples, liners and glass jars containing sediment samples were labeled properly and submitted for laboratory analyses.

3.2.3 Lake Water Sampling

On December 10, 11, 2002 seven lake water samples (SW-1 through SW-3) and nine lake water samples (SW-4 through SW-6), along with two field duplicate samples (QC-2 and QC-3), were collected and sampled by Tri-County Drilling Inc. Lake water samples were taken to determine whether any release to lake water occurred, and whether the release impacted the fishery in Wildlife Creek, and habitats of endangered species associated with the lakes. To collect samples at distinct depth per sample point, a slow speed peristaltic pump (18 grams/liter/minute) was used at three different locations that were spaced laterally in both the Small Lower Lake and the Large Lower Lake. Surface and subsurface water samples at different desired depths were collected using a peristaltic pump and the sample flows were directed into the laboratory-prepared sample containers.

At Small Lower Lake, the samples were collected at three different sample depths (near surface - ~ 3" below the water surface, midway to the bottom, and near the bottom of the lake). The water depths at the lake range between 3 to 3.5 feet at each sample location.

At the Large Lower Lake, due to the observations made during the sampling of the shallow depth of the water body, the samples were collected at three different sample depths (near surface -3" below the water surface, midway to the bottom, and near the bottom) in one location, and at two different depths (near surface -3" below the water surface, and near the bottom) in two locations. The water depths at the lake range from 10 to 13 feet at each sample location. The LARWQCB was notified the change of the sample depths and concurrence was obtained in the field. The samplers were labeled properly and submitted for laboratory analysis.

3.2.4 Background Surface Water Sampling

On March 26, 2003, three background surface water samples (BG-SW-1 through BG-SW-3) along with one field duplicate sample (BG-SW-QC1) were collected with a pre-cleaned dip

sampler. The background surface water samples were collected upstream of the probable points of entry. The water samples were then transferred into laboratory-supplied sample bottles.

All sample containers were labeled, and immediately placed in a cooler with ice at 4 ± 2 degrees Celsius. SOTA field personnel delivered all samples to the laboratory immediately after sample collection to meet analytical holding times. Upon receipt by the laboratory, samples were stored and analyzed in accordance with the analytical methods and quality assurance/quality control (QA/QC) procedures established in the Work Plan.

3.3 Equipment Decontamination

All drilling and sampling equipment were thoroughly cleaned prior to initiating any site work and between sample locations. Decontamination of equipment other than soil, sediment, or surface water samplers included the following:

- Hand washing of sample rods using a laboratory grade non-phosphate detergent potable water and scrub brushes, followed by a potable water rinse.

All soil, sediment, or surface water sampling equipment which directly contact sample media, were cleaned between samples according to the following procedure:

- Potable water and non-phosphate detergent wash (using brushes)
- Potable water rinse
- Distilled water rinse
- Air dry and storage in clean aluminum foil or plastic until used

4.0 LABORATORY ANALYSIS

Soil, sediment, and water samples that were collected during the proposed assessment activities were submitted to the fixed-based analytical laboratories for analyses. The analytical laboratories selected for this program (Applied P & Ch Laboratory (APCL), Chino, California; Fruit Growers Laboratory, Inc. (FGL) of Santa Paula, California; Maxxam Analytics, Inc. (Maxxam) of Ontario, Canada) are certified or accepted by the California Department of Health Services (DHS) Environmental Laboratory Accreditation Program. APCL has been validated by the U.S. Army Corps of Engineers Hazardous, Toxic and Radioactive Waste Center of Expertise. FGL and Maxxam are referred by CADHS for the low-level 1,2,3-TCP and NDMA analyses. The laboratory certifications are presented in Appendix C. Laboratory analyses were compliant with the requirements described in the LADPW *Guidelines for Report Submittals* (LADPW, 1991) and LARWQCB's updated laboratory testing requirements (LARWQCB, 2000).

4.1 Analytical Methods and Requirements

The analytical methods selected for the soil, sediment, and water samples are based on the DQO process discussed in the work plan's Section 4.0. The selected analytical methods reflect the types of contaminants of potential concern for the sampled medium and current regulatory agency guidelines.

Soil samples were submitted to the laboratory and analyzed for the following parameters:

- VOCs (including fuel oxygenates) by EPA method 5035/8260B
- TPH-gasoline by EPA method 5035/8015M
- TPH-diesel by EPA method 8015M
- Organochlorinate Pesticides by EPA method 8081A
- PCBs by EPA method 8082
- Perchlorate by EPA 314, and
- Metals by EPA method 6010/7471

Additionally, three soil samples were analyzed for TCLP metals by EPA method 6010/7470.

Sediment samples were submitted to the laboratory and analyzed for the following parameters:

- VOCs (including fuel oxygenates) by EPA method 5035/8260B
- TPH-gasoline by EPA method 5035/8015M
- TPH-diesel by EPA method 8015M
- Organochlorinate Pesticides by EPA method 8081A
- PCBs by EPA method 8082

- Perchlorate by EPA 314
- Metals by EPA method 6010/7471
- Chromium (VI) by EPA method 7199
- 1,4-Dioxane by EPA SIM 8270C
- 1,2,3-TCP by EPA 8260B, and
- NDMA by EPA 1625C

Additionally, one sediment sample was analyzed for TCLP metals by EPA method 6010/7470.

Lake water samples and background surface water samples were submitted to the laboratory and analyzed for the following parameters:

- VOCs (including fuel oxygenates) by EPA method 8260B
- TPH-gasoline and diesel by EPA method 8015M
- Organochlorinate Pesticides by EPA method 8081A
- PCBs by EPA method 8082
- Perchlorate by EPA 314
- Dissolved Metals by EPA method 6010/7470, and
- General Chemistry including nitrate, nitrite, sulfate, sulfide, chloride, Total Dissolved Solid, Total Settable Solid, pH, Total and Fecal Coliform by Various EPA or Standard Methods.

Additionally, the background surface water samples were analyzed for the following parameters:

- 1,4-Dioxane by EPA SIM 8270C
- Chromium (VI) by EPA method 218.6
- 1,2,3-TCP by EPA 504.1, and
- NDMA by EPA 1625C

4.2 Field and Laboratory Quality Control Samples

Five field duplicate samples (QC-1, QC-2, QC-3, SD-QC-1, and BG-SW-QC1) and trip blank (TB-1) were collected. The QC samples were handled and transported in the same manner as the primary samples. Field and laboratory quality control samples (including surrogate compound, laboratory control and duplicate) are presented in Section 5.5.

4.3 Data Validation and Verification

The purpose of data verification and validation is to ensure that the collected data meet the data quality objectives (DQOs), and that the data are of sufficient quality to meet the objectives outlined in the work plan (SOTA, 2002).

The overall quality of tasks performed for the SA was assured by conformance to protocols established for sample collection, analytical procedures, and data management following the precision, accuracy, representativeness, completeness and compatibility (PARCC) criteria. The following procedures were used for data quality control during the proposed assessment activities at the subject site.

- Field procedures outlined in Section 3 were used during field data collection and sampling activities.
- Field data (e.g., GPS data), as well as calculations, were subjected to an in-house review by qualified staff. Calculations and notes were reviewed for internal consistency. No discrepancies were found. All geologic work was performed under the direction of a California-registered geologist.
- Electronic laboratory data deliverables were used to generate the result tables and were subjected to 100 percent verification against hard-copy reports.
- The proposed assessment and the data quality evaluation were performed in general accordance with the procedures in the project quality assurance requirements.

All collected data were subject to internal data verification. Consistent, systematic data verification was followed to determine whether the data were collected in accordance to the specification of the project quality assurance requirements (i.e., compliance, correctness, consistency, and completeness). Non-technical errors in the data package that can be corrected (e.g., typographical errors) were also checked, and sample identifiers on laboratory reports (hard copy) were matched with the chain-of-custody record.

5.0 ANALYTICAL RESULTS

This section summarizes the results of the SA activities, including soil, sediment, surface water and background soil and surface water analytical results. The analytical results are presented in Tables 2 through 5 along with the project regulatory criteria. The detected concentrations are also presented in Figures 4 and 5 for the samples that were collected along the Large Lower Lake and Small Lower Lake.

5.1 Soil Sampling Results

Table 2 summarizes the analytical results from the stockpiled soil sampling efforts for the Large Lower Lake and Small Lower Lake along with the EPA Region 9 Industrial and Residential PRG (EPA, 2002).

5.1.1 Large Lower Lake

VOCs in soil samples were analyzed and none of the volatile organic compounds (including MTBE) was detected above the laboratory detection limits, except that trace levels of acetone and methylene chloride were detected in a few samples. However, acetone and methylene chloride are commonly found as laboratory contaminants.

PCBs and perchlorate were analyzed in all samples that were collected, and none of them were detected above the laboratory detection limits.

Pesticides such as alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin were detected in one or few samples (SS-1 through SS-4) at trace levels much below the industrial and residential PRGs (Table 2). None of the pesticides was detected in the background soil (BG-1), or surface water samples (SW-1 through SW-3). However, trace levels of alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin were present in sediment samples (SD-3 and SD-4) with additional pesticides. Detailed discussion about the sediment is included in Section 5.2.

Estimated concentrations of TPH-gasoline, diesel and motor oil were present in all samples, except that gasoline was below the detection limit in SS-1 and diesel was below the detection limit in SS-3. No industrial and residential PRGs exist for gasoline, diesel, and motor oil. Similar levels of concentrations for TPH-gasoline (0.07J mg/kg), diesel (1J mg/kg) and motor oil (30 mg/kg) were also found in the background sample (BG-1).

Thirteen priority pollutant metals were analyzed in all samples. Arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury were present in all four samples (SS-1 through SS-4) at low levels, which were comparable to the background soil levels (BG-1). However, cadmium was not detected in the background sample. None of the detections exceeded the industrial or residential PRGs except arsenic and mercury. These detected metals may be occurred naturally in Hansen Dam soils.

5.1.2 Small Lower Lake

VOCs in soil samples were analyzed and none of the VOCs were found in samples (SS-5 through SS-7), except that trace levels of acetone and methylene chloride were detected in a few samples. Acetone and methylene chloride are common laboratory contaminants.

Perchlorate was analyzed in all samples collected, and none was above the laboratory detection limits.

Alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin were detected in one or few samples (SS-5 through SS-7) at levels much below the industrial and residential PRGs. Background soil sample BG-1, sediment samples (SD-1 and SD-2) and surface water samples (SW-4 through SW-6) contained none of these substances.

PCB-1260 was detected in all three samples (SS-5 through SS-7) at estimated concentrations, which were below the industrial and residential PRG. Background soil sample BG-1 contained none of the PCBs.

Estimated concentrations of TPH-gasoline were present in all three samples (SS-5 through SS-7). Elevated levels of diesel and motor oil were also found in all samples with the maximum concentrations of 1,970 mg/kg for diesel and 250 mg/kg for motor oil. Lower concentrations of TPH-gasoline (0.07J mg/kg), diesel (1 mg/kg) and motor oil (30 mg/kg) were found in the background sample (BG-1). No industrial or residential PRGs exist for gasoline, diesel and motor oil. The samples collected from the Large Lower Lake had lower TPH concentrations compared to samples that were collected from the Small Lower Lake. Additional samples of the materials stockpiled near the Small Lower Lake suggest that the elevated diesel and motor oil concentrations initially detected are not representative of those materials. The results will be included in the Draft Final Report.

Thirteen priority pollutant metals were analyzed in all samples. Antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc and mercury were present in one or all samples (SS-5 through SS-7) at low levels, which were slightly higher than the background soil levels (BG-1). However, antimony, cadmium, selenium, silver were not detected in the background sample, and none of the concentrations exceeded industrial or residential PRGs except trace or estimated levels of arsenic and mercury which are believed to be naturally occurring.

5.2 Sediment Sampling Results

Table 3 summarizes the analytical results from the sediment sampling efforts for the Large Lower Lake and Small Lower Lake along with the EPA Region 9-established Industrial and Residential PRG values (EPA, 2002).

5.2.1 Large Lower Lake

VOCs, perchlorate, NDMA, 1,2,3-TCP, and 1,4-dioxane were analyzed in all collected samples, and none of them were detected above the laboratory detection limits in two sediment samples (SD-3 and SD-4).

Alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin, , endrin aldehyde, heptachlor, and heptachlor expoxide, were detected in all samples (SD-3 and SD-4) at trace levels much below industrial and residential PRGs.

PCB-1260 was detected in both samples at estimated levels much below industrial and residential PRGs.

Estimated concentrations of TPH-diesel were present in both samples. Low levels of motor oil were detected, with maximum concentrations of 68 mg/kg for motor oil. No industrial and residential PRGs exist for diesel and motor oil.

Thirteen priority pollutant metals were analyzed in all samples. Arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc and mercury were present in both samples at levels below the industrial and residential PRGs except arsenic and mercury.

5.2.2 Small Lower Lake

VOCs, pesticides, PCBs, perchlorate, NDMA, 1,2,3-TCP, TPH-gasoline, diesel, motor oil, and 1,4-dioxane were analyzed and none of them were detected above the laboratory detection limits in both sediment samples (SD-1 and SD-2).

Thirteen priority pollutant metals were analyzed in all samples. Trace amounts of arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury were present in both samples at levels below the industrial and residential PRGs except arsenic and mercury.

5.3 Lake Water Sampling Results

Table 4 summarizes the analytical results from the water sampling efforts for the Large Lower Lake and Small Lower Lake along with the Primary Maximum Contaminant Levels (MCLs) from the California Department of Health Services (DHS).

5.3.1 Large Lower Lake

The general water quality was tested in eight surface water samples (SW-1 through SW-3) at different depths. The BOD test indirectly measured the amount of readily-degradable organic compounds in water. The BOD readings were relatively low in all samples. Chloride, TDS, and sulfate were below the surface water quality objectives of 250 mg/L, 500 mg/L and 250 mg/L, respectively. Sample pH of 6.5 to 8.5 was within the acceptable range for surface water. Nitrate and nitrite concentrations were below the primary drinking water standards of 45 mg/L and 1

mg/L. Total and fecal coliform were used to indicate the likelihood of pathogenic bacterial in surface water. The fecal coliform concentrations were below the water quality objective for water designated for contact recreation of 200 MPN/100 ml.

VOCs, pesticides, PCBs, and perchlorate were analyzed in all samples that were collected, and none of them were detected above the laboratory detection limits.

Estimated concentrations of TPH-gasoline and diesel were present in one or more samples. No MCLs values exist for gasoline and diesel.

Thirteen priority pollutant metals were analyzed in all samples. Antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, zinc and mercury were present in one or all samples at low or estimated levels, which are comparable to the background surface water levels. Although antimony, arsenic, lead, silver, and thallium were not detected in background samples, all of the detected concentrations were below the MCLs.

5.3.2 Small Lower Lake

The general water quality was tested in ten samples (SW-4 through SW-6) at different depths. The BOD readings were very low in all samples. Chloride, TDS, and sulfate were below the surface water quality objectives at 250 mg/L, 500 mg/L and 250 mg/L, respectively. pH of 6.5 to 8.5 in collected water samples were within the acceptable range for surface water. Nitrate and nitrite concentrations were below the primary drinking water standards of 45 mg/L and 1 mg/L. The fecal coliform concentrations of 200 MPN/100 ml were below the water quality objective for water designated for contact recreation.

VOCs, pesticides, PCBs, and perchlorate were analyzed in all samples that were collected and none of them were detected above the laboratory detection limits.

Estimated concentrations of TPH-gasoline and diesel were present in one or more samples.

Thirteen priority pollutant metals were analyzed in all samples. Antimony, arsenic, chromium, copper, lead, nickel, selenium, silver, thallium, zinc and mercury were present in all samples at low or estimated levels, which are comparable to the background surface water levels. However, antimony, arsenic, lead, silver, and thallium were not detected in background samples. All of the detected concentrations were below the MCLs.

5.4 Baseline Ambient Water Quality

Table 5 summarizes the analytical results from the background surface water sampling efforts for the three offsite locations along with the Primary Maximum Contaminant Levels (MCLs) from the California Department of Health Services (DHS).

The water quality at the three locations was evaluated as relatively good by RWQCB, based on their annual monitoring program from 1999 to 2001 (Appendix D).

The general water quality was tested in four background surface water samples (BG-SW-1 through BG-SW-3) by SOTA in March 2003. Compared with the on-site samples, the BOD readings were slightly higher. Chloride, TDS, and sulfate were below the surface water quality objectives of 250 mg/L, 500 mg/L and 250 mg/L, respectively, and were comparable to the on-site samples. In all Samples, pH of 6.5 to 8.5 was within the acceptable range for surface water. Nitrate and nitrite concentrations were below the primary drinking water standards of 45 mg/L and 1 mg/L, respectively. The coliform concentration of 200 MPN/100 ml was below the water quality objective for water designated for contact recreation, and the total coliform in two locations were slightly higher than the on-site samples, except sample SW-2-2 that was collected in the Large Lower Lake.

VOCs, 1,2,3-TCP, pesticides, PCBs, NDMA, perchlorate and 1,4-dioxane were analyzed in all collected samples, and none were detected above the laboratory detection limits, except estimated concentrations of methyl isobutyl ketone and methylene chloride which are likely laboratory contaminants.

Estimated concentrations of TPH-gasoline were present in all samples and the concentrations were comparable to the lake water samples results.

Thirteen priority pollutant metals were analyzed in all background surface water samples. Cadmium, chromium, copper, nickel, selenium, zinc and mercury were present in one or all samples at low or estimated levels.

Compared with the background general water quality data, the water quality in surface water at both lakes was relatively good. No VOCs, pesticides, PCBs, and perchlorate were found in all collected surface water samples. Estimated concentrations of TPH-gasoline were present in the surface water in both lakes. However, gasoline was also detected at the same level in the up gradient background surface water samples. Several priority metals were detected at low or estimated levels in the surface water in both lakes. All of them were below the MCLs. Chromium does not have federal or state regulatory criteria. Most of the detected priority metals (cadmium, chromium, copper, nickel, selenium, zinc and mercury) were also found in the up gradient background surface water samples.

5.5 Field and Laboratory QA/QC Sample Results

All field QA/QC sample results were within the project quality control limits. The trip blank was non-detect for VOCs. The temperature in each cooler was within 4 ± 2 degrees Celsius.

All laboratory QA/QC samples were within the project quality control limits. Results of surrogate compounds, laboratory control samples and duplicates, laboratory MSs, MSDs, and method blank analyses were within the project quality control limits.

6.0 DISCUSSIONS AND CONCLUSIONS

The USACE requested SOTA evaluate the nature of any contamination present as a result of the placement of material in and near the Lower Lakes and potential adverse impacts to surface water, groundwater, and human health. Waste and environmental samples were collected and analyzed to characterize the types of substances deposited at the site and potential migration pathways. The stockpiled material was adequately characterized. Analytical results of sampling are presented in Tables 2 through 5 and Figures 4 and 5.

At the stockpiled soil locations, VOCs, PCBs and perchlorate were not found in any samples, except for an estimated concentration of PCB-1260 at the Large Lower Lake. Several pesticides such as alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, and dieldrin were detected in some samples in both lakes. None of the pesticides that were detected exceeded the industrial or residential PRGs. Estimated and elevated concentrations of TPH-gasoline, diesel, and motor oil were reported in one or more samples. No industrial and residential PRGs exist for gasoline, diesel, and motor oil. Several priority pollutant metals were present in all samples at low or estimated levels. However, these values are comparable to the background soil levels (BG-1), indicating that these minerals are naturally occurring at the project site. None of the metal detections exceeded the industrial or residential PRGs, except naturally occurring arsenic and mercury.

Sediment samples collected from both lakes indicated no presence of VOCs, perchlorate, NDMA, 1,2,3-TCP, gasoline or 1,4-dioxane in the lake sediment. In the Large Lower Lake, trace amounts of PCB-1260 and the pesticides alpha-chlordane, gamma-chlordane, P,P'-DDD, P,P'-DDE, P,P'-DDT, dieldrin, endrin aldehyde, heptachlor, and heptachlor expoxide were detected in samples at levels much below industrial and residential PRGs. Low or estimated levels of TPH-diesel and motor oil were detected. Arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc and mercury were present in samples at levels below the industrial and residential PRGs. Low or estimated levels arsenic and mercury were also detected.

By evaluating water samples in various strata in the lakes, the water quality was found to be of relatively good quality. No VOCs, pesticides, PCBs, or perchlorate were found in any water samples. Estimated concentrations of TPH-gasoline were present in the water in both lakes. Gasoline was also detected at the same level in the up gradient background surface water samples. Several metals were detected at low or estimated levels in the water in both lakes. All of the detected metals were found in concentrations below the MCLs. Most of the detected metals (cadmium, chromium, copper, nickel, selenium, zinc and mercury) were also found in the up gradient background surface water samples. Therefore, it is concluded that these minerals are naturally occurring at the project site.

The SA activities and laboratory analysis indicate no evidence of elevated levels of organic or inorganic compounds in the soil, sediment, or water samples that were collected from the Lower Lakes, except for diesel, which was detected in one stockpile sample collected near the Small Lower Lake. It should be noted that no diesel was found in water or sediment samples collected in the Small Lower Lake.

The Site Assessment results suggest that there has been no significant release of hazardous substances from the materials placed in and adjacent to the Lower Lakes into the water at either site. Further, sediment samples collected from the Lower Lakes indicate that lake sediment was not impacted by the materials placed in either lake. Thus, it appears unlikely that groundwater at the site has been adversely impacted by the placement of materials in and near the Lower Lakes. It is therefore our conclusion that the materials placed in and near the Lower Lakes pose no significant risk to human health or to the environment, and may be disposed on-site following approval and proper permitting by the LARWQCB and the City of Los Angeles, Local Enforcement Agency. Following regulatory approval and disposal of the remaining *Arundo*/soil stockpile located to the north of the Small Lower Lake in an approved landfill, SOTA recommends No Further Action at the Hansen Dam FCB.

7.0 REFERENCES

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TABLE 1
SOIL, SEDIMENT, SURFACE WATER SAMPLE LOCATIONS
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

SAMPLE LOCATIONS		SAMPLE ID	LATITUDE	LONGITUDE	SAMPLING DATE
Soil Samples	Large Lower Lake	SS-1	N 34° 16' 6.14"	W 118° 23' 8.57"	December 11, 12, 2002
		SS-2	N 34° 16' 5.64"	W 118° 23' 8.76"	
		SS-3 (QC-1)	N 34° 16' 5.34"	W 118° 23' 9.3"	
		SS-4	N 34° 16' 6.42"	W 118° 23' 9.24"	
	Small Lower Lake	SS-5	N 34° 16' 7.68"	W 118° 22' 27.9"	
		SS-6	N 34° 16' 7.98"	W 118° 22' 27.42"	
		SS-7	N 34° 16' 7.68"	W 118° 22' 26.94"	
		BG-1	N 34° 16' 4.56"	W 118° 23' 9.72"	
Sediment Samples	Small Lower Lake	SD-1	N 34° 16' 6.1"	W 118° 22' 27.5"	March 25, 2003
		SD-2	N 34° 16' 5.9"	W 118° 22' 27.7"	
	Large Lower Lake	SD-3	N 34° 16' 6.3"	W 118° 23' 8.4"	
		SD-4 (SD-QC-1)	N 34° 16' 6.5"	W 118° 23' 8.2"	
Surface Water Samples	Large Lower Lake	SW-1 (QC-2)	N 34° 16' 5.52"	W 118° 23' 7.38"	December 12, 13, 2002
		SW-2	N 34° 16' 6.0"	W 118° 23' 7.8"	
		SW-3	N 34° 16' 7.38"	W 118° 23' 8.88"	
	Small Lower Lake	SW-4	N 34° 16' 7.38"	W 118° 22' 27.30"	
		SW-5	N 34° 16' 7.38"	W 118° 22' 27.54"	
		SW-6 (QC-3)	N 34° 16' 7.14"	W 118° 22' 28.08"	
Background Surface Water Samples	Big Tujunga Wash	BG-SW-1	N 34° 16' 11.7"	W 118° 21' 4.0"	March 26, 2003
	Haines Canyon Creek, outflow from Tujunga Ponds	BG-SW-2	N 34° 16' 7.1"	W 118° 20' 28.3"	
	Haines Canyon Creek, inflow to Tujunga Ponds	BG-SW-3 (BG-SW-QC1)	N 34° 16' 6.9"	W 118° 20' 18.7"	

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	LARGE LOWER LAKE				SMALL LOWER LAKE			BACKGROUND	QC SAMPLE
SAMPLE ID				SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	BG-1	QC-1
DEPTH TO THE SURFACE (FEET)				1	3	3	3	2	4	6	4	3
SAMPLING DATE				12/10/2002	12/10/2002	12/11/2002	12/11/2002	12/10/2002	12/10/2002	12/10/2002	12/11/2002	12/10/2002
INORGANIC PARAMETERS (VARIOUS EPA METHODS)												
MOISTURE	Percent	-	-	12.6	9.3	9	7.8	8	5.5	3.8	6.1	9.3
PERCHLORATE	ug/kg	1.0E+02	7.8E+00	< 23	< 22	< 22	< 22	< 22	< 21	< 21	< 21	< 21
PRIORITY POLLUTANT METALS (EPA 6010B/7471A)												
ANTIMONY	mg/kg	4.1E+02	3.1E+01	< 5.7	< 5.5	< 5.5	< 5.4	< 5.4	0.11 J	< 5.2	< 5.3	< 5.3
ARSENIC	mg/kg	1.6E+00	3.9E-01	2.2	3.0	1.8	2.0	3.4	3.4	2.6	1.2	3.0
BERYLLIUM	mg/kg	1.9E+03	1.5E+02	< 0.23	< 0.22	< 0.22	< 0.22	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21
CADMIUM	mg/kg	4.5E+02	3.1E+01	0.048 J	0.05 J	0.034 J	0.07 J	0.62	0.65	0.61	< 0.21	0.05 J
CHROMIUM	mg/kg	4.5E+02	2.1E+02	12.9	18.2	13.8	9.2	13.8	12	9.5	8.2	18.2
COPPER	mg/kg	4.1E+04	3.1E+03	10.9	14.4	11	9.6	25.4	24.3	13.1	10.1	14.4
LEAD	mg/kg	7.5E+02	1.5E+02	4.4	5.2	3.9	4.4	21.6	29.7	13.5	2.8	5.2
MERCURY	mg/kg	0.0E+00	0.0E+00	0.089 J	0.13 J	0.11 J	0.14 J	0.081 J	0.097 J	0.094 J	0.058 J	0.13 J
NICKEL	mg/kg	2.0E+04	1.6E+03	9.2	13.2	9.2	7.2	16.6	12.3	11	5.9	13.2
SELENIUM	mg/kg	5.1E+03	3.9E+02	< 0.57	< 0.55	< 0.55	< 0.54	< 0.54	0.14 J	0.16 J	< 0.53	< 0.53
SILVER	mg/kg	5.1E+03	3.9E+02	< 0.57	< 0.55	< 0.55	< 0.54	0.15 J	0.16 J	< 0.52	< 0.53	0.022 J
THALLIUM	mg/kg	6.7E+01	5.2E+00	< 0.57	< 0.55	< 0.55	< 0.54	< 0.54	< 0.53	< 0.52	< 0.53	< 0.53
ZINC	mg/kg	1.0E+05	2.3E+04	32.0	39.0	32.3	27.2	92.1	86.3	53.1	28.3	39.0
TCLP METALS (EPA 6010B/7470A)					-	-	-		-	-		-
ARSENIC	ug/L	-	-	5.7 J	-	-	-	9.8 J	-	-	< 10	-
BARIUM	ug/L	-	-	309	-	-	-	678	-	-	230	-
CADMIUM	ug/L	-	-	1.3 J	-	-	-	8.9	-	-	< 4	-
CHROMIUM	ug/L	-	-	3.8 J	-	-	-	1.1 J	-	-	2.6 J	-
LEAD	ug/L	-	-	4.4 J	-	-	-	6.5 J	-	-	6.3 J	-
MERCURY	ug/L	-	-	0.047 J	-	-	-	0.041 J	-	-	0.3 J	-
SELENIUM	ug/L	-	-	< 20	-	-	-	< 20	-	-	< 20	-
SILVER	ug/L	-	-	57.4	-	-	-	1.1 J	-	-	1.7 J	-
TOTAL PETROLEUM HYDROCARBONS (EPA 5035/8015M)												
PHC AS GASOLINE	mg/kg	-	-	< 0.9	0.02 J	0.02 J	0.03 J	0.1 J	0.03 J	0.07 J	0.07 J	< 0.95
PHC AS DIESEL FUEL	mg/kg	-	-	0.9 J	5 J	< 11	0.9 J	1970	120	53	1	< 11
MOTOR OILS	mg/kg	-	-	8 J	31	9 J	9 J	200	200	250	30	31
VOLATILE ORGANIC COMPOUNDS (EPA 5035/8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	7.3E+03	3.2E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1,1-TRICHLOROETHANE	ug/kg	1.2E+06	1.2E+06	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1,2,2-TETRACHLOROETHANE	ug/kg	9.3E+02	4.1E+02	< 46	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1,2-TRICHLOROETHANE	ug/kg	1.6E+03	1.5E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1-DICHLOROETHANE	ug/kg	1.7E+06	5.1E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1-DICHLOROETHENE	ug/kg	4.1E+05	1.2E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,1-DICHLOROPROPENE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2,3-TRICHLOROBENZENE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2,3-TRICHLOROPROPANE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2,4-TRICHLOROBENZENE	ug/kg	3.0E+06	6.5E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2,4-TRIMETHYLBENZENE	ug/kg	1.7E+05	5.2E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	4.6E+01	1.9E+01	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2-DIBROMOETHANE	ug/kg	2.8E+01	6.9E+00	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7

TABLE 2
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(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	LARGE LOWER LAKE				SMALL LOWER LAKE			BACKGROUND	QC SAMPLE
SAMPLE ID				SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	BG-1	QC-1
DEPTH TO THE SURFACE (FEET)				1	3	3	3	2	4	6	4	3
SAMPLING DATE				12/10/2002	12/10/2002	12/11/2002	12/11/2002	12/10/2002	12/10/2002	12/10/2002	12/11/2002	12/10/2002
1,2-DICHLOROBENZENE	ug/kg	3.7E+05	3.7E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2-DICHLOROETHANE	ug/kg	6.0E+02	2.8E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,2-DICHLOROPROPANE	ug/kg	7.4E+02	3.4E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,3,5-TRIMETHYLBENZENE	ug/kg	7.0E+04	2.1E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,3-DICHLOROBENZENE	ug/kg	6.3E+04	1.6E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,3-DICHLOROPROPANE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
1,4-DICHLOROBENZENE	ug/kg	7.9E+03	3.4E+03	< 46	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
2,2-DICHLOROPROPANE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
2-CHLOROTOLUENE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
4-CHLOROTOLUENE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
ACETONE	ug/kg	6.0E+06	1.6E+06	< 46	7 J	11 J	< 46	< 61	17 J	8 J	< 60.0	< 47
BENZENE	ug/kg	1.3E+03	6.0E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
BROMOBENZENE	ug/kg	9.2E+04	2.8E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
BROMOCHLOROMETHANE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
BROMODICHLOROMETHANE	ug/kg	1.8E+03	8.2E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
BROMOFORM	ug/kg	2.2E+05	6.2E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
BROMOMETHANE	ug/kg	1.3E+04	3.9E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CARBON DISULFIDE	ug/kg	7.2E+02	3.6E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CARBON TETRACHLORIDE	ug/kg	5.5E+02	2.5E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CHLOROBENZENE	ug/kg	5.3E+05	1.5E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CHLOROETHANE	ug/kg	6.5E+03	3.0E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CHLOROFORM	ug/kg	2.0E+03	9.4E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CHLOROMETHANE	ug/kg	2.6E+03	1.2E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CIS-1,2-DICHLOROETHYLENE	ug/kg	1.5E+05	4.3E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CIS-1,3-DICHLOROPROPENE	ug/kg	1.8E+03	7.8E+02	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
DIBROMOCHLOROMETHANE	ug/kg	2.6E+03	1.1E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
DIBROMOMETHANE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
DICHLORODIFLUOROMETHANE	ug/kg	3.1E+05	9.4E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
ETHYLBENZENE	ug/kg	2.0E+04	8.9E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
HEXACHLOROBUTADIENE	ug/kg	2.2E+04	6.2E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
ISOPROPYLBENZENE (CUMENE)	ug/kg	5.7E+05	2.0E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
M,P-XYLENE	ug/kg	4.2E+05	2.7E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
METHYL ETHYL KETONE	ug/kg	2.7E+07	7.3E+06	< 44	< 87	< 89	< 92	< 120	< 130	< 110	< 120	< 93
METHYL ISOBUTYL KETONE	ug/kg	2.8E+06	7.9E+05	< 93	< 44	< 45	< 46	< 61	< 65	< 57	4.6 J	< 47
METHYLENE CHLORIDE	ug/kg	2.1E+04	9.1E+03	< 4.6	0.6 J	< 4.5	< 4.6	6 J	6 J	9	< 6.0	< 4.7
NAPHTHALENE	ug/kg	1.9E+05	5.6E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
N-BUTYLBENZENE	ug/kg	2.4E+05	2.4E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
N-PROPYLBENZENE	ug/kg	2.4E+05	2.4E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
O-XYLENE	ug/kg	4.2E+05	2.7E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
P-CYMENE (P-ISOPROPYLTOLUENE)	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
SEC-BUTYLBENZENE	ug/kg	2.2E+05	2.2E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
STYRENE	ug/kg	1.7E+06	1.7E+06	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
T-BUTYLBENZENE	ug/kg	3.9E+05	3.9E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TERT-BUTYL METHYL ETHER	ug/kg	3.6E+04	1.7E+04	< 9.3	< 8.7	< 8.9	< 9.2	< 12	< 13	< 11	< 12	< 9.3

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	LARGE LOWER LAKE				SMALL LOWER LAKE			BACKGROUND	QC SAMPLE
SAMPLE ID				SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	BG-1	QC-1
DEPTH TO THE SURFACE (FEET)				1	3	3	3	2	4	6	4	3
SAMPLING DATE				12/10/2002	12/10/2002	12/11/2002	12/11/2002	12/10/2002	12/10/2002	12/10/2002	12/11/2002	12/10/2002
TETRACHLOROETHYLENE(PCE)	ug/kg	1.5E+04	3.4E+03	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TOLUENE	ug/kg	5.2E+05	5.2E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TRANS-1,2-DICHLOROETHENE	ug/kg	2.3E+05	6.9E+04	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TRANS-1,3-DICHLOROPROPENE	ug/kg	-	-	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TRICHLOROETHYLENE (TCE)	ug/kg	1.1E+02	5.3E+01	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
TRICHLOROFLUOROMETHANE	ug/kg	2.0E+06	3.9E+05	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
VINYL CHLORIDE	ug/kg	7.5E+02	7.9E+01	< 4.6	< 4.4	< 4.5	< 4.6	< 6.1	< 6.5	< 5.7	< 6.0	< 4.7
CHLORINATED PESTICIDES (EPA 8081A)												
ALDRIN	ug/kg	1.0E+02	2.9E+01	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
BETA BHC	ug/kg	1.3E+03	3.2E+02	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
ALPHA BHC	ug/kg	3.6E+02	9.0E+01	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
DELTA BHC	ug/kg	-	-	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
GAMMA BHC (LINDANE)	ug/kg	1.7E+03	4.4E+02	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
ALPHA-CHLORDANE	ug/kg	6.5E+03	1.6E+03	1	0.6 J	0.3 J	0.4 J	0.8 J	1 J	1	< 1.1	< 1.1
GAMMA-CHLORDANE	ug/kg	6.5E+03	1.6E+03	0.9 J	0.4 J	0.2 J	0.3 J	0.8 J	2	1	< 1.1	< 1.1
P,P'-DDD	ug/kg	1.0E+03	2.4E+03	0.6 J	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	3	< 3.2	< 3.2
P,P'-DDE	ug/kg	7.0E+03	1.7E+03	3 J	< 3.3	< 3.3	< 3.3	< 3.3	1 J	2 J	< 3.2	< 3.2
P,P'-DDT	ug/kg	7.0E+03	1.7E+03	< 3.4	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	3 J	< 3.2	< 3.2
DIELDRIN	ug/kg	1.1E+02	3.0E+01	0.4 J	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	0.8 J	< 3.2	< 3.2
ALPHA ENDOSULFAN	ug/kg	3.7E+06	3.7E+05	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
BETA ENDOSULFAN	ug/kg	3.7E+06	3.7E+05	< 3.4	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	< 3.1	< 3.2	< 3.2
ENDOSULFAN SULFATE	ug/kg	-	-	< 5.7	< 5.5	< 5.5	< 5.4	< 5.4	< 5.3	< 5.2	< 5.3	< 5.3
ENDRIN	ug/kg	1.8E+05	1.8E+04	< 3.4	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	< 3.1	< 3.2	< 3.2
ENDRIN ALDEHYDE	ug/kg	-	-	< 3.4	< 3.3	< 3.3	< 3.3	< 3.3	< 3.2	< 3.1	< 3.2	< 3.2
ENDRIN KETONE	ug/kg	-	-	< 2.3	< 2.2	< 2.2	< 2.2	< 2.2	< 2.1	< 2.1	< 2.1	< 2.1
HEPTACHLOR	ug/kg	3.8E+02	1.1E+02	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
HEPTACHLOR EPOXIDE	ug/kg	1.9E+02	5.3E+01	< 1.9	< 1.9	< 1.9	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
METHOXYCHLOR	ug/kg	3.1E+06	3.1E+05	< 11	< 11	< 11	< 11	< 11	< 11	< 10	< 11	< 11
TOXAPHENE	ug/kg	1.6E+03	4.4E+02	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110
PCBS (EPA 8082)												
PCB-1016 (AROCLOR 1016)	ug/kg	2.1E+04	3.9E+03	< 38	< 36	< 36	< 36	< 36	< 35	< 34	< 35	< 35
PCB-1221 (AROCLOR 1221)	ug/kg	7.4E+02	2.2E+02	< 76	< 73	< 73	< 72	< 72	< 70	< 69	< 70	< 70
PCB-1232 (AROCLOR 1232)	ug/kg	7.4E+02	2.2E+02	< 38	< 36	< 36	< 36	< 36	< 35	< 34	< 35	< 35
PCB-1242 (AROCLOR 1242)	ug/kg	7.4E+02	2.2E+02	< 38	< 36	< 36	< 36	< 36	< 35	< 34	< 35	< 35
PCB-1248 (AROCLOR 1248)	ug/kg	7.4E+02	2.2E+02	< 38	< 36	< 36	< 36	< 36	< 35	< 34	< 35	< 35
PCB-1254 (AROCLOR 1254)	ug/kg	7.4E+02	2.2E+02	< 38	< 36	< 36	< 36	< 36	< 35	< 34	< 35	< 35
PCB-1260 (AROCLOR 1260)	ug/kg	7.4E+02	2.2E+02	< 38	< 36	< 36	< 36	10 J	9 J	9 J	< 35	< 35

Notes:
PRG = Preliminary Remediation Goal from U.S. Environmental Protection Agency Region IX (EPA, 2002).
MCL = Max Contaminant Level (drinking water), California Department of Health Services (DHS, 2000)
mg/kg = milligrams per kilogram
µg/kg= micrograms per kilogram
µg/L = micrograms per liter
- = Not Analyzed or Not Available

TABLE 3
LABORATORY ANALYTICAL RESULTS FOR SEDIMENT SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	SMALL LOWER LAKE		LARGE LOWER LAKE		
SAMPLE ID				SD-1	SD-2	SD-3	SD-4	SD-QC-1
DEPTH TO THE SURFACE (INCH)				1-12	1-12	1-12	1-12	1-12
SAMPLING DATE				03/25/2003	03/25/2003	03/25/2003	03/25/2003	03/25/2003
INORGANIC PARAMETERS (VARIOUS EPA METHODS)								
MOISTURE	Percent	-	-	18.7	6.0	24.8	28.7	21.0
PERCHLORATE	ug/kg	1.0E+02	7.8E+00	< 25	< 21	< 27	< 28	-
PRIORITY POLLUTANT METALS (EPA 6010B/7471A/7199)								
ANTIMONY	mg/kg	4.1E+02	3.1E+01	< 6.2	< 5.3	< 6.6	< 7.0	-
ARSENIC	mg/kg	1.6E+00	3.9E-01	0.66	0.49	4.4	1.8	-
BERYLLIUM	mg/kg	1.9E+03	1.5E+02	< 0.25	< 0.21	< 0.27	< 0.28	-
CADMIUM	mg/kg	4.5E+02	3.1E+01	< 0.25	< 0.21	1.3	0.69	-
CHROMIUM	mg/kg	4.5E+02	2.1E+02	10.1	10.0	23.2	13.7	-
CHROMIUM(VI)	mg/kg	6.4E+01	3.0E+01	< 0.006	< 0.005	< 0.007	< 0.007	< 0.0063
COPPER	mg/kg	4.1E+04	3.1E+03	6.7	8.3	24.1	13.1	-
LEAD	mg/kg	7.5E+02	1.5E+02	2.5	2.2	62.9	21.3	-
MERCURY	mg/kg	0.0E+00	0.0E+00	0.041 J	0.025 J	0.063 J	0.029 J	-
NICKEL	mg/kg	2.0E+04	1.6E+03	4.4	6.2	20.9	12.3	-
SELENIUM	mg/kg	5.1E+03	3.9E+02	< 0.62	< 0.53	0.88	0.31 J	-
SILVER	mg/kg	5.1E+03	3.9E+02	0.046 J	< 0.53	0.15 J	0.20 J	-
THALLIUM	mg/kg	6.7E+01	5.2E+00	< 0.62	< 0.53	< 0.66	< 0.70	-
ZINC	mg/kg	1.0E+05	2.3E+04	17.2	17.4	82.6	47.9	
TCLP METALS (EPA 6010B/7470A)								
ARSENIC	ug/L	-	-	< 10	-	-	-	-
BARIUM	ug/L	-	-	239	-	-	-	-
CADMIUM	ug/L	-	-	0.81 J	-	-	-	-
CHROMIUM	ug/L	-	-	3.6 J	-	-	-	-
LEAD	ug/L	-	-	< 10	-	-	-	-
MERCURY	ug/L	-	-	< 0.5	-	-	-	-
SELENIUM	ug/L	-	-	< 20	-	-	-	-
SILVER	ug/L	-	-	2.6 J	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS (EPA 5035/8015M)								
PHC AS GASOLINE	mg/kg	-	-	< 1.2	< 1.3	< 1.5	< 1.4	-
PHC AS DIESEL FUEL	mg/kg	-	-	< 12	< 11	10 J	6 J	-
MOTOR OILS	mg/kg	-	-	< 12	< 11	68	35	-
1,2,3-TCP (EPA 8260B)	ug/kg	-	-	< 5	< 5	< 25	< 5	< 5
VOLATILE ORGANIC COMPOUNDS (EPA 5035/8260B)								
1,1,1,2-TETRACHLOROETHA	ug/kg	7.3E+03	3.2E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1,1-TRICHLOROETHANE	ug/kg	1.2E+06	1.2E+06	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1,2,2-TETRACHLOROETHA	ug/kg	9.3E+02	4.1E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1,2-TRICHLOROETHANE	ug/kg	1.6E+03	1.5E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1-DICHLOROETHANE	ug/kg	1.7E+06	5.1E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1-DICHLOROETHENE	ug/kg	4.1E+05	1.2E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
1,1-DICHLOROPROPENE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2,3-TRICHLOROBENZENE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2,3-TRICHLOROPROPANE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2,4-TRICHLOROBENZENE	ug/kg	3.0E+06	6.5E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2,4-TRIMETHYLBENZENE	ug/kg	1.7E+05	5.2E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2-DIBROMO-3-CHLOROPR(	ug/kg	4.6E+01	1.9E+01	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2-DIBROMOETHANE	ug/kg	2.8E+01	6.9E+00	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2-DICHLOROBENZENE	ug/kg	3.7E+05	3.7E+05	< 5.9	< 5.7	< 6.0	< 7.2	-

TABLE 3
LABORATORY ANALYTICAL RESULTS FOR SEDIMENT SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	SMALL LOWER LAKE		LARGE LOWER LAKE		
SAMPLE ID				SD-1	SD-2	SD-3	SD-4	SD-QC-1
DEPTH TO THE SURFACE (INCH)				1-12	1-12	1-12	1-12	1-12
SAMPLING DATE				03/25/2003	03/25/2003	03/25/2003	03/25/2003	03/25/2003
1,2-DICHLOROETHANE	ug/kg	6.0E+02	2.8E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
1,2-DICHLOROPROPANE	ug/kg	7.4E+02	3.4E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
1,3,5-TRIMETHYLBENZENE	ug/kg	7.0E+04	2.1E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
1,3-DICHLOROBENZENE	ug/kg	6.3E+04	1.6E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
1,3-DICHLOROPROPANE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
1,4-DICHLOROBENZENE	ug/kg	7.9E+03	3.4E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
2,2-DICHLOROPROPANE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
2-BUTANONE	ug/kg	-	-	< 24	< 23	< 24	< 29	-
2-CHLOROTOLUENE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
2-HEXANONE	ug/kg	-	-	< 24	< 23	< 24	< 29	-
4-CHLOROTOLUENE	ug/kg	1.5E+03	6.5E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
4-METHYL-2-PENTANONE	ug/kg	9.2E+04	2.8E+04	< 24	< 23	< 24	< 29	-
BENZENE	ug/kg	1.3E+03	6.0E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
BROMOBENZENE	ug/kg	9.2E+04	2.8E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
BROMOCHLOROMETHANE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
BROMODICHLOROMETHANE	ug/kg	1.8E+03	8.2E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
BROMOFORM	ug/kg	2.2E+05	6.2E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
BROMOMETHANE	ug/kg	1.3E+04	3.9E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
CARBON TETRACHLORIDE	ug/kg	5.5E+02	2.5E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
CHLOROBENZENE	ug/kg	5.3E+05	1.5E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
CHLORODIBROMOMETHANE	ug/kg	2.6E+03	1.1E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
CHLOROETHANE	ug/kg	6.5E+03	3.0E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
CHLOROFORM	ug/kg	2.0E+03	9.4E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
CHLOROMETHANE	ug/kg	2.6E+03	1.2E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
CIS-1,2-DICHLOROETHENE	ug/kg	1.5E+05	4.3E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
CIS-1,3-DICHLOROPROPENE	ug/kg	1.8E+03	7.8E+02	< 5.9	< 5.7	< 6.0	< 7.2	-
DIBROMOMETHANE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
DICHLORODIFLUOROMETHA	ug/kg	3.1E+05	9.4E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
DIISOPROPYL ETHER(DIPE)	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
ETHYL TERT BUTYL ETHER (	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
ETHYLBENZENE	ug/kg	2.0E+04	8.9E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
HEXACHLOROBUTADIENE	ug/kg	2.2E+04	6.2E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
ISOPROPYLBENZENE (CUME	ug/kg	5.7E+05	2.0E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
METHYLENE CHLORIDE	ug/kg	2.1E+04	9.1E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
METHYL-TERT-BUTYL-ETHEI	ug/kg	3.6E+04	1.7E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
NAPHTHALENE	ug/kg	1.9E+05	5.6E+04	< 5.9	< 5.7	< 6.0	< 7.2	-
N-BUTYLBENZENE	ug/kg	2.4E+05	2.4E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
N-PROPYLBENZENE	ug/kg	2.4E+05	2.4E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
P-ISOPROPYLTOLUENE	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
SEC-BUTYLBENZENE	ug/kg	2.2E+05	2.2E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
STYRENE	ug/kg	1.7E+06	1.7E+06	< 5.9	< 5.7	< 6.0	< 7.2	-
TERT AMYL METHYL ETHER	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
TERT BUTYL ALCOHOL (TBA	ug/kg	-	-	< 24	< 23	< 24	< 29	-
TERT-BUTYLBENZENE	ug/kg	3.9E+05	3.9E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
TETRACHLOROETHENE	ug/kg	1.5E+04	3.4E+03	< 5.9	< 5.7	< 6.0	< 7.2	-
TOLUENE	ug/kg	5.2E+05	5.2E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
TRANS-1,2-DICHLOROETHEI	ug/kg	2.3E+05	6.9E+04	< 5.9	< 5.7	< 6.0	< 7.2	-

TABLE 3
LABORATORY ANALYTICAL RESULTS FOR SEDIMENT SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	Industrial PRG	Residential PRG	SMALL LOWER LAKE		LARGE LOWER LAKE		
SAMPLE ID				**SD-1**	**SD-2**	**SD-3**	**SD-4**	**SD-QC-1**
DEPTH TO THE SURFACE (INCH)				1-12	1-12	1-12	1-12	1-12
SAMPLING DATE				03/25/2003	03/25/2003	03/25/2003	03/25/2003	03/25/2003
TRANS-1,3-DICHLOROPROP	ug/kg	-	-	< 5.9	< 5.7	< 6.0	< 7.2	-
TRICHLOROETHENE	ug/kg	1.1E+02	5.3E+01	< 5.9	< 5.7	< 6.0	< 7.2	-
TRICHLOROFLUOROMETHAI	ug/kg	2.0E+06	3.9E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
VINYL CHLORIDE	ug/kg	7.5E+02	7.9E+01	< 5.9	< 5.7	< 6.0	< 7.2	-
XYLENES (TOTAL)	ug/kg	4.2E+05	2.7E+05	< 5.9	< 5.7	< 6.0	< 7.2	-
1,4-DIOXANE (EPA 8270 SIM	ug/kg	1.6E+05	4.4E+04	< 41	< 35	< 44	< 46	< 42
NDMA (EPA 1625C)	ug/kg	3.4E+01	9.5E+00	< 5	< 5	< 5	< 5	< 5
CHLORINATED PESTICIDES (EPA 8081A)								
ALDRIN	ug/kg	1.5E+02	2.9E+01	< 1.2	< 1.1	< 1.3	< 1.4	-
ALPHA BHC	ug/kg	5.9E+02	9.0E+01	< 1.2	< 1.1	< 1.3	< 1.4	-
ALPHA ENDOSULFAN	ug/kg	5.3E+06	3.7E+05	< 1.2	< 1.1	< 1.3	< 1.4	-
ALPHA-CHLORDANE	ug/kg	1.1E+04	1.6E+03	< 1.2	< 1.1	15	9.1	-
BETA BHC	ug/kg	2.1E+03	3.2E+02	< 1.2	< 1.1	< 1.3	< 1.4	-
BETA ENDOSULFAN	ug/kg	-	-	< 2.5	< 2.1	< 2.7	< 2.8	-
DELTA BHC	ug/kg	-	-	< 1.2	< 1.1	< 1.3	< 1.4	-
DIELDRIN	ug/kg	1.5E+02	3.0E+01	< 2.5	< 2.1	2 J	< 2.8	-
ENDOSULFAN SULFATE	ug/kg	-	-	< 2.5	< 2.1	< 2.7	< 2.8	-
ENDRIN	ug/kg	2.6E+05	1.8E+04	< 2.5	< 2.1	< 2.7	< 2.8	-
ENDRIN ALDEHYDE	ug/kg	-	-	< 2.5	< 2.1	2 J	< 2.8	-
ENDRIN KETONE	ug/kg	-	-	< 2.5	< 2.1	< 2.7	< 2.8	-
GAMMA BHC (LINDANE)	ug/kg	2.9E+03	4.4E+02	< 1.2	< 1.1	< 1.3	< 1.4	-
GAMMA-CHLORDANE	ug/kg	-	-	< 1.2	< 1.1	14	7.5	-
HEPTACHLOR	ug/kg	5.5E+02	1.1E+02	< 1.2	< 1.1	2	0.7 J	-
HEPTACHLOR EPOXIDE	ug/kg	2.7E+02	5.3E+01	< 1.2	< 1.1	1	0.4 J	-
METHOXYCHLOR	ug/kg	4.4E+06	3.1E+05	< 62	< 53	< 66	< 70	-
P,P'-DDD	ug/kg	1.7E+04	2.4E+03	< 2.5	< 2.1	15	5	-
P,P'-DDE	ug/kg	1.2E+04	1.7E+03	< 2.5	< 2.1	11	4	-
P,P'-DDT	ug/kg	1.2E+04	1.7E+03	< 2.5	< 2.1	6.4	3 J	-
TOXAPHENE	ug/kg	2.2E+03	4.4E+02	< 62	< 53	< 66	< 70	-
PCBS (EPA 8082)								
PCB-1016 (AROCLOR 1016)	ug/kg	2.9E+04	3.9E+03	< 41	< 35	< 44	< 46	-
PCB-1221 (AROCLOR 1221)	ug/kg	1.0E+03	2.2E+02	< 82	< 71	< 89	< 94	-
PCB-1232 (AROCLOR 1232)	ug/kg	1.0E+03	2.2E+02	< 41	< 35	< 44	< 46	-
PCB-1242 (AROCLOR 1242)	ug/kg	1.0E+03	2.2E+02	< 41	< 35	< 44	< 46	-
PCB-1248 (AROCLOR 1248)	ug/kg	1.0E+03	2.2E+02	< 41	< 35	< 44	< 46	-
PCB-1254 (AROCLOR 1254)	ug/kg	1.0E+03	2.2E+02	< 41	< 35	< 44	< 46	-
PCB-1260 (AROCLOR 1260)	ug/kg	1.0E+03	2.2E+02	< 41	< 35	24 J	23 J	-

Notes:
PRG = Preliminary Remediation Goal from U.S. Environmental Protection Agency Region IX (EPA, 2002).
MCL = Max Contaminant Level (drinking water), California Department of Health Services (DHS, 2000)
mg/kg = milligrams per kilogram
µg/kg= micrograms per kilogram
µg/L = micrograms per liter
- = Not Analyzed or Not Available

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	LARGE LOWER LAKE								SMALL LOWER LAKE									
SAMPLE ID			SW-1-1	SW-1-2	SW-1-3	SW-2-1	SW-2-2	SW-3-1	SW-3-2	QC-2	SW-4-1	SW-4-2	SW-4-3	SW-5-1	SW-5-2	SW-5-3	SW-6-1	SW-6-2	SW-6-3	QC-3
DEPTH TO THE SURFACE (INCH)			24	42	3	36	3	36	3	24	138	72	3	156	78	3	120	66	3	3
SAMPLING DATE			12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002
INORGANIC PARAMETERS (VARIOUS EPA METHODS)																				
BIOLOGICAL OXYGEN DEMAND (BOD)	mg-O2/L	-	0.84 J	1.2 J	1.1 J	1.2 J	0.9 J	0.89 J	1 J	-	0.93 J	< 2	< 2	< 2	< 2	< 2	0.78 J	< 2	0.68 J	-
CHLORIDE	mg/L	2.5E+02	33.5	29.0	32.0	29.5	31.0	33.0	31.5	-	24.0	22.0	24.0	23.0	22.0	23.0	25.5	23.0	22.0	-
NITRATE AS N	mg/L	4.5E+01	1.2	1.2	1	1.1	1.1	1.1	1.1	-	1.1	1.2	1.3	1.1	1.2	1.3	1.1	1.2	1.3	-
NITRITE AS N	mg/L	1.0E+00	0.02 J	0.02 J	0.02 J	0.017 J	0.02 J	0.02 J	0.02 J	-	0.022	0.02 J	0.02	0.02	0.02	0.02	0.02	0.02 J	0.017 J	-
pH	pH UNIT	-	7.86	7.8	7.84	7.68	7.78	7.86	7.85	-	7.56	7.59	7.55	7.58	7.6	7.61	7.62	7.62	7.63	-
SETTABLE SOLIDS (SS)	M/L-HR	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
TOTAL DISSOLVED SOLIDS (TDS)	mg/L	5.0E+02	317	309	311	322	323	333	312	-	396	365	372	359	369	358	389	406	396	-
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	-	12	10	9	10	9	11	6	-	4	6	5	5	3 J	3 J	4	3 J	3 J	-
SULFATE	mg/L	2.5E+02	70.5	62.2	63.3	49.8	53.4	65.4	65.7	-	70.9	76.6	104	118	84.2	89.7	101	94.3	87.4	-
DISSOLVED SULFIDE	mg/L	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
TOTAL COLIFORM	PMPN/100 mL	2.0E+02	90	50	140	80	300	50	50	-	27	130	13	27	13	80	110	11	110	-
FECAL COLIFORM	MPN/100mL	-	90	50	140	23	50	50	50	-	13	23	13	2	13	9	< 2	7	< 2	-
PERCHLORATE	ug/L	4.0E+00	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
PRIORITY POLLUTANT METALS (EPA 6010B/7470A)																				
ANTIMONY	ug/L	6.00E+00	< 10	< 10	< 10	< 10	3.5 J	< 10	< 10	< 10	< 10	3.3 J	3 J	3.9 J	3.2 J	5.5 J	4 J	4.2 J	3.8 J	3.2 J
ARSENIC	ug/L	5.00E+01	< 5	< 5	2.3 J	< 5	2.3 J	< 5	3.2 J	2.9 J	< 5	< 5	4 J	< 5	2.7 J	< 5	1.8 J	< 5	< 5	< 5
BERYLLIUM	ug/L	1.00E+03	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
CADMIUM	ug/L	5.00E+00	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
CHROMIUM	ug/L	5.00E+01	4.2 J	2.9 J	0.68 J	3.3 J	< 5	4.8 J	1 J	2.8 J	0.94 J	2.1 J	1.3 J	0.53 J	0.86 J	< 5	0.77 J	< 5	0.49 J	0.83 J
COPPER	ug/L	1.00E+03	2.6 J	2.1 J	1.2 J	1.9 J	1 J	1.2 J	1.6 J	2.8 J	2.6 J	2.8 J	1.9 J	3.3 J	1.3 J	1 J	1.7 J	1.3 J	1.6 J	3.7 J
LEAD	ug/L	1.50E+01	0.75 J	< 5	< 5	0.96 J	< 5	0.79 J	< 5	< 5	1.2 J	23.7	1.7 J	2.1 J	2 J	1.4 J	1.5 J	2.2 J	0.86 J	1.1 J
NICKEL	ug/L	2.00E+00	8.3	1.8 J	0.86 J	3.4 J	< 5	4.1 J	2.2 J	2.6 J	2 J	2.7 J	1.3 J	1.4 J	4.2 J	6.9	3 J	2.1 J	3.4 J	4.4 J
SELENIUM	ug/L	1.00E+02	< 10	4.4 J	< 10	< 10	3.1 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	4.4 J	3.8 J	< 10	3.2 J	< 10
SILVER	ug/L	5.00E+01	< 10	< 10	< 10	< 10	< 10	0.51 J	< 10	0.53 J	0.51 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
THALLIUM	ug/L	1.00E+02	3.6 J	2.4 J	3.5 J	3.1 J	3 J	2.3 J	4.3 J	3.3 J	4.1 J	5.2 J	2.1 J	3.4 J	2 J	4.3 J	1.6 J	2.3 J	2.7 J	4.6 J
ZINC	ug/L	2.00E+00	73.7	53.2	12.4	41.7	25.5	51.5	24.3	67.7	16.7	416	35.3	37.3	22.9	7.6 J	10 J	41.7	8.4 J	17.6
MERCURY	ug/L	5.00E+03	< 0.5	< 0.5	0.17 J	0.14 J	0.13 J	< 0.5	0.19 J	< 0.5	0.039 J	0.05 J	0.03 J	0.03 J	0.03 J	0.04 J	0.03 J	0.04 J	0.072 J	0.03 J
TOTAL PETROLEUM HYDROCARBONS (EPA 8015M)																				
PHC AS GASOLINE	mg/L	-	0.02 J	0.02 J	0.02 J	0.03 J	0.02 J	0.02 J	0.02 J	0.03 J	0.02 J	0.02 J	0.03 J	0.02 J	0.02 J	0.02 J	0.02 J	0.02 J	0.03 J	0.02 J
PHC AS DIESEL FUEL	mg/L	-	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	0.02 J	0.02 J	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48
MOTOR OILS	mg/L	-	< 0.48	0.04 J	0.03 J	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	0.02 J	< 0.48	< 0.48	< 0.48	0.05 J	< 0.48	0.02 J	< 0.48	< 0.48	< 0.48
VOLATILE ORGANIC COMPOUNDS (EPA 8260B)																				
1,1,1,2-TETRACHLOROETHANI	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,1-TRICHLOROETHANE	ug/L	2.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-TETRACHLOROETHANE	ug/L	1.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-TRICHLOROETHANE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROETHANE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROETHENE	ug/L	6.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROPROPENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,3-TRICHLOROBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,3-TRICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,4-TRICHLOROBENZENE	ug/L	7.0E+01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,4-TRIMETHYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-DIBROMOETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROBENZENE	ug/L	6.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROETHANE	ug/L	5.0E-01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROPROPANE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,3,5-TRIMETHYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,3-DICHLOROBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,3-DICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,4-DICHLOROBENZENE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	LARGE LOWER LAKE								SMALL LOWER LAKE									
SAMPLE ID			SW-1-1	SW-1-2	SW-1-3	SW-2-1	SW-2-2	SW-3-1	SW-3-2	QC-2	SW-4-1	SW-4-2	SW-4-3	SW-5-1	SW-5-2	SW-5-3	SW-6-1	SW-6-2	SW-6-3	QC-3
DEPTH TO THE SURFACE (INCH)			24	42	3	36	3	36	3	24	138	72	3	156	78	3	120	66	3	3
SAMPLING DATE			12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002
2,2-DICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2-CHLOROTOLUENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
4-CHLOROTOLUENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
ACETONE	ug/L	-	< 50	< 50	< 50	< 50	< 50	9 J	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
BENZENE	ug/L	1.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
BROMOBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
BROMOCHLOROMETHANE	ug/L	1.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
BROMODICHLOROMETHANE	ug/L	1.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
BROMOFORM	ug/L	1.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
BROMOMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CARBON DISULFIDE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CARBON TETRACHLORIDE	ug/L	5.0E-01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CHLOROBENZENE	ug/L	7.0E+01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CHLOROETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CHLOROFORM	ug/L	1.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CHLOROMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CIS-1,2-DICHLOROETHENE	ug/L	6.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CIS-1,3-DICHLOROPROPENE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
DIBROMOCHLOROMETHANE	ug/L	1.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
DIBROMOMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
DICHLORODIFLUOROMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
ETHYLBENZENE	ug/L	7.0E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
HEXACHLOROBUTADIENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
ISOPROPYLBENZENE (CUMENE)	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
M,P-XYLENE	ug/L	1.8E+03	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
METHYL ETHYL KETONE	ug/L	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
METHYL ISOBUTYL KETONE	ug/L	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
METHYLENE CHLORIDE	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
NAPHTHALENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
N-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	5	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
N-PROPYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
O-XYLENE	ug/L	1.8E+03	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
P-CYMENE (P-ISOPROPYLTOLUENE)	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
SEC-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
STYRENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
T-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TERT-BUTYL METHYL ETHER	ug/L	1.3E+01	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TETRACHLOROETHENE(PCE)	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TOLUENE	ug/L	1.5E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TRANS-1,2-DICHLOROETHENE	ug/L	1.0E+01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TRANS-1,3-DICHLOROPROPENE	ug/L	5.0E-01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TRICHLOROETHENE (TCE)	ug/L	5.0E+00	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
TRICHLOROFLUOROMETHANE	ug/L	1.5E+02	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
VINYL CHLORIDE	ug/L	5.0E-01	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
CHLORINATED PESTICIDES (EPA 8081A)																				
ALDRIN	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
ALPHA BHC	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
ALPHA ENDOSULFAN	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
ALPHA-CHLORDANE	ug/L	1.0E-01	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
BETA BHC	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
BETA ENDOSULFAN	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
DELTA BHC	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
DIELDRIN	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	LARGE LOWER LAKE								SMALL LOWER LAKE									
SAMPLE ID			SW-1-1	SW-1-2	SW-1-3	SW-2-1	SW-2-2	SW-3-1	SW-3-2	QC-2	SW-4-1	SW-4-2	SW-4-3	SW-5-1	SW-5-2	SW-5-3	SW-6-1	SW-6-2	SW-6-3	QC-3
DEPTH TO THE SURFACE (INCH)			24	42	3	36	3	36	3	24	138	72	3	156	78	3	120	66	3	3
SAMPLING DATE			12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/11/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002	12/12/2002
ENDOSULFAN SULFATE	ug/L	-	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48
ENDRIN	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
ENDRIN ALDEHYDE	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
ENDRIN KETONE	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
GAMMA BHC (LINDANE)	ug/L	2.0E-01	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
GAMMA-CHLORDANE	ug/L	-	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
HEPTACHLOR	ug/L	1.0E-02	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
HEPTACHLOR EPOXIDE	ug/L	1.0E-02	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.048	< 0.05
METHOXYCHLOR	ug/L	4.0E+01	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9
P,P'-DDD	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
P,P'-DDE	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
P,P'-DDT	ug/L	-	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.096	< 0.1
TOXAPHENE	ug/L	3.0E+00	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
PCBS (EPA 8082)																				
PCB-1016 (AROCLOR 1016)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96
PCB-1221 (AROCLOR 1221)	ug/L	5.0E-01	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9
PCB-1232 (AROCLOR 1232)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96
PCB-1242 (AROCLOR 1242)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96
PCB-1248 (AROCLOR 1248)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96
PCB-1254 (AROCLOR 1254)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96
PCB-1260 (AROCLOR 1260)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96

Notes:
PRG = Preliminary Remediation Goal from U.S. Environmental Protection Agency Region IX (EPA, 2002).
MCL = Max Contaminant Level (drinking water), California Department of Health Services (DHS, 2000)
AL = Action Level (drinking water), California Department of Health Services (DHS, 2000)
mg/L = milligrams per liter
µg/L = micrograms per liter
- = Not Analyzed or Not Available

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR BACKGROUND SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	BACKGROUND SURFACE WATER				
SAMPLE ID			BG-SW-1	BG-SW-2	BG-SW-3	BG-SW-QC1	TB-1
DEPTH TO THE SURFACE (INCH)			0-6	0-6	0-6	0-6	
SAMPLING DATE			03/26/2003	03/26/2003	03/26/2003	03/26/2003	03/26/2003
INORGANIC PARAMETERS (VARIOUS EPA METHODS)							
BIOLOGICAL OXYGEN DEMAND (BOI	mg-O2/L	-	6	1.7	< 2	< 2	-
CHLORIDE	mg/L	2.5E+02	14.0	25.5	26.5	27.5	-
NITRATE AS N	mg/L	4.5E+01	0.35	3.3	4.4	4.2	-
NITRITE AS N	mg/L	1.0E+00	< 0.02	< 0.02	0.03	0.034	-
pH	pH UNIT	-	8.49	8.08	7.37	7.32	-
SETTABLE SOLIDS (SS)	M/L-HR	-	< 0.2	< 0.2	< 0.2	< 0.2	-
TOTAL DISSOLVED SOLIDS (TDS)	mg/L	5.0E+02	339	370	358	380	-
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	-	< 4	< 4	< 4	5	-
SULFATE	mg/L	2.5E+02	67.5	58.5	47.7	53.4	-
DISSOLVED SULFIDE	mg/L	-	< 0.2	< 0.2	< 0.2	< 0.2	-
TOTAL COLIFORM	MPN/100ml	2.0E+02	240	240	50	6	-
FECAL COLIFORM	MPN/100mL	-	23	50	8	< 2	-
PERCHLORATE	ug/L	4.0E+00	< 4	< 4	< 4	< 4	-
PRIORITY POLLUTANT METALS (EPA 6010B/7470A/218.6)							
ANTIMONY	ug/L	6.00E+00	< 2.9 J	< 10	< 10	2.4 J	-
ARSENIC	ug/L	5.00E+01	< 5	< 5	< 5	< 5	-
BERYLLIUM	ug/L	1.00E+03	< 2	< 2	< 2	< 2	-
CADMIUM	ug/L	5.00E+00	< 0.49 J	< 0.32 J	0.55 J	0.42 J	-
CHROMIUM	ug/L	5.00E+01	1.5 J	1.9 J	2.0 J	2.0 J	-
CHROMIUM(VI)	ug/L	-	< 1	< 1	< 1	< 1	-
COPPER	ug/L	1.00E+03	< 3.1 J	< 10	< 10	< 10	-
LEAD	ug/L	1.50E+01	< 5	< 5	< 5	< 5	-
MERCURY	ug/L	2.00E+00	0.33 J	0.18 J	0.25 J	0.24 J	-
NICKEL	ug/L	1.00E+02	< 5	1.6 J	< 5	< 5	-
SELENIUM	ug/L	5.00E+01	< 10	< 10	< 10	3.0 J	-
SILVER	ug/L	1.00E+02	< 10	< 10	< 10	< 10	-
THALLIUM	ug/L	2.00E+00	< 10	< 10	< 10	< 10	-
ZINC	ug/L	5.00E+03	9.0 J	< 8.0 J	17.7	11.3	-
TOTAL PETROLEUM HYDROCARBONS (EPA 8015M)							
PHC AS GASOLINE	mg/L	-	0.02 J	0.02 J	0.02 J	0.02 J	-
PHC AS DIESEL FUEL	mg/L	-	< 0.5	< 0.5	< 0.5	< 0.5	-
MOTOR OILS	mg/L	-	< 0.5	< 0.5	< 0.5	< 0.5	-
1,2,3-TCP (EPA 504.1)	ug/L	-	< 0.005	< 0.005	< 0.005	< 0.005	-
VOLATILE ORGANIC COMPOUNDS (EPA 8260B)							
1,1,1,2-TETRACHLOROETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,1,1-TRICHLOROETHANE	ug/L	2.00E+02	< 5	< 5	< 5	< 5	< 5
1,1,2,2-TETRACHLOROETHANE	ug/L	1.00E+00	< 5	< 5	< 5	< 5	< 5
1,1,2-TRICHLOROETHANE	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROETHANE	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROETHENE	ug/L	6.00E+00	< 5	< 5	< 5	< 5	< 5
1,1-DICHLOROPROPENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,2,3-TRICHLOROBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,2,3-TRICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,2,4-TRICHLOROBENZENE	ug/L	7.00E+01	< 5	< 5	< 5	< 5	< 5
1,2,4-TRIMETHYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR BACKGROUND SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	BACKGROUND SURFACE WATER				
SAMPLE ID			BG-SW-1	BG-SW-2	BG-SW-3	BG-SW-QC1	TB-1
DEPTH TO THE SURFACE (INCH)			0-6	0-6	0-6	0-6	
SAMPLING DATE			03/26/2003	03/26/2003	03/26/2003	03/26/2003	03/26/2003
1,2-DIBROMOETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROBENZENE	ug/L	6.00E+02	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROETHANE	ug/L	5.00E-01	< 5	< 5	< 5	< 5	< 5
1,2-DICHLOROPROPANE	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
1,3,5-TRIMETHYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,3-DICHLOROBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,3-DICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
1,4-DICHLOROBENZENE	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
2,2-DICHLOROPROPANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
2-CHLOROTOLUENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
4-CHLOROTOLUENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
ACETONE	ug/L	-	< 50	< 50	< 50	< 50	< 50
BENZENE	ug/L	1.00E+00	< 5	< 5	< 5	< 5	< 5
BROMOBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
BROMOCHLOROMETHANE	ug/L	1.00E+02	< 5	< 5	< 5	< 5	< 5
BROMODICHLOROMETHANE	ug/L	1.00E+02	< 5	< 5	< 5	< 5	< 5
BROMOFORM	ug/L	1.00E+02	< 5	< 5	< 5	< 5	< 5
BROMOMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
CARBON DISULFIDE	ug/L	-	< 5	< 5	< 5	< 5	< 5
CARBON TETRACHLORIDE	ug/L	5.00E-01	< 5	< 5	< 5	< 5	< 5
CHLOROBENZENE	ug/L	7.00E+01	< 5	< 5	< 5	< 5	< 5
CHLOROETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
CHLOROFORM	ug/L	1.00E+02	< 5	< 5	< 5	< 5	< 5
CHLOROMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
CIS-1,2-DICHLOROETHENE	ug/L	6.00E+00	< 5	< 5	< 5	< 5	< 5
CIS-1,3-DICHLOROPROPENE	ug/L	5.00E-01	< 5	< 5	< 5	< 5	< 5
DIBROMOCHLOROMETHANE	ug/L	1.00E+02	< 5	< 5	< 5	< 5	< 5
DIBROMOMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
DICHLORODIFLUOROMETHANE	ug/L	-	< 5	< 5	< 5	< 5	< 5
DIISOPROPYL ETHER (DIPE)	ug/L	-	< 5	< 5	< 5	< 5	< 5
ETHYL TERT BUTYL EHTER (ETBE)	ug/L	-	< 5	< 5	< 5	< 5	< 5
ETHYLBENZENE	ug/L	7.00E+02	< 5	< 5	< 5	< 5	< 5
HEXACHLOROBUTADIENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
ISOPROPYLBENZENE (CUMENE)	ug/L	-	< 5	< 5	< 5	< 5	< 5
M,P-XYLENE	ug/L	1.75E+03	< 10	< 10	< 10	< 10	< 10
METHYL ETHYL KETONE	ug/L	-	< 100	< 100	< 100	< 100	< 100
METHYL ISOBUTYL KETONE	ug/L	-	1 J	< 50	2 J	< 50	1 J
METHYLENE CHLORIDE	ug/L	5.00E+00	5 J	3 J	3 J	6	3 J
NAPHTHALENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
N-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
N-PROPYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
O-XYLENE	ug/L	1.75E+03	< 5	< 5	< 5	< 5	< 5
P-CYMENE (P-ISOPROPYLTOLUENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
SEC-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
STYRENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
T-BUTYLBENZENE	ug/L	-	< 5	< 5	< 5	< 5	< 5
TERT AMYL METHYL ETHER (TAME)	ug/L	-	< 5	< 5	< 5	< 5	< 5
TERT BUTYL ALCOHOL (TBA)	ug/L	-	< 20	< 20	< 20	< 20	< 20

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR BACKGROUND SURFACE WATER SAMPLES
(LOWER LAKES, HDFCB, LOS ANGELES, CA)

ANALYTICAL PARAMETERS	UNIT	MCL/AL	BACKGROUND SURFACE WATER				
SAMPLE ID			BG-SW-1	BG-SW-2	BG-SW-3	BG-SW-QC1	TB-1
DEPTH TO THE SURFACE (INCH)			0-6	0-6	0-6	0-6	
SAMPLING DATE			03/26/2003	03/26/2003	03/26/2003	03/26/2003	03/26/2003
TERT-BUTYL METHYL ETHER	ug/L	-	< 10	< 10	< 10	< 10	< 10
TETRACHLOROETHENE(PCE)	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
TOLUENE	ug/L	1.50E+02	< 5	< 5	< 5	< 5	< 5
TRANS-1,2-DICHLOROETHENE	ug/L	1.00E+01	< 5	< 5	< 5	< 5	< 5
TRANS-1,3-DICHLOROPROPENE	ug/L	5.00E-01	< 5	< 5	< 5	< 5	< 5
TRICHLOROETHENE (TCE)	ug/L	5.00E+00	< 5	< 5	< 5	< 5	< 5
TRICHLOROFLUOROMETHANE	ug/L	1.50E+02	< 5	< 5	< 5	< 5	< 5
VINYL CHLORIDE	ug/L	5.00E-01	< 5	< 5	< 5	< 5	< 5
1,4-DIOXANE (EPA 8270 SIM)	ug/L	3.0E+00	< 1	< 1	< 1	< 1	< 1
NDMA (EPA 1625C)	ug/L	-	< 1	< 1	< 1	< 1	< 1
CHLORINATED PESTICIDES (EPA 8081A)							
ALDRIN	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
BETA BHC	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
ALPHA BHC	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
DELTA BHC	ug/L	1.0E-01	< 0.048	< 0.048	< 0.048	< 0.048	-
GAMMA BHC (LINDANE)	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
ALPHA-CHLORDANE	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
GAMMA-CHLORDANE	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
P,P'-DDD	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
P,P'-DDE	ug/L	-	< 0.48	< 0.48	< 0.48	< 0.48	-
P,P'-DDT	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
DIELDRIN	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
ALPHA ENDOSULFAN	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
BETA ENDOSULFAN	ug/L	2.0E-01	< 0.048	< 0.048	< 0.048	< 0.048	-
ENDOSULFAN SULFATE	ug/L	-	< 0.048	< 0.048	< 0.048	< 0.048	-
ENDRIN	ug/L	1.0E-02	< 0.048	< 0.048	< 0.048	< 0.048	-
ENDRIN ALDEHYDE	ug/L	1.0E-02	< 0.048	< 0.048	< 0.048	< 0.048	-
ENDRIN KETONE	ug/L	4.0E+01	< 1.9	< 1.9	< 1.9	< 1.9	-
HEPTACHLOR	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
HEPTACHLOR EPOXIDE	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
METHOXYCHLOR	ug/L	-	< 0.096	< 0.096	< 0.096	< 0.096	-
TOXAPHENE	ug/L	3.0E+00	< 4.8	< 4.8	< 4.8	< 4.8	-
PCBS (EPA 8082)							
PCB-1016 (AROCLOR 1016)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-
PCB-1221 (AROCLOR 1221)	ug/L	5.0E-01	< 1.9	< 1.9	< 1.9	< 1.9	-
PCB-1232 (AROCLOR 1232)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-
PCB-1242 (AROCLOR 1242)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-
PCB-1248 (AROCLOR 1248)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-
PCB-1254 (AROCLOR 1254)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-
PCB-1260 (AROCLOR 1260)	ug/L	5.0E-01	< 0.96	< 0.96	< 0.96	< 0.96	-

Notes:

PRG = Preliminary Remediation Goal from U.S. Environmental Protection Agency Region IX (EPA, 2002).

MCL = Max Contaminant Level (drinking water), California Department of Health Services (DHS, 2000)

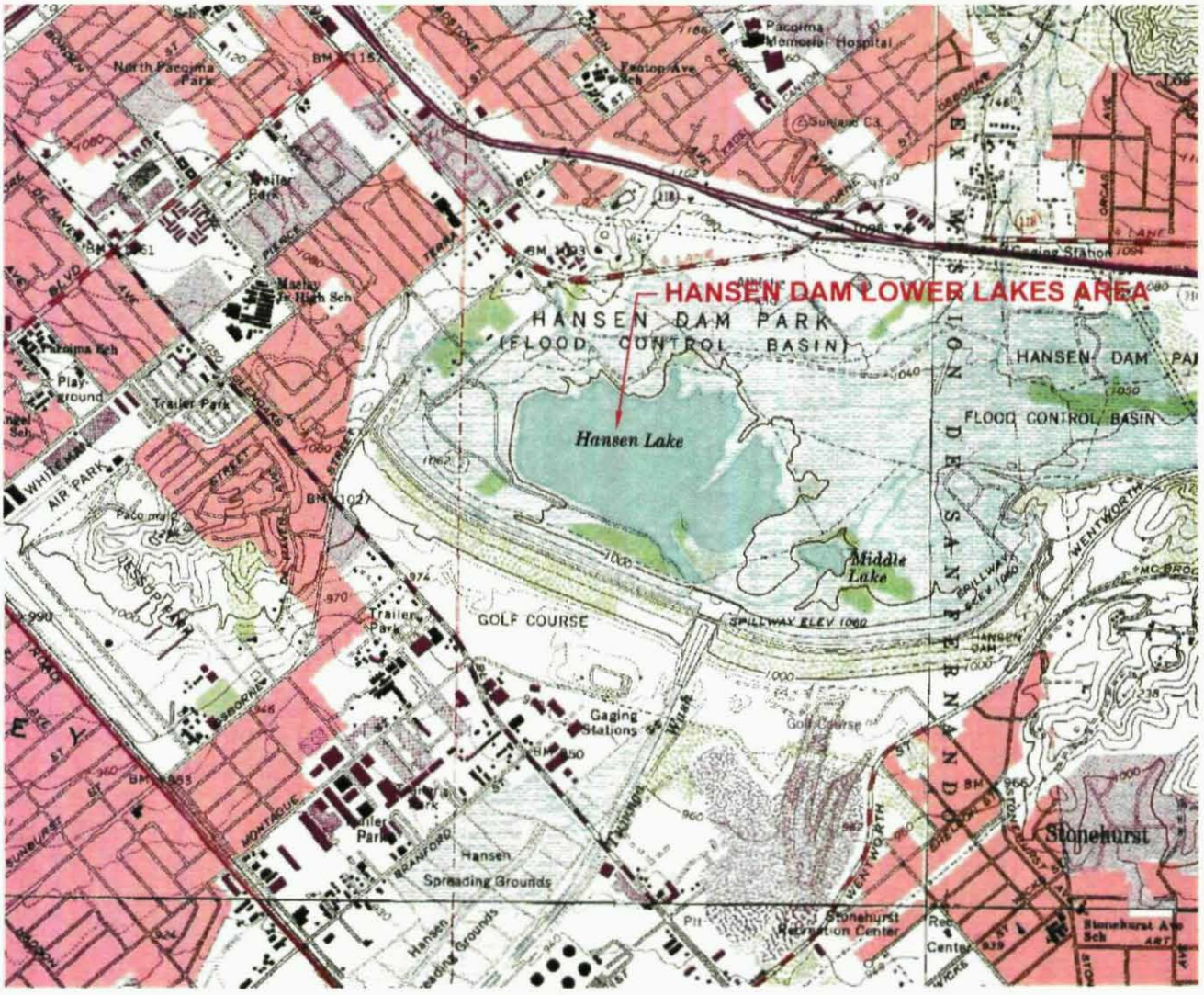
AL = Action Level (drinking water), California Department of Health Services (DHS, 2000)

mg/L = milligrams per liter

µg/L = micrograms per liter

- = Not Analyzed or Not Available

FIGURES



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SCALE MILES

N

TRUE NORTH

SOURCE: USGS 30X60 MINUTE QUADRANGLE Topographic Map – 01 Jul 1983

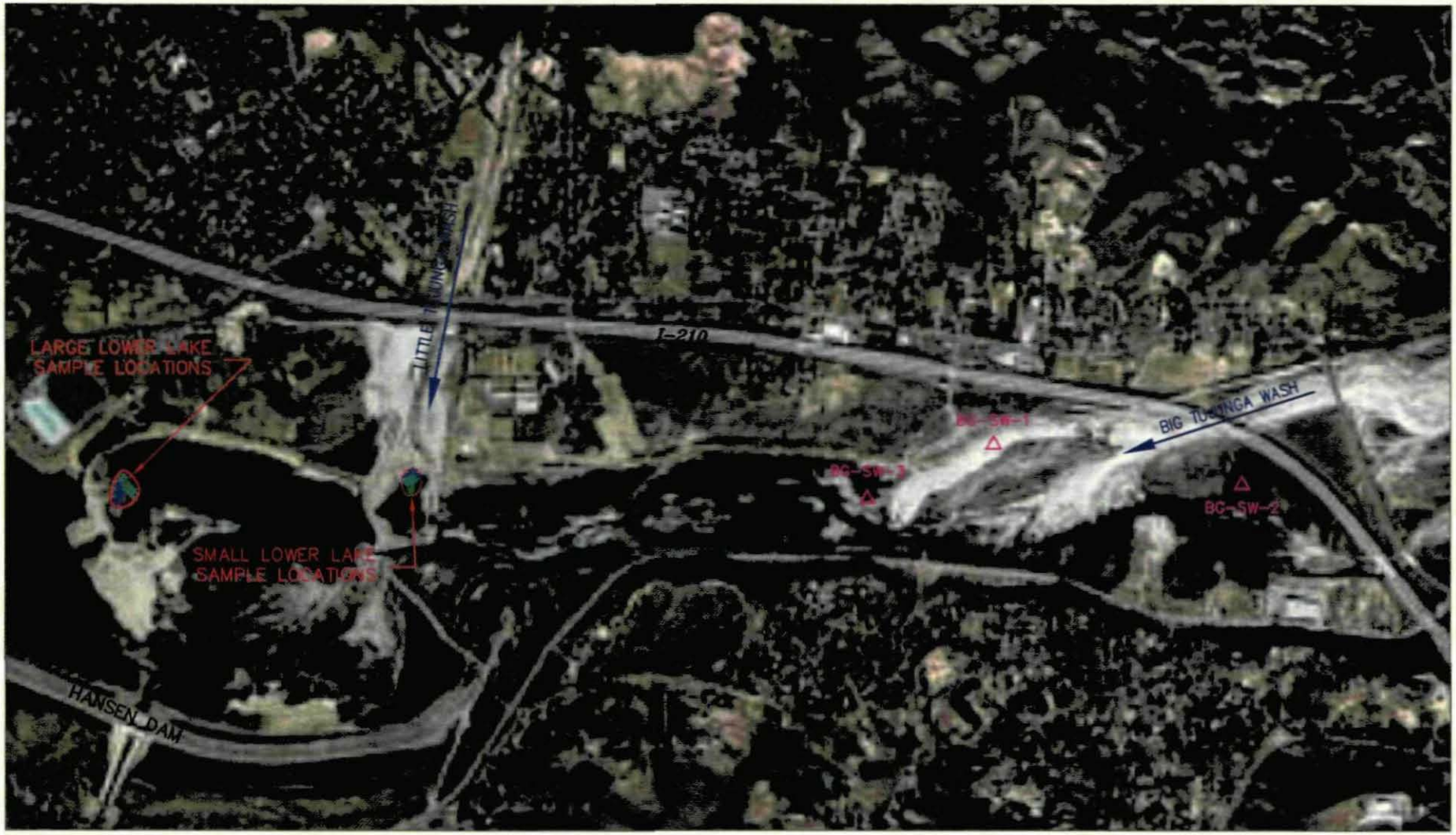
SITE LOCATION MAP
HANSEN DAM FLOOD CONTROL BASIN
LOWER LAKES
LOS ANGELES, CALIFORNIA

SOTA Environmental Technology, Inc.

FIGURE 1

PROJECT NO. 02HW013

MAY 2003



LEGEND

BG-SW-1 △ BACKGROUND SURFACE WATER SAMPLE LOCATION (SOTA, 2003)

0 2000 4000

SCALE IN FEET

NORTH

N

TRUE

SAMPLE LOCATIONS
HANSEN DAM FLOOD CONTROL BASIN
LOWER LAKES
LOS ANGELES, CALIFORNIA

SOTA Environmental Technology, Inc.

FIGURE 3

PROJECT NO. 02HW013

MAY 2003

SS-4 (SOTA 12/2002)

Metals		Unit
Arsenic	2.0	mg/kg
Cadmium	0.07J	mg/kg
Chromium	9.2	mg/kg
Copper	9.6	mg/kg
Lead	4.4	mg/kg
Nickel	7.2	mg/kg
Zinc	27.2	mg/kg
Mercury	0.14J	mg/kg
TPH		
Gasoline	0.03J	mg/kg
Diesel	0.9J	mg/kg
Motor Oil	9J	mg/kg
Pesticides		
Alpha-Chlordane	0.4J	ug/kg
Gamma-Chlordane	0.3J	ug/kg

SD-4 (SOTA 03/2003)

Metals		Unit
Arsenic	1.8	mg/kg
Cadmium	0.69	mg/kg
Chromium	13.7	mg/kg
Copper	13.1	mg/kg
Lead	21.3	mg/kg
Nickel	12.3	mg/kg
Selenium	0.31J	mg/kg
Silver	0.20J	mg/kg
Zinc	47.9	mg/kg
Mercury	0.029J	mg/kg
TPH		
Diesel	6J	mg/kg
Motor Oil	35	mg/kg
Pesticides		
Alpha-Chlordane	9.1	ug/kg
Gamma-Chlordane	7.5	ug/kg
Heptachlor	0.7J	ug/kg
Heptachlor Epoxide	0.4J	ug/kg
P,P'-DDD	5	ug/kg
P,P'-DDE	4	ug/kg
P,P'-DDT	3	ug/kg
PCBs		
PCB-1260	23J	ug/kg

SW-3 (SOTA 12/2002)

Metals	-1(3")	-2(3")	Unit
Arsenic	<5	3.2J	ug/L
Chromium	4.8J	1J	ug/L
Copper	1.2J	1.6J	ug/L
Lead	0.79J	<5	ug/L
Nickel	4.1J	2.2J	ug/L
Silver	0.51J	<10	ug/L
Thallium	2.3J	4.3J	ug/L
Zinc	51.5	24.3	ug/L
Mercury	<0.5	0.19J	ug/L
TPH			
Gasoline	0.02J	0.02J	mg/L
General Water Quality			
BOD	0.89J	1.0J	mg-02/L
Chloride	33.0	31.5	mg/L
Nitrate as N	1.1	1.1	mg/L
Nitrite as N	0.017J	0.016J	mg/L
pH	7.86	7.85	pH Unit
TDS	333	312	mg/L
TSS	11	6	mg/L
Sulfate	65.4	65.7	mg/L
Total Coliform	50	50	PMPN/100 mL
Fecal Coliform	50	50	MPN/100 mL

SD-3 (SOTA 03/2003)

Metals		Unit
Arsenic	4.4	mg/kg
Cadmium	1.3	mg/kg
Chromium	23.2	mg/kg
Copper	24.1	mg/kg
Lead	62.9	mg/kg
Nickel	20.9	mg/kg
Selenium	0.88	mg/kg
Silver	0.15J	mg/kg
Zinc	82.6	mg/kg
Mercury	0.063J	mg/kg
TPH		
Diesel	10J	mg/kg
Motor Oil	68	mg/kg
Pesticides		
Alpha-Chlordane	15	ug/kg
Dieldrin	2J	ug/kg
Endrin Aldehyde	2J	ug/kg
Gamma-Chlordane	14	ug/kg
Heptachlor	2	ug/kg
Heptachlor Epoxide	1	ug/kg
P,P'-DDD	15	ug/kg
P,P'-DDE	11	ug/kg
P,P'-DDT	6.4	ug/kg
PCBs		
PCB-1260	24J	ug/kg

SS-1 (SOTA 12/2002)

Metals		Unit
Arsenic	2.2	mg/kg
Cadmium	0.048J	mg/kg
Chromium	12.9	mg/kg
Copper	10.9	mg/kg
Lead	4.4	mg/kg
Nickel	9.2	mg/kg
Zinc	32.0	mg/kg
Mercury	0.089J	mg/kg
TPH		
Gasoline	<0.9	mg/kg
Diesel	0.9J	mg/kg
Motor Oil	8J	mg/kg
Pesticides		
Alpha-Chlordane	1	ug/kg
Gamma-Chlordane	0.9J	ug/kg
P,P'-DDD	0.6J	ug/kg
P,P'-DDE	3J	ug/kg
Dieldrin	0.4J	ug/kg

SW-2 (SOTA 12/2002)

Metals	-1(3")	-2(3")	Unit
Antimony	<10	3.5J	ug/L
Arsenic	<5	2.3J	ug/L
Chromium	3.3J	<5	ug/L
Copper	1.9J	1J	ug/L
Lead	0.96J	<5	ug/L
Nickel	3.4J	<5	ug/L
Selenium	<10	3.1J	ug/L
Thallium	3.1J	3.0J	ug/L
Zinc	41.7	25.5	ug/L
Mercury	0.14J	0.13J	ug/L
TPH			
Gasoline	0.03J	0.02J	mg/L
General Water Quality			
BOD	1.2J	0.9J	mg-02/L
Chloride	29.5	31.0	mg/L
Nitrate as N	1.1	1.1	mg/L
Nitrite as N	0.017J	0.017J	mg/L
pH	7.68	7.78	pH Unit
TDS	322	323	mg/L
TSS	10	9	mg/L
Sulfate	49.8	53.4	mg/L
Total Coliform	80	300	PMPN/100 mL
Fecal Coliform	23	50	MPN/100 mL

SS-2 (SOTA 12/2002)

Metals		Unit
Arsenic	3	mg/kg
Cadmium	0.05J	mg/kg
Chromium	18.2	mg/kg
Copper	14.4	mg/kg
Lead	5.2	mg/kg
Nickel	13.2	mg/kg
Zinc	39.0	mg/kg
Mercury	0.13J	mg/kg
TPH		
Gasoline	0.02J	mg/kg
Diesel	5J	mg/kg
Motor Oil	31	mg/kg
Pesticides		
Alpha-Chlordane	0.6J	ug/kg
Gamma-Chlordane	0.4J	ug/kg

SW-1 (SOTA 12/2002)

Metals	-1(2')	-2(3.5')-3 (3')	Unit
Arsenic	<5	<5 2.3J	ug/L
Chromium	4.2J	2.9J 0.68J	ug/L
Copper	2.6J	2.1J 1.2J	ug/L
Lead	0.75J	<5 <5	ug/L
Nickel	8.3	1.8J 0.86J	ug/L
Selenium	<10	4.4J <10	ug/L
Thallium	3.6J	2.4J 3.5J	ug/L
Zinc	73.7	53.2 12.4	ug/L
Mercury	<0.5	<0.5 0.17J	ug/L
TPH			
Gasoline	0.02J	0.02J 0.02J	mg/L
Motor Oil	<0.48	0.04J 0.03J	mg/L
General Water Quality			
BOD	0.84J	1.2J 1.1J	mg-02/L
Chloride	33.5	29.0 32.0	mg/L
Nitrate as N	1.2	1.2 1.0	mg/L
Nitrite as N	0.017J	0.017J 0.017J	mg/L
pH	7.86	7.8 7.84	pH Unit
TDS	317	309 311	mg/L
TSS	12	10 9	mg/L
Sulfate	70.5	62.2 63.3	mg/L
Total Coliform	90	50 140	PMPN/100 mL
Fecal Coliform	90	50 140	MPN/100 mL

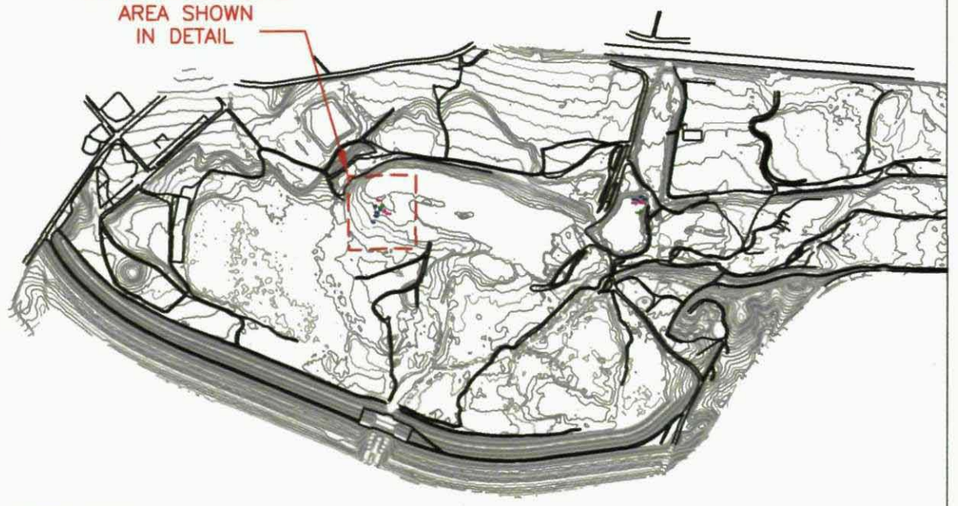
SS-3 (SOTA 12/2002)

Metals		Unit
Arsenic	1.8	mg/kg
Cadmium	0.034J	mg/kg
Chromium	13.8	mg/kg
Copper	11	mg/kg
Lead	3.9	mg/kg
Nickel	9.2	mg/kg
Zinc	32.3	mg/kg
Mercury	0.11J	mg/kg
TPH		
Gasoline	0.02J	mg/kg
Diesel	<11	mg/kg
Motor Oil	9J	mg/kg
Pesticides		
Alpha-Chlordane	0.3J	ug/kg
Gamma-Chlordane	0.2J	ug/kg

BG-1 (SOTA 12/2002)

Metals		Unit
Arsenic	1.2	mg/kg
Chromium	8.2	mg/kg
Copper	10.1	mg/kg
Lead	2.8	mg/kg
Nickel	5.9	mg/kg
Zinc	28.3	mg/kg
Mercury	0.058J	mg/kg
TPH		
Gasoline	0.07J	mg/kg
Diesel	1J	mg/kg
Motor Oil	30	mg/kg

SW-3
SD-3
SS-4
SD-4
SS-1
SW-2
SS-2
SW-1
SS-3
BG-1



INDEX MAP
Scale: 1"= 2000'

LEGEND

SW-1 — SURFACE WATER SAMPLE LOCATION (SOTA 2002)

SS-1 — SOIL/STOCKPILE SAMPLE (SOTA 2002)

SD-1 — SEDIMENT SAMPLE LOCATION (SOTA 2003)

NORTH
-N-
TRUE

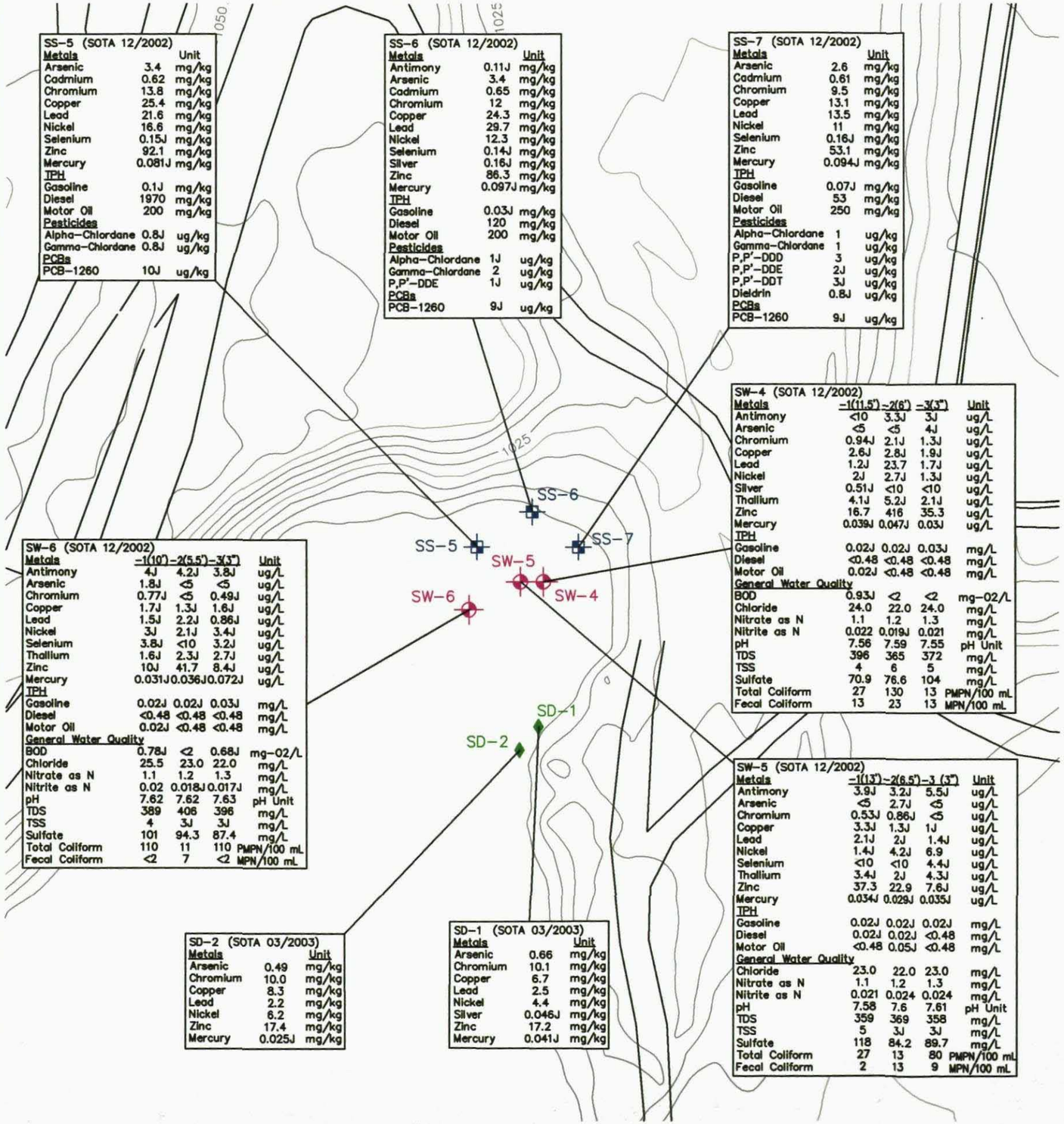
0 100 200
FEET

Base Map Source: USACE LOS ANGELES, 1997 SURVEY DATA

SITE PLAN AND ANALYTICAL RESULTS
HANSEN DAM FLOOD CONTROL BASIN
LARGE LOWER LAKE
LOS ANGELES, CALIFORNIA

SOTA Environmental Technology, Inc.

FIGURE 4
PROJECT NO. 02HW013
MAY 2003



SS-5 (SOTA 12/2002)

Metals		Unit
Arsenic	3.4	mg/kg
Cadmium	0.62	mg/kg
Chromium	13.8	mg/kg
Copper	25.4	mg/kg
Lead	21.6	mg/kg
Nickel	16.6	mg/kg
Selenium	0.15J	mg/kg
Zinc	92.1	mg/kg
Mercury	0.081J	mg/kg
TPH		
Gasoline	0.1J	mg/kg
Diesel	1970	mg/kg
Motor Oil	200	mg/kg
Pesticides		
Alpha-Chlordane	0.8J	ug/kg
Gamma-Chlordane	0.8J	ug/kg
PCBs		
PCB-1260	10J	ug/kg

SS-6 (SOTA 12/2002)

Metals		Unit
Antimony	0.11J	mg/kg
Arsenic	3.4	mg/kg
Cadmium	0.65	mg/kg
Chromium	12	mg/kg
Copper	24.3	mg/kg
Lead	29.7	mg/kg
Nickel	12.3	mg/kg
Selenium	0.14J	mg/kg
Silver	0.16J	mg/kg
Zinc	86.3	mg/kg
Mercury	0.097J	mg/kg
TPH		
Gasoline	0.03J	mg/kg
Diesel	120	mg/kg
Motor Oil	200	mg/kg
Pesticides		
Alpha-Chlordane	1J	ug/kg
Gamma-Chlordane	2	ug/kg
P,P'-DDE	1J	ug/kg
PCBs		
PCB-1260	9J	ug/kg

SS-7 (SOTA 12/2002)

Metals		Unit
Arsenic	2.6	mg/kg
Cadmium	0.61	mg/kg
Chromium	9.5	mg/kg
Copper	13.1	mg/kg
Lead	13.5	mg/kg
Nickel	11	mg/kg
Selenium	0.16J	mg/kg
Zinc	53.1	mg/kg
Mercury	0.094J	mg/kg
TPH		
Gasoline	0.07J	mg/kg
Diesel	53	mg/kg
Motor Oil	250	mg/kg
Pesticides		
Alpha-Chlordane	1	ug/kg
Gamma-Chlordane	1	ug/kg
P,P'-DDD	3	ug/kg
P,P'-DDE	2J	ug/kg
P,P'-DDT	3J	ug/kg
Dieldrin	0.8J	ug/kg
PCBs		
PCB-1260	9J	ug/kg

SW-4 (SOTA 12/2002)

Metals	-1(11.5')	-2(6')	-3(3')	Unit
Antimony	<10	3.3J	3J	ug/L
Arsenic	<5	<5	4J	ug/L
Chromium	0.94J	2.1J	1.3J	ug/L
Copper	2.6J	2.8J	1.9J	ug/L
Lead	1.2J	23.7	1.7J	ug/L
Nickel	2J	2.7J	1.3J	ug/L
Silver	0.51J	<10	<10	ug/L
Thallium	4.1J	5.2J	2.1J	ug/L
Zinc	16.7	416	35.3	ug/L
Mercury	0.039J	0.047J	0.03J	ug/L
TPH				
Gasoline	0.02J	0.02J	0.03J	mg/L
Diesel	<0.48	<0.48	<0.48	mg/L
Motor Oil	0.02J	<0.48	<0.48	mg/L
General Water Quality				
BOD	0.93J	<2	<2	mg-02/L
Chloride	24.0	22.0	24.0	mg/L
Nitrate as N	1.1	1.2	1.3	mg/L
Nitrite as N	0.022	0.019J	0.021	mg/L
pH	7.56	7.59	7.55	pH Unit
TDS	396	365	372	mg/L
TSS	4	6	5	mg/L
Sulfate	70.9	76.6	104	mg/L
Total Coliform	27	130	13	PMPN/100 mL
Fecal Coliform	13	23	13	MPN/100 mL

SW-6 (SOTA 12/2002)

Metals	-1(10')	-2(5.5')	-3(3')	Unit
Antimony	4J	4.2J	3.8J	ug/L
Arsenic	1.8J	<5	<5	ug/L
Chromium	0.77J	<5	0.49J	ug/L
Copper	1.7J	1.3J	1.6J	ug/L
Lead	1.5J	2.2J	0.86J	ug/L
Nickel	3J	2.1J	3.4J	ug/L
Selenium	3.8J	<10	3.2J	ug/L
Thallium	1.6J	2.3J	2.7J	ug/L
Zinc	10J	41.7	8.4J	ug/L
Mercury	0.031J	0.036J	0.072J	ug/L
TPH				
Gasoline	0.02J	0.02J	0.03J	mg/L
Diesel	<0.48	<0.48	<0.48	mg/L
Motor Oil	0.02J	<0.48	<0.48	mg/L
General Water Quality				
BOD	0.78J	<2	0.68J	mg-02/L
Chloride	25.5	23.0	22.0	mg/L
Nitrate as N	1.1	1.2	1.3	mg/L
Nitrite as N	0.02	0.018J	0.017J	mg/L
pH	7.62	7.62	7.63	pH Unit
TDS	389	406	396	mg/L
TSS	4	3J	3J	mg/L
Sulfate	101	94.3	87.4	mg/L
Total Coliform	110	11	110	PMPN/100 mL
Fecal Coliform	<2	7	<2	MPN/100 mL

SW-5 (SOTA 12/2002)

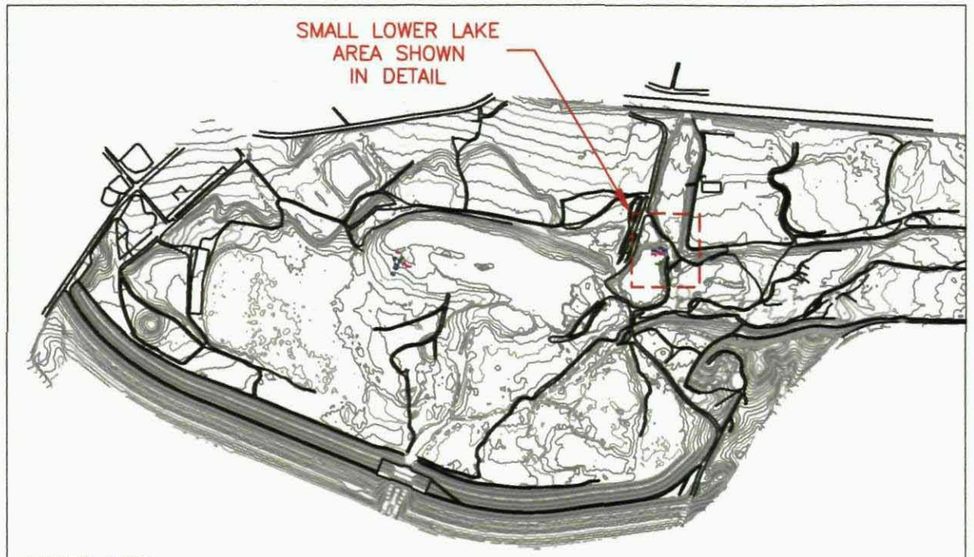
Metals	-1(1.5')	-2(6.5')	-3 (3')	Unit
Antimony	3.9J	3.2J	5.5J	ug/L
Arsenic	<5	2.7J	<5	ug/L
Chromium	0.53J	0.86J	<5	ug/L
Copper	3.3J	1.3J	1J	ug/L
Lead	2.1J	2J	1.4J	ug/L
Nickel	1.4J	4.2J	6.9	ug/L
Selenium	<10	<10	4.4J	ug/L
Thallium	3.4J	2J	4.3J	ug/L
Zinc	37.3	22.9	7.6J	ug/L
Mercury	0.034J	0.029J	0.035J	ug/L
TPH				
Gasoline	0.02J	0.02J	0.02J	mg/L
Diesel	0.02J	0.02J	<0.48	mg/L
Motor Oil	<0.48	0.05J	<0.48	mg/L
General Water Quality				
Chloride	23.0	22.0	23.0	mg/L
Nitrate as N	1.1	1.2	1.3	mg/L
Nitrite as N	0.021	0.024	0.024	mg/L
pH	7.58	7.6	7.61	pH Unit
TDS	359	369	358	mg/L
TSS	5	3J	3J	mg/L
Sulfate	118	84.2	89.7	mg/L
Total Coliform	27	13	80	PMPN/100 mL
Fecal Coliform	2	13	9	MPN/100 mL

SD-2 (SOTA 03/2003)

Metals		Unit
Arsenic	0.49	mg/kg
Chromium	10.0	mg/kg
Copper	8.3	mg/kg
Lead	2.2	mg/kg
Nickel	6.2	mg/kg
Zinc	17.4	mg/kg
Mercury	0.025J	mg/kg

SD-1 (SOTA 03/2003)

Metals		Unit
Arsenic	0.66	mg/kg
Chromium	10.1	mg/kg
Copper	6.7	mg/kg
Lead	2.5	mg/kg
Nickel	4.4	mg/kg
Silver	0.046J	mg/kg
Zinc	17.2	mg/kg
Mercury	0.041J	mg/kg



INDEX MAP
Scale: 1"= 2000'

LEGEND

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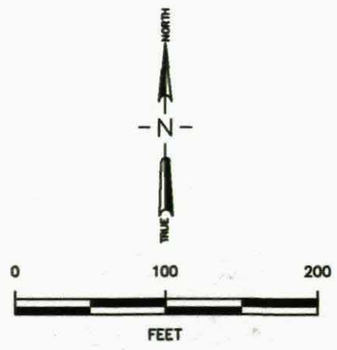
SD-1 — SEDIMENT SAMPLE LOCATION (SOTA 2003)



Base Map Source: USACE LOS ANGELES, 1997 SURVEY DATA

SITE PLAN AND ANALYTICAL RESULTS
HANSEN DAM FLOOD CONTROL BASIN
SMALL LOWER LAKE
LOS ANGELES, CALIFORNIA

SOTA Environmental Technology, Inc.

FIGURE 5

PROJECT NO. 02HW013

MAY 2003

APPENDIX A

APPLIED PHYSICS & CHEMISTRY LABORATORY

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026595
Collected by: MES/DM
Collected on: 12/12/02

Received: 12/13/02
Extracted: 12/16-17/02
Tested: 12/13-20/02
Reported: 01/02/03

Sample Description: Water
Project Description: 02HW013 Lowers Lakes

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result QC-3 02-06595-1	SW-4-1 02-06595-2	SW-4-2 02-06595-3	SW-4-3 02-06595-4
BIOLOGICAL OXYGEN DEMAND (BOD)	405.1	mg-O_2/L	2	-	0.93J	<2	<2
CHLORIDE CL^-	325.3	mg/L	1	-	24.0	22.0	24.0
NITRATE (NO_3^-) AS N	353.3	mg/L	0.1	-	1.1	1.2	1.3
NITRITE (NO_2^-) AS N	354.1	mg/L	0.02	-	0.022	0.019J	0.021
PH	9040B	pH unit	0.01	-	7.56	7.59	7.55
SOLIDS, SETTLEABLE (SS)	160.5	mL/L-hr	0.2	-	<0.2 (a)	<0.2 (a)	<0.2 (a)
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	-	396	365	372
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	mg/L	4	-	4.0	6.0	5.0
SULFATE (SO_4^{--})	375.4	mg/L	2	-	70.9	76.6	104
SULFIDE, DISSOLVED	376.2	mg/L	0.2	-	<0.2	<0.2	<0.2
TOTAL COLIFORM, MTF, 3X5 TUBES	SM9221B	MPN/100mL	2	-	27.0	130	13.0
FECAL COLIFORM, MTF, 3X5 TUBES	SM9221E	MPN/100mL	2	-	13.0	23.0	13.0
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4	<4
PRIORITY POLLUTANT METALS (CWA) (13)							
Dilution Factor				1	1	1	1
ANTIMONY	6010B	µg/L	10	3.2J	<10	3.3J	3.0J
ARSENIC	6010B	µg/L	5	<5	<5	<5	4.0J
BERYLLIUM	6010B	µg/L	2	<2	<2	<2	<2
CADMIUM	6010B	µg/L	2	<2	<2	2.0	<2
CHROMIUM	6010B	µg/L	5	0.83J	0.94J	2.1J	1.3J
COPPER	6010B	µg/L	10	3.7J	2.6J	2.8J	1.9J
LEAD	6010B	µg/L	5	1.1J	1.2J	23.7	1.7J
MERCURY	7470A	µg/L	0.5	0.034J	0.039J	0.047J	0.030J
NICKEL	6010B	µg/L	5	4.4J	2.0J	2.7J	1.3J
SELENIUM	6010B	µg/L	10	<10	<10	<10	<10
SILVER	6010B	µg/L	10	<10	0.51J	<10	<10
THALLIUM	6010B	µg/L	10	4.6J	4.1J	5.2J	2.1J
ZINC	6010B	µg/L	10	17.6	16.7	416	35.3
Dilution Factor				1	1	1	1
PHC AS GASOLINE	M8015V	mg/L	0.05	0.02J	0.02J	0.02J	0.03J
Dilution Factor				0.96	0.96	0.96	0.96
PHC AS DIESEL FUEL	M8015E	mg/L	0.5	<0.48	<0.48	<0.48	<0.48
Dilution Factor				0.96	0.96	0.96	0.96
MOTOR OILS	M8015E	mg/L	0.5	<0.48	0.02J	<0.48	<0.48

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-3 02-06595-1	SW-4-1 02-06595-2	SW-4-2 02-06595-3	SW-4-3 02-06595-4
VOLATILE ORGANICS							
Dilution Factor				1	1	1	1
ACETONE	8260B	µg/L	50	<50	<50	<50	<50
BENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5	<5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-3 02-06595-1	SW-4-1 02-06595-2	SW-4-2 02-06595-3	SW-4-3 02-06595-4
METHYLENE CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ISOBUTYL KETONE	8260B	µg/L	50	<50	<50	<50	<50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
ORGANOCHLORINE PESTICIDES							
Dilution Factor				0.96	0.96	0.96	0.96
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	<4.8	<4.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-3 02-06595-1	SW-4-1 02-06595-2	SW-4-2 02-06595-3	SW-4-3 02-06595-4
PCBS							
Dilution Factor				0.96	0.96	0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96

Component Analyzed	Method	Unit	PQL	Analysis Result SW-5-1 02-06595-5	SW-5-2 02-06595-6	SW-5-3 02-06595-7
BIOLOGICAL OXYGEN DEMAND (BOD)	405.1	mg-O_2/L	2	<2	<2	<2
CHLORIDE CL^-	325.3	mg/L	1	23.0	22.0	23.0
NITRATE (NO_3^-) AS N	353.3	mg/L	0.1	1.1	1.2	1.3
NITRITE (NO_2^-) AS N	354.1	mg/L	0.02	0.021	0.024	0.024
PH	9040B	pH unit	0.01	7.58	7.60	7.61
SOLIDS, SETTLEABLE (SS)	160.5	mL/L-hr	0.2	<0.2 [a]	<0.2 [a]	<0.2
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	359	369	358
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	mg/L	4	5.0	3.0J	3.0J
SULFATE (SO_4^{--})	375.4	mg/L	2	118	84.2	89.7
SULFIDE, DISSOLVED	376.2	mg/L	0.2	<0.2	<0.2	<0.2
TOTAL COLIFORM, MTF, 3X5 TUBES	SM9221B	MPN/100mL	2	27.0	13.0	80.0
FECAL COLIFORM, MTF, 3X5 TUBES	SM9221E	MPN/100mL	2	2.0	13.0	9.0
Dilution Factor				1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4
PRIORITY POLLUTANT METALS (CWA) (13)						
Dilution Factor				1	1	1
ANTIMONY	6010B	µg/L	10	3.9J	3.2J	5.5J
ARSENIC	6010B	µg/L	5	<5	2.7J	<5
BERYLLIUM	6010B	µg/L	2	<2	<2	<2
CADMIUM	6010B	µg/L	2	<2	<2	<2
CHROMIUM	6010B	µg/L	5	0.53J	0.86J	<5
COPPER	6010B	µg/L	10	3.3J	1.3J	1.0J
LEAD	6010B	µg/L	5	2.1J	2.0J	1.4J
MERCURY	7470A	µg/L	0.5	0.034J	0.029J	0.035J
NICKEL	6010B	µg/L	5	1.4J	4.2J	6.9
SELENIUM	6010B	µg/L	10	<10	<10	4.4J
SILVER	6010B	µg/L	10	<10	<10	<10
THALLIUM	6010B	µg/L	10	3.4J	2.0J	4.3J
ZINC	6010B	µg/L	10	37.3	22.9	7.6J
Dilution Factor				1	1	1
PHC AS GASOLINE	M8015V	mg/L	0.05	0.02J	0.02J	0.02J
Dilution Factor				0.96	0.96	0.96
PHC AS DIESEL FUEL	M8015E	mg/L	0.5	0.02J	0.02J	<0.48
Dilution Factor				0.96	0.96	0.96
MOTOR OILS	M8015E	mg/L	0.5	<0.48	0.05J	<0.48

APCL

Applied Physics & Chemistry Laboratory

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May 2, 2003

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 02-6595 and your project is 02HW013 Lowers Lakes. Enclosed please find:

(1) One copy of analytical report.
(2) One copy of Chain of Custody.
(3) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-5-1 02-06595-5	SW-5-2 02-06595-6	SW-5-3 02-06595-7
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	8260B	µg/L	50	<50	<50	<50
BENZENE	8260B	µg/L	5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-5-1 02-06595-5	SW-5-2 02-06595-6	SW-5-3 02-06595-7
METHYLENE CHLORIDE	8260B	µg/L	5	<5	<5	<5
METHYL ISOBUTYL KETONE	8260B	µg/L	50	<50	<50	<50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	5	<5	<5	<5
ORGANOCHLORINE PESTICIDES						
Dilution Factor				0.96	0.96	0.96
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	<4.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-5-1 02-06595-5	SW-5-2 02-06595-6	SW-5-3 02-06595-7
PCBS						
Dilution Factor				0.96	0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	<0.96

Component Analyzed	Method	Unit	PQL	Analysis Result SW-6-1 02-06595-8	SW-6-2 02-06595-9	SW-6-3 02-06595-10
BIOLOGICAL OXYGEN DEMAND (BOD)	405.1	mg-O_2/L	2	0.78J	<2	0.68J
CHLORIDE CL^-	325.3	mg/L	1	25.5	23.0	22.0
NITRATE (NO_3^-) AS N	353.3	mg/L	0.1	1.1	1.2	1.3
NITRITE (NO_2^-) AS N	354.1	mg/L	0.02	0.020	0.018J	0.017J
PH	9040B	pH unit	0.01	7.62	7.62	7.63
SOLIDS, SETTLEABLE (SS)	160.5	mL/L-hr	0.2	<0.2	<0.2	<0.2
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	389	406	396
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	mg/L	4	4.0	3.0J	3.0J
SULFATE (SO_4^{--})	375.4	mg/L	2	101	94.3	87.4
SULFIDE, DISSOLVED	376.2	mg/L	0.2	<0.2	<0.2	<0.2
TOTAL COLIFORM, MTF, 3X5 TUBES	SM9221B	MPN/100mL	2	110	11.0	110
FECAL COLIFORM, MTF, 3X5 TUBES	SM9221E	MPN/100mL	2	<2	7.0	<2
Dilution Factor				1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4
PRIORITY POLLUTANT METALS (CWA) (13)						
Dilution Factor				1	1	1
ANTIMONY	6010B	µg/L	10	4.0J	4.2J	3.8J
ARSENIC	6010B	µg/L	5	1.8J	<5	<5
BERYLLIUM	6010B	µg/L	2	<2	<2	<2
CADMIUM	6010B	µg/L	2	<2	<2	<2
CHROMIUM	6010B	µg/L	5	0.77J	<5	0.49J
COPPER	6010B	µg/L	10	1.7J	1.3J	1.6J
LEAD	6010B	µg/L	5	1.5J	2.2J	0.86J
MERCURY	7470A	µg/L	0.5	0.031J	0.036J	0.072J
NICKEL	6010B	µg/L	5	3.0J	2.1J	3.4J
SELENIUM	6010B	µg/L	10	3.8J	<10	3.2J
SILVER	6010B	µg/L	10	<10	<10	<10
THALLIUM	6010B	µg/L	10	1.6J	2.3J	2.7J
ZINC	6010B	µg/L	10	10J	41.7	8.4J
Dilution Factor				1	1	1
PHC AS GASOLINE	M8015V	mg/L	0.05	0.02J	0.02J	0.03J
Dilution Factor				0.96	0.96	0.96
PHC AS DIESEL FUEL	M8015E	mg/L	0.5	<0.48	<0.48	<0.48
Dilution Factor				0.96	0.96	0.96
MOTOR OILS	M8015E	mg/L	0.5	0.02J	<0.48	<0.48

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-6-1 02-06595-8	SW-6-2 02-06595-9	SW-6-3 02-06595-10
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	8260B	µg/L	50	<50	<50	<50
BENZENE	8260B	µg/L	5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-6-1 02-06595-8	SW-6-2 02-06595-9	SW-6-3 02-06595-10
METHYLENE CHLORIDE	8260B	µg/L	5	<5	<5	<5
METHYL ISOBUTYL KETONE	8260B	µg/L	50	<50	<50	<50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	5	<5	<5	<5
ORGANOCHLORINE PESTICIDES						
Dilution Factor				0.96	0.96	0.96
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	<4.8

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-6-1 02-06595-8	SW-6-2 02-06595-9	SW-6-3 02-06595-10
PCBS						
Dilution Factor				0.96	0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	<0.96

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) 500mL sample was used.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Lowers Lakes/02HW013

For SOTA Environmental

APCL Service No: 02-6595

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
SW-4-1	02-06595-2
SW-4-2	02-06595-3
SW-4-3	02-06595-4
SW-5-1	02-06595-5
SW-5-2	02-06595-6
SW-6-1	02-06595-8
SW-6-2	02-06595-9
SW-5-3	02-06595-7
SW-6-3	02-06595-10
QC-3	02-06595-1

2. Analytical Methodology

Samples are analyzed by EPA methods

8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
8081A (Organochlorine pesticides),
8082 (PCBs),
314.0 (Perchlorate, low level),
6010B/7470A (Priority Pollutant Metals (CWA) (13)),
376.1 (Sulfide, Dissolved),
405.1 (Biological Oxygen Demand (BOD)),
375.4 (Sulfate (SO_4^{--})),
325.3 (Chloride Cl^-),
160.1 (Solids, Total Dissolved (TDS)),
160.2 (Solids, Total Suspended (TSS)),
160.5 (Solids, Settleable (SS)),
9040B (pH),
SM9221B (Total Coliform, MTF, 3X5 tubes),
SM9221E (Fecal Coliform, MTF, 3X5 tubes),
353.3 (Nitrate (NO_3^-) as N),
354.1 (Nitrite (NO_2^-) as N),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013
Please Print in pen Page 1 of 6

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4) Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-3-3	NO SAMPLE			Water	1	6	40-mL VOA	x	x											No Sample
SW-3-3				Water	5	3	1-L Amber Glass				x	x	x							
SW-3-3				Water	5	1	125-mL Poly						x							
SW-3-3				Water	5	2	1-L Poly							x					x	
SW-3-3				Water	3	1	500 mL Poly, pH<2								x					
SW-3-3				Water	4	1	250-mL pH>12									x				
SW-3-3				Water	5	1	500-mL Poly										x			
SW-3-3				Water	6	1	100 mL Sterilized Poly											x		
SW-4-1	11.5' BELOW SURF.	12/12/02	0912	Water	1	6	40-mL VOA	x	x											
SW-4-1				Water	5	3	1-L Amber Glass				x	x	x							
SW-4-1				Water	5	1	125-mL Poly						x							
SW-4-1				Water	5	4 or	500ml Poly							x					x	6595
SW-4-1				Water	3	1	500 mL Poly, pH<2								x					
SW-4-1				Water	4	1	250-mL pH>12									x				
SW-4-1				Water	5	1	500-mL Poly										x			
SW-4-1				Water	6	1	100 mL Sterilized Poly											x		

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: Date/Time 12/12/02 1656 Received by: Date/Time 12-12-02 - 1656

Relinquished by: Date/Time 12/12/02 1855 Received by: Date/Time 12/13/02 830A

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please
Print in pen Page 2 of 6

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/~~BM~~

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-4-2	6' BELOW SURF.	12/12/02	0846	Water	1	6	40-mL VOA	x	x												
SW-4-2				Water	5	3	1-L Amber Glass			x	x	x									
SW-4-2				Water	5	1	125-mL Poly						x								
SW-4-2				Water	5	4 ~~2~~	500 mL Poly							x						x	
SW-4-2				Water	3	1	500 mL Poly, pH<2								x						
SW-4-2				Water	4	1	250-mL pH>12									x					
SW-4-2				Water	5	1	500-mL Poly										x				
SW-4-2				Water	6	1	100 mL Sterilized Poly											x			
SW-4-3	3" BELOW SURF.	12/12/02	0923	Water	1	6	40-mL VOA	x	x												
SW-4-3				Water	5	3	1-L Amber Glass			x	x	x									
SW-4-3				Water	5	1	125-mL Poly						x								
SW-4-3				Water	5	4 ~~2~~	500 mL Poly							x						x	
SW-4-3				Water	3	1	500 mL Poly, pH<2								x						
SW-4-3				Water	4	1	250-mL pH>12									x					
SW-4-3				Water	5	1	500-mL Poly										x				
SW-4-3				Water	6	1	100 mL Sterilized Poly											x			

6595

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 12/12/02 1656	Received by:	Date/Time 12-12-02-1656
Relinquished by:	Date/Time 12/12/02 1855	Received by:	Date/Time 12/13/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
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San Diego, CA 92127-1613
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Chain of Custody

02HW013 Please Print in pen

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4) Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-5-1	13' Below Surface	12/12/02	1019	Water	1	6	40-mL VOA	x	x											
SW-5-1				Water	5	3	1-L Amber Glass			x	x	x								
SW-5-1				Water	5	1	125-mL Poly						x							
SW-5-1				Water	5	4	500mL Poly							x					x	
SW-5-1				Water	3	1	500 mL Poly, pH<2								x					
SW-5-1				Water	4	1	250-mL pH>12									x				
SW-5-1				Water	5	1	500-mL Poly										x			
SW-5-1				Water	6	1	100 mL Sterilized Poly											x		
SW-5-2	6.5' Below Surface	12/12/02	1043	Water	1	6	40-mL VOA	x	x											
SW-5-2				Water	5	3	1-L Amber Glass			x	x	x								
SW-5-2				Water	5	1	125-mL Poly						x							
SW-5-2				Water	5	4	500mL Poly							x					x	
SW-5-2				Water	3	1	500 mL Poly, pH<2								x					
SW-5-2				Water	4	1	250-mL pH>12									x				
SW-5-2				Water	5	1	500-mL Poly										x			
SW-5-2				Water	6	1	100 mL Sterilized Poly											x		

6595

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other $Na_2S_2O_8$, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 12/12/02 1656	Received by:	Date/Time 12-12-02 1656
Relinquished by:	Date/Time 12/12/02 1855	Received by:	Date/Time 12/13/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
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Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

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Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Coli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-6-1	10' BELOW SURFACE	12/12/02	1258	Water	1	6	40-mL VOA	x	x												
SW-6-1				Water	5	3	1-L Amber Glass			x	x	x									
SW-6-1				Water	5	1	125-mL Poly						x								
SW-6-1				Water	5	2	1-L Poly							x						x	
SW-6-1				Water	3	1	500 mL Poly, pH<2								x						
SW-6-1				Water	4	1	250-mL pH>12									x					
SW-6-1				Water	5	1	500-mL Poly										x				
SW-6-1				Water	6	1	100 mL Sterilized Poly											x			
SW-6-2	5.5' BELOW SURFACE	12/12/02	1327	Water	1	6	40-mL VOA	x	x											6595	
SW-6-2				Water	5	3	1-L Amber Glass			x	x	x									
SW-6-2				Water	5	1	125-mL Poly						x								
SW-6-2				Water	5	2	1-L Poly							x						x	
SW-6-2				Water	3	1	500 mL Poly, pH<2								x						
SW-6-2				Water	4	1	250-mL pH>12									x					
SW-6-2				Water	5	1	500-mL Poly										x				
SW-6-2				Water	6	1	100 mL Sterilized Poly											x			

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 12/12/02 1656	Received by:	Date/Time 12-12-02 1656
Relinquished by:	Date/Time 12/12/02 1855	Received by:	Date/Time 12/13/02 0800

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please
Print in pen Page 5 of 6

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4) Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-5-3	3" BELOW SURFACE	12/12/02	1108	Water	1	6	40-mL VOA	x	x											
SW-5-3				Water	5	3	1-L Amber Glass				x	x	x							
SW-5-3				Water	5	1	125-mL Poly						x							
SW-5-3				Water	5	2	1-L Poly							x					x	
SW-5-3				Water	3	1	500 mL Poly, pH<2								x					
SW-5-3				Water	4	1	250-mL pH>12									x				
SW-5-3				Water	5	1	500-mL Poly										x			
SW-5-3				Water	6	1	100 mL Sterilized Poly											x		
																				6595
SW-6-3	3" BELOW SURFACE	12/12/02	1353	Water	1	6	40-mL VOA	x	x											
SW-6-3				Water	5	3	1-L Amber Glass			x	x	x								
SW-6-3				Water	5	1	125-mL Poly						x							
SW-6-3				Water	5	2	1-L Poly							x					x	
SW-6-3				Water	3	1	500 mL Poly, pH<2								x					
SW-6-3				Water	4	1	250-mL pH>12									x				
SW-6-3				Water	5	1	500-mL Poly										x			
SW-6-3				Water	6	1	100 mL Sterilized Poly											x		

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 12/12/02 1656	Received by:	Date/Time 12-12-02 1656
Relinquished by:	Date/Time 12/12/02 1855	Received by:	Date/Time 12/13/02 0800

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please Print in pen Page 6 of 6

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Remarks
QC-2				Water	1	6	40-mL VOA	x	x						NO SAMPLE
QC-2				Water	5	3	1-L Amber Glass			x	x	x			
QC-2				Water	5	1	125-mL Poly						x		
QC-2				Water	5	2	1-L Poly							x	
QC-3		12/12/02	1353	Water	1	6	40-mL VOA	x	x						6595
QC-3				Water	5	3	1-L Amber Glass			x	x	x			
QC-3				Water	5	1	125-mL Poly						x		
QC-3				Water	5	1	1-L Poly							x	

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: Date/Time 12/12/02 1656 Received by: Date/Time 12-12-02 1656

Relinquished by: Date/Time 12/12/02 1855 Received by: Date/Time 12/13/02 0800

Air Bill Number:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 6595 **Client Name/Project:** Sota Environmental / Lawers Lakes

1. Sample Arrival

Date/Time Received 12/13/02 0830A Date/Time Opened 12/13/02 0830A By (name): KennyChan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☒ APCL Empl: Richard Tinson

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By:
☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold ____ # Received 10
☒ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☒ #Samples OK? ____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): ____

3. Shipping Container/Cooler

☒ Cooler Used? # of 5 Cooled by: ☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Temp °C 3.7 4.0 4.2 3.8 4.0 ____

(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).

Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12

If Not, pH = ____ Preserved by: ☐ Client ☐ APCL ☐ Third Party ____

5. Holding-time Requirements

☒ pH 24hr ☒ BACT 6/24hr ☐ Cr^{VI} 24hr ☐ NO_3^- 48hr ☒ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number: ____
Type: ☒ plastic ☒ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☒ Quantity OK? ☐ Leaking? ☐ Anomaly?
☒ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☒ Unique ID? ☒ Date/Time ☐ Preserved?

7. Turn Around Time

☐ RUSH TAT: ____ ☒ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☒ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: ____
☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☒ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:____)Date/Time:____

Received/Checked by: KennyChan Date: 12 Dec 2002 Time: 7:48 a.m.

Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List 2nd

02-06595 (1288_ 435) (4858100_ 435)

12/16/02

Part 1: General Information

☐	Company Information	Name:	*SOTA Environmental*
		Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
☐	Project Information	Project Description:	*Lowers Lakes*
		Project #:	*02HW013*
☐	Billing Information	P.O. #:	
		Bill Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
		Lab Project ID:	
		Client Database #:	*0*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*12/13/02 0830*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.7 4.0 4.2 3.7 4.0 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	SW-4-1	VOC/Gas	02-06595-2-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-4-1	8015	02-06595-2-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-1	8081	02-06595-2-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-1	8082	02-06595-2-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-1	PH/SS	02-06595-2-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-4-1	Perch	02-06595-2-η	W	P		125	1	G	121202	N	0	7	☐
	SW-4-1	Metal	02-06595-2-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-4-1	NO3/NO2	02-06595-2-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-4-1	DSulfide	02-06595-2-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-4-1	BOD	02-06595-2-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-4-1	Colif	02-06595-2-ν	W	P	T	120	1	G	121202	N	0	7	☐
2	SW-4-2	VOC/Gas	02-06595-3-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-4-2	8015	02-06595-3-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-2	8081	02-06595-3-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-2	8082	02-06595-3-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-2	PH/SS	02-06595-3-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-4-2	Perch	02-06595-3-η	W	P		125	1	G	121202	N	0	7	☐
	SW-4-2	Metal	02-06595-3-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-4-2	NO3/NO2	02-06595-3-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-4-2	DSulfide	02-06595-3-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-4-2	BOD	02-06595-3-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-4-2	Colif	02-06595-3-ν	W	P	T	120	1	G	121202	N	0	7	☐
3	SW-4-3	VOC/Gas	02-06595-4-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-4-3	8015	02-06595-4-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-3	8081	02-06595-4-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-3	8082	02-06595-4-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-4-3	PH/SS	02-06595-4-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-4-3	Perch	02-06595-4-η	W	P		125	1	G	121202	N	0	7	☐
	SW-4-3	Metal	02-06595-4-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-4-3	NO3/NO2	02-06595-4-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-4-3	DSulfide	02-06595-4-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-4-3	BOD	02-06595-4-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-4-3	Colif	02-06595-4-ν	W	P	T	120	1	G	121202	N	0	7	☐
4	SW-5-1	VOC/Gas	02-06595-5-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-5-1	8015	02-06595-5-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-1	8081	02-06595-5-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-1	8082	02-06595-5-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-1	PH/SS	02-06595-5-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-5-1	Perch	02-06595-5-η	W	P		125	1	G	121202	N	0	7	☐
	SW-5-1	Metal	02-06595-5-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-5-1	NO3/NO2	02-06595-5-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-5-1	DSulfide	02-06595-5-κ	W	P	B	250	1	G	121202	N	0	7	☐

	SW-5-1	BOD	02-06595-5-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-5-1	Colif	02-06595-5-ν	W	P	T	120	1	G	121202	N	0	7	☐
5	SW-5-2	VOC/Gas	02-06595-6-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-5-2	8015	02-06595-6-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-2	8081	02-06595-6-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-2	8082	02-06595-6-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-2	PH/SS	02-06595-6-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-5-2	Perch	02-06595-6-η	W	P		125	1	G	121202	N	0	7	☐
	SW-5-2	Metal	02-06595-6-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-5-2	NO3/NO2	02-06595-6-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-5-2	DSulfide	02-06595-6-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-5-2	BOD	02-06595-6-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-5-2	Colif	02-06595-6-ν	W	P	T	120	1	G	121202	N	0	7	☐
6	SW-6-1	VOC/Gas	02-06595-8-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-6-1	8015	02-06595-8-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-1	8081	02-06595-8-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-1	8082	02-06595-8-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-1	PH/SS	02-06595-8-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-6-1	Perch	02-06595-8-η	W	P		125	1	G	121202	N	0	7	☐
	SW-6-1	Metal	02-06595-8-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-6-1	NO3/NO2	02-06595-8-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-6-1	DSulfide	02-06595-8-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-6-1	BOD	02-06595-8-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-6-1	Colif	02-06595-8-ν	W	P	T	120	1	G	121202	N	0	7	☐
7	SW-6-2	VOC/Gas	02-06595-9-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-6-2	8015	02-06595-9-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-2	8081	02-06595-9-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-2	8082	02-06595-9-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-2	PH/SS	02-06595-9-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-6-2	Perch	02-06595-9-η	W	P		125	1	G	121202	N	0	7	☐
	SW-6-2	Metal	02-06595-9-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-6-2	NO3/NO2	02-06595-9-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-6-2	DSulfide	02-06595-9-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-6-2	BOD	02-06595-9-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-6-2	Colif	02-06595-9-ν	W	P	T	120	1	G	121202	N	0	7	☐
8	SW-5-3	VOC/Gas	02-06595-7-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-5-3	8015	02-06595-7-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-3	8081	02-06595-7-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-3	8082	02-06595-7-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-5-3	PH/SS	02-06595-7-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-5-3	Perch	02-06595-7-η	W	P		125	1	G	121202	N	0	7	☐
	SW-5-3	Metal	02-06595-7-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-5-3	NO3/NO2	02-06595-7-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-5-3	DSulfide	02-06595-7-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-5-3	BOD	02-06595-7-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-5-3	Colif	02-06595-7-ν	W	P	T	120	1	G	121202	N	0	7	☐

9	SW-6-3	VOC/Gas	02-06595-10-α	W	V	C	40	6	G	121202	N	0	7	☐
	SW-6-3	8015	02-06595-10-β	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-3	8081	02-06595-10-γ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-3	8082	02-06595-10-δ	W	G		1000	1	G	121202	N	0	7	☐
	SW-6-3	PH/SS	02-06595-10-ζ	W	P		1000	2	G	121202	N	0	7	☐
	SW-6-3	Perch	02-06595-10-η	W	P		125	1	G	121202	N	0	7	☐
	SW-6-3	Metal	02-06595-10-θ	W	P	N	1000	2	G	121202	N	0	7	☐
	SW-6-3	NO3/NO2	02-06595-10-ι	W	P	S	500	1	G	121202	N	0	7	☐
	SW-6-3	DSulfide	02-06595-10-κ	W	P	B	250	1	G	121202	N	0	7	☐
	SW-6-3	BOD	02-06595-10-μ	W	P		500	1	G	121202	N	0	7	☐
	SW-6-3	Colif	02-06595-10-ν	W	P	T	120	1	G	121202	N	0	7	☐
10	QC-3	VOC/Gas	02-06595-1-α	W	V	C	40	6	G	121202	N	0	7	☐
	QC-3	8015	02-06595-1-β	W	G		1000	1	G	121202	N	0	7	☐
	QC-3	8081	02-06595-1-γ	W	G		1000	1	G	121202	N	0	7	☐
	QC-3	8082	02-06595-1-δ	W	G		1000	1	G	121202	N	0	7	☐
	QC-3	Perch	02-06595-1-ζ	W	P		125	1	G	121202	N	0	7	☐
	QC-3	Metal	02-06595-1-η	W	P	N	1000	2	G	121202	N	0	7	☐

Part 3: Analysis Information

Test Items:

☐ *8260B*	Volatile organics
☐ *M8015V/M8015G*	Gasoline
☐ *M8015E/M8015D*	TPH: Diesel
☐ *M8015E/M8015M*	TPH: Motor Oil
☐ *8081A*	Organochlorine pesticides
☐ *8082*	PCBs
☐ *314.0/300.0*	Perchlorate, low level
☐ *6010B/7000A*	Priority Pollutant Metals (CWA) (13)
☐ *376.1/9030B*	Sulfide, Dissolved
☐ *405.1*	Biological Oxygen Demand (BOD)
☐ *375.4/9038*	Sulfate (SO_4^{--})
☐ *325.3/9252A*	Chloride Cl^-
☐ *160.1*	Solids, Total Dissolved (TDS)
☐ *160.2*	Solids, Total Suspended (TSS)
☐ *160.5*	Solids, Settleable (SS)
☐ *9040B/150.1*	pH
☐ *SM9221B/9131*	Total Coliform, MTF, 3X5 tubes
☐ *SM9221E*	Fecal Coliform, MTF, 3X5 tubes
☐ ~~*353.3*~~	Nitrate (NO_3^-) as N Cd reduction

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

May 2, 2003

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 02-6564 and your project is 02HW013 Lowers Lakes. Enclosed please find:

(1) One copy of analytical report.
(2) One copy of Chain of Custody.
(3) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026564
Collected by: MES/DM
Collected on: 12/11/02

Received: 12/12/02
Extracted: 12/12-19/02
Tested: 12/12-19/02
Reported: 01/02/03

Sample Description: Soil
Project Description: 02HW013 Lowers Lakes

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result BG-1 02-06564-1	QC-1 02-06564-2	SS-3 02-06564-3	SS-4 02-06564-4
MOISTURE	ASTM-D2216	%Moisture	0.5	6.1	5.7	9.0	7.8
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/kg	20	<21	<21	<22	<22
PRIORITY POLLUTANT METALS (CWA) (13)							
Dilution Factor				1	1	1	1
ANTIMONY	6010B	mg/kg	5	<5.3	<5.3	<5.5	<5.4
ARSENIC	6010B	mg/kg	0.3	1.2	3.9	1.8	2.0
BERYLLIUM	6010B	mg/kg	0.2	<0.21	<0.21	<0.22	<0.22
CADMIUM	6010B	mg/kg	0.2	<0.21	0.034J	0.034J	0.070J
CHROMIUM	6010B	mg/kg	0.5	8.2	9.3	13.8	9.2
COPPER	6010B	mg/kg	0.5	10.1	9.1	11.0	9.6
LEAD	6010B	mg/kg	0.3	2.8	3.2	3.9	4.4
MERCURY	7471A	mg/kg	0.2	0.058J	0.12J	0.11J	0.14J
NICKEL	6010B	mg/kg	0.3	5.9	5.8	9.2	7.2
SELENIUM	6010B	mg/kg	0.5	<0.53	<0.53	<0.55	<0.54
SILVER	6010B	mg/kg	0.5	<0.53	0.19J	<0.55	<0.54
THALLIUM	6010B	mg/kg	0.5	<0.53	<0.53	<0.55	<0.54
ZINC	6010B	mg/kg	0.5	28.3	26.9	32.3	27.2
Dilution Factor				1.34	0.9	0.96	0.86
PHC AS GASOLINE	M8015V	mg/kg	1	0.07J	<0.95	0.02J	0.03J
Dilution Factor				1	1	1	1
PHC AS DIESEL FUEL	M8015E	mg/kg	10	1J	<11	<11	0.9J
Dilution Factor				1	1	1	1
MOTOR OILS	M8015E	mg/kg	10	30	13	9J	9J

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-1 02-06564-1	QC-1 02-06564-2	SS-3 02-06564-3	SS-4 02-06564-4
VOLATILE ORGANICS							
Dilution Factor				1.13	0.88	0.81	0.85
ACETONE	8260B	µg/kg	50	<60	<47	11J	<46
BENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
BROMOBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
BROMOCHLOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
BROMODICHLOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
BROMOFORM	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
BROMOMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
METHYL ETHYL KETONE	8260B	µg/kg	100	<120	<93	<89	<92
N-BUTYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
SEC-BUTYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
T-BUTYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CARBON DISULFIDE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CARBON TETRACHLORIDE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
DIBROMOCHLOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CHLOROFORM	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CHLOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
2-CHLOROTOLUENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
4-CHLOROTOLUENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2-DIBROMOETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
DIBROMOMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2-DICHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,3-DICHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,4-DICHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
DICHLORODIFLUOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1-DICHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2-DICHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1-DICHLOROETHENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CIS-1,2-DICHLOROETHENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TRANS-1,2-DICHLOROETHENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2-DICHLOROPROPANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,3-DICHLOROPROPANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
2,2-DICHLOROPROPANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1-DICHLOROPROPENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
CIS-1,3-DICHLOROPROPENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TRANS-1,3-DICHLOROPROPENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
ETHYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
HEXACHLOROBUTADIENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
ISOPROPYLBENZENE (CUMENE)	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-1 02-06564-1	QC-1 02-06564-2	SS-3 02-06564-3	SS-4 02-06564-4
METHYLENE CHLORIDE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
METHYL ISOBUTYL KETONE	8260B	µg/kg	50	2J	<47	<45	<46
TERT-BUTYL METHYL ETHER	8260B	µg/kg	10	<12	<9.3	<8.9	<9.2
NAPHTHALENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
N-PROPYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
STYRENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1,1,2-TETRACHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1,2,2-TETRACHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TETRACHLOROETHENE(PCE)	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TOLUENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2,3-TRICHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2,4-TRICHLOROBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1,1-TRICHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,1,2-TRICHLOROETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TRICHLOROETHENE (TCE)	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
TRICHLOROFLUOROMETHANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2,3-TRICHLOROPROPANE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,2,4-TRIMETHYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
1,3,5-TRIMETHYLBENZENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
VINYL CHLORIDE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
O-XYLENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
M,P-XYLENE	8260B	µg/kg	5	<6.0	<4.7	<4.5	<4.6
ORGANOCHLORINE PESTICIDES							
Dilution Factor				1	1	1	1
ALDRIN	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
BETA BHC	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
ALPHA BHC	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
DELTA BHC	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
GAMMA BHC (LINDANE)	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
ALPHA-CHLORDANE	8081A	µg/kg	1	<1.1	<1.1	0.3J	0.4J
GAMMA-CHLORDANE	8081A	µg/kg	1	<1.1	<1.1	0.2J	0.3J
P,P'-DDD	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
P,P'-DDE	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
P,P'-DDT	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
DIELDRIN	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
ALPHA ENDOSULFAN	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
BETA ENDOSULFAN	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
ENDOSULFAN SULFATE	8081A	µg/kg	5	<5.3	<5.3	<5.5	<5.4
ENDRIN	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
ENDRIN ALDEHYDE	8081A	µg/kg	3	<3.2	<3.2	<3.3	<3.3
ENDRIN KETONE	8081A	µg/kg	2	<2.1	<2.1	<2.2	<2.2
HEPTACHLOR	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
HEPTACHLOR EPOXIDE	8081A	µg/kg	1.7	<1.8	<1.8	<1.9	<1.8
METHOXYCHLOR	8081A	µg/kg	10	<11	<11	<11	<11
TOXAPHENE	8081A	µg/kg	100	<110	<110	<110	<110

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-1 02-06564-1	QC-1 02-06564-2	SS-3 02-06564-3	SS-4 02-06564-4
PCBS							
Dilution Factor				1	1	1	1
PCB-1016 (AROCLOR 1016)	8082	µg/kg	33	<35	<35	<36	<36
PCB-1221 (AROCLOR 1221)	8082	µg/kg	66	<70	<70	<73	<72
PCB-1232 (AROCLOR 1232)	8082	µg/kg	33	<35	<35	<36	<36
PCB-1242 (AROCLOR 1242)	8082	µg/kg	33	<35	<35	<36	<36
PCB-1248 (AROCLOR 1248)	8082	µg/kg	33	<35	<35	<36	<36
PCB-1254 (AROCLOR 1254)	8082	µg/kg	33	<35	<35	<36	<36
PCB-1260 (AROCLOR 1260)	8082	µg/kg	33	<35	<35	<36	<36

Component Analyzed	Method	Unit	PQL	Analysis Result BG-1 02-06564-1
TCLP METAL				
Dilution Factor				2
ARSENIC	6010B	µg/L	5	<10
BARIUM	6010B	µg/L	10	230
CADMIUM	6010B	µg/L	2	<4
CHROMIUM	6010B	µg/L	5	2.6J
LEAD	6010B	µg/L	5	6.3J
Dilution Factor				1
MERCURY	7470A	µg/L	0.5	0.30J
Dilution Factor				2
SELENIUM	6010B	µg/L	10	<20
SILVER	6010B	µg/L	10	1.7J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
† All results are reported on dry basis for soil samples.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Lowers Lakes/02HW013

For SOTA Environmental

APCL Service No: 02-6564

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
SS-3	02-06564-3
SS-4	02-06564-4
QC-1	02-06564-2
BG-1	02-06564-1

2. Analytical Methodology

Samples are analyzed by EPA methods

8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
8081A (Organochlorine pesticides),
8082 (PCBs),
314.0 (Perchlorate, low level),
6010B/7470A (Priority Pollutant Metals (CWA) (13)),
6010B (TCLP metal, EPA Primary List),
ASTM-D2216 (Moisture, percent in soil),
9040B (pH),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613 Tel:
(858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013
Please Print in pen

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)		Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)					Remarks
SS-3	3 Ft depth	12/11/02	7:45	Soil	5	6	Encore-5g	x	x											
	Concrete below		7:45																	
SS-3	Fill		8:00	Soil	5	2	StainlessSteel Sleeve				x	x								
SS-3	Material		8:00	Soil	5	2	StainlessSteel Sleeve						x	x						
SS-3			8:00	Soil	5	1	StainlessSteel Sleeve								x					
SS-4	3 Ft deep	12/11/02	9:10	Soil	5	6	Encore-5g	x	x											
SS-4	Fill		9:20	Soil	5	2	StainlessSteel Sleeve				x	x								
SS-4			9:30	Soil	5	2	StainlessSteel Sleeve						x	x						
SS-4	Material		9:40	Soil	5	1	StainlessSteel Sleeve								x					

6564

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other_____, 7 Not Preserved

Temperature: ___ Degrees C

Relinquished by: _____ Date/Time 12/11/02 1825 Received by: _____ Date/Time 12/11/02 1825

Relinquished by: _____ Date/Time 12/11/02 1950 Received by: _____ Date/Time 12/12/02 0820

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please
Print in pen Page 7 of 7

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	TCLP Metal (6010)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Remarks
QC-1	Fill	12/11/02	8:15	Soil	5	6	Encore-5g	x	x							
	Material	12/11/02														
QC-1		12/11/02	8:30	Soil	5	2	StainlessSteel Sleeve				x	x				
QC-1		12/11/02	8:35	Soil	5	2	StainlessSteel Sleeve						x	x		
QC-1		12/11/02	8:40	Soil	5	1	StainlessSteel Sleeve								x	
BG-1	4 ft. bgs	12/4	10:00	Soil	5	6	Encore-5g	x	x							6564
BG-1	Fine Sand	12/4	10:10	soil	5	1	stainless steel sleeve			x						
BG-1	w/ Silt	12/4	10:15	Soil	5	2	StainlessSteel Sleeve				x	x				
BG-1		12/4	10:20	Soil	5	2	StainlessSteel Sleeve						x	x		
BG-1		12/4	10:30	Soil	5	1	StainlessSteel Sleeve								x	

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO3, 3 H2SO4, 4 NaOH, 5 Ice Only, 6 Other_Na2S2O8__, 7 Not Preserved

Temperature: _____ Degrees C

Relinquished by: _____ Date/Time 12/11/02 1825 Received by: _____ Date/Time 12/11/02 1825

Relinquished by: _____ Date/Time 12/11/02 1950 Received by: _____ Date/Time 12/12/02 0800

Air Bill Number:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 6564 Client Name/Project: Sota Environmental / Lowers Lakes

1. Sample Arrival

Date/Time Received 12/12/02 0820A Date/Time Opened 12/12/02 0820A By (name): Kenny Chan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☒ APCL Empl: Adam Wood

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By:_____
☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received 4
☒ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☒ #Samples OK? _____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): _____

3. Shipping Container/Cooler

☒ Cooler Used? # of 1 Cooled by: ☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
Temp °C 3.5
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? ☐ Absent ☒ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12
If Not, pH = _____ Preserved by: ☐ Client ☐ APCL ☐ Third Party _____

5. Holding-time Requirements

☐ pH 24hr ☐ BACT 6/24hr ☐ Cr^{VI} 24hr ☐ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number: _____
Type: ☒ Plastic ☒ Glass ☒ Tube: brass/SS ☐ Tedlar Bag
☒ Quantity OK? ☐ Leaking? ☐ Anomaly?
☒ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☒ Unique ID? ☒ Date/Time ☐ Preserved?

7. Turn Around Time

☐ RUSH TAT: _____ ☒ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☐ Other Liq ☒ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: _____
☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☒ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:_____)Date/Time:_____

Received/Checked by: _____ Date: 11 Dec 2002 Time: 7:37 a.m.

1 Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

02-06564 (1288_ 431) (4858100_ 431)

12/12/02

Part 1: General Information

☐	Company Information	Name:	*SOTA Environmental*
		Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
☐	Project Information	Project Description:	*Lowers Lakes*
		Project #:	*02HW013*
☐	Billing Information	P.O. #:	
		Bill Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
		Lab Project ID:	
		Client Database #:	*0*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*12/12/02 0820*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.5 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	SS-3	Encore	02-06564-3-α	S	P		5	6	G	121102	N	0	7	☐
	SS-3	Sleeve	02-06564-3-β	S	B		250	5	G	121102	N	0	7	☐
2	SS-4	Encore	02-06564-4-α	S	P		5	6	G	121102	N	0	7	☐
	SS-4	Sleeve	02-06564-4-β	S	B		250	5	G	121102	N	0	7	☐
3	QC-1	Encore	02-06564-2-α	S	P		5	6	G	121102	N	0	7	☐
	QC-1	Sleeve	02-06564-2-β	S	B		250	5	G	121102	N	0	7	☐
4	BG-1	Encore	02-06564-1-α	S	P		5	6	G	121102	N	0	7	☐
	BG-1	Sleeve	02-06564-1-β	S	B		250	6	G	121102	N	0	7	☐

Part 3: Analysis Information

Test Items:

- ☑ *8260B* Volatile organics
- ☐ *M8015V/M8015G* Gasoline
- ☐ *M8015E/M8015D* TPH: Diesel
- ☐ *M8015E/M8015M* TPH: Motor Oil
- ☑ *8081A* Organochlorine pesticides
- ☑ *8082* PCBs
- ☑ *314.0/300.0* Perchlorate, low level
- ☑ *6010B/7000A* Priority Pollutant Metals (CWA) (13)
- ☑ *6010B* TCLP metal, EPA Primary List
- ☐ *ASTM-D2216* Moisture, percent in soil
- ☐ *9040B/150.1* pH

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	8260	TPH	TPH	TPH	8081	8082	PERCHL	METALS	
1	SS-3	Encore	02-06564-3-α	S	X	X							☐
	SS-3	Sleeve	02-06564-3-β	S			X	X	X	X	X	X	☐
2	SS-4	Encore	02-06564-4-α	S	X	X							☐
	SS-4	Sleeve	02-06564-4-β	S			X	X	X	X	X	X	☐
3	QC-1	Encore	02-06564-2-α	S	X	X							☐
	QC-1	Sleeve	02-06564-2-β	S			X	X	X	X	X	X	☐
4	BG-1	Encore	02-06564-1-α	S	X	X							☐
	BG-1	Sleeve	02-06564-1-β	S			X	X	X	X	X	X	☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	TCLP TCLP	MOISTURE	pH	
1	SS-3	Encore	02-06564-3-α	S		X	X	☐

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

May 2, 2003

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 02-6571 and your project is 02HW013 Lowers Lakes. Enclosed please find:

(1) One copy of analytical report.
(2) One copy of Chain of Custody.
(3) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026571
Collected by: MES/DM.
Collected on: 12/11/02

Received: 12/12/02
Extracted: 12/13-16/02
Tested: 12/12-20/02
Reported: 01/02/03

Sample Description: Water
Project Description: 02HW013 Lowers lakes

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result QC-2 02-06571-1	SW-1-1 02-06571-2	SW-1-2 02-06571-3	SW-1-3 02-06571-4
BIOLOGICAL OXYGEN DEMAND (BOD)	405.1	mg-O_2/L	2	-	0.84J	1.2J	1.1J
CHLORIDE CL^-	325.3	mg/L	1	-	33.5	29.0	32.0
NITRATE (NO_3^-) AS N	353.3	mg/L	0.1	-	1.2	1.2	1.0
NITRITE (NO_2^-) AS N	354.1	mg/L	0.02	-	0.017J	0.017J	0.017J
PH	9040B	pH unit	0.01	-	7.86	7.80	7.84
SOLIDS, SETTLEABLE (SS)	160.5	mL/L-hr	0.2	-	<0.2	<0.2	<0.2
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	-	317	309	311
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	mg/L	4	-	12.0	10.0	9.0
SULFATE (SO_4^{--})	375.4	mg/L	2	-	70.5	62.2	63.3
SULFIDE, DISSOLVED	376.2	mg/L	0.2	-	<0.2	<0.2	<0.2
TOTAL COLIFORM, MTF, 3X5 TUBES	SM9221B	MPN/100mL	2	-	90.0	50.0	140
FECAL COLIFORM, MTF, 3X5 TUBES	SM9221E	MPN/100mL	2	-	90.0	50.0	140
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	-	<4	<4	<4
PRIORITY POLLUTANT METALS (CWA) (13)							
Dilution Factor				1	1	1	1
ANTIMONY	6010B	µg/L	10	<10	<10	<10	<10
ARSENIC	6010B	µg/L	5	2.9J	<5	<5	2.3J
BERYLLIUM	6010B	µg/L	2	<2	<2	<2	<2
CADMIUM	6010B	µg/L	2	<2	<2	<2	<2
CHROMIUM	6010B	µg/L	5	2.8J	4.2J	2.9J	0.68J
COPPER	6010B	µg/L	10	2.8J	2.6J	2.1J	1.2J
LEAD	6010B	µg/L	5	<5	0.75J	<5	<5
MERCURY	7470A	µg/L	0.5	<0.5	<0.5	<0.5	0.17J
NICKEL	6010B	µg/L	5	2.6J	8.3	1.8J	0.86J
SELENIUM	6010B	µg/L	10	<10	<10	4.4J	<10
SILVER	6010B	µg/L	10	0.53J	<10	<10	<10
THALLIUM	6010B	µg/L	10	3.3J	3.6J	2.4J	3.5J
ZINC	6010B	µg/L	10	67.7	73.7	53.2	12.4
Dilution Factor				1	1	1	1
PHC AS GASOLINE	M8015V	mg/L	0.05	0.03J	0.02J	0.02J	0.02J
Dilution Factor				0.96	0.96	0.96	0.96
PHC AS DIESEL FUEL	M8015E	mg/L	0.5	<0.48	<0.48	<0.48	<0.48
Dilution Factor				0.96	0.96	0.96	0.96
MOTOR OILS	M8015E	mg/L	0.5	<0.48	<0.48	0.04J	0.03J

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-2 02-06571-1	SW-1-1 02-06571-2	SW-1-2 02-06571-3	SW-1-3 02-06571-4
VOLATILE ORGANICS							
Dilution Factor				1	1	1	1
ACETONE	8260B	µg/L	50	<50	<50	<50	<50
BENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5	<5

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-2 02-06571-1	SW-1-1 02-06571-2	SW-1-2 02-06571-3	SW-1-3 02-06571-4
METHYLENE CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ISOBUTYL KETONE	8260B	µg/L	50	<50	<50	<50	<50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
ORGANOCHLORINE PESTICIDES							
Dilution Factor				0.96	0.96	0.96	0.96
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	<4.8	<4.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result QC-2 02-06571-1	SW-1-1 02-06571-2	SW-1-2 02-06571-3	SW-1-3 02-06571-4
PCBS							
Dilution Factor				0.96	0.96	0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96

Component Analyzed	Method	Unit	PQL	Analysis Result SW-2-1 02-06571-5	SW-2-2 02-06571-6	SW-3-1 02-06571-7	SW-3-2 02-06571-8
BIOLOGICAL OXYGEN DEMAND (BOD)	405.1	mg-O_2/L	2	1.2J	0.90J	0.89J	1.0J
CHLORIDE CL^-	325.3	mg/L	1	29.5	31.0	33.0	31.5
NITRATE (NO_3^-) AS N	353.3	mg/L	0.1	1.1	1.1	1.1	1.1
NITRITE (NO_2^-) AS N	354.1	mg/L	0.02	0.017J	0.017J	0.017J	0.016J
PH	9040B	pH unit	0.01	7.68	7.78	7.86	7.85
SOLIDS, SETTLEABLE (SS)	160.5	mL/L-hr	0.2	<0.2	<0.2	<0.2	<0.2
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	322	323	333	312
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	mg/L	4	10.0	9.0	11.0	6.0
SULFATE (SO_4^{--})	375.4	mg/L	2	49.8	53.4	65.4	65.7
SULFIDE, DISSOLVED	376.2	mg/L	0.2	<0.2	<0.2	<0.2	<0.2
TOTAL COLIFORM, MTF, 3X5 TUBES	SM9221B	MPN/100mL	2	80.0	300	50.0	50.0
FECAL COLIFORM, MTF, 3X5 TUBES	SM9221E	MPN/100mL	2	23.0	50.0	50.0	30.0
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4	<4
PRIORITY POLLUTANT METALS (CWA) (13)							
Dilution Factor				1	1	1	1
ANTIMONY	6010B	µg/L	10	<10	3.5J	<10	<10
ARSENIC	6010B	µg/L	5	<5	2.3J	<5	3.2J
BERYLLIUM	6010B	µg/L	2	<2	<2	<2	<2
CADMIUM	6010B	µg/L	2	<2	<2	<2	<2
CHROMIUM	6010B	µg/L	5	3.3J	<5	4.8J	1.0J
COPPER	6010B	µg/L	10	1.9J	1.0J	1.2J	1.6J
LEAD	6010B	µg/L	5	0.96J	<5	0.79J	<5
MERCURY	7470A	µg/L	0.5	0.14J	0.13J	<0.5	0.19J
NICKEL	6010B	µg/L	5	3.4J	<5	4.1J	2.2J
SELENIUM	6010B	µg/L	10	<10	3.1J	<10	<10
SILVER	6010B	µg/L	10	<10	<10	0.51J	<10
THALLIUM	6010B	µg/L	10	3.1J	3.0J	2.3J	4.3J
ZINC	6010B	µg/L	10	41.7	25.5	51.5	24.3
Dilution Factor				1	1	1	1
PHC AS GASOLINE	M8015V	mg/L	0.05	0.03J	0.02J	0.02J	0.02J
Dilution Factor				0.96	0.96	0.96	0.96
PHC AS DIESEL FUEL	M8015E	mg/L	0.5	<0.48	<0.48	<0.48	<0.48
Dilution Factor				0.96	0.96	0.96	0.96
MOTOR OILS	M8015E	mg/L	0.5	<0.48	<0.48	<0.48	<0.48

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Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-2-1 02-06571-5	SW-2-2 02-06571-6	SW-3-1 02-06571-7	SW-3-2 02-06571-8
VOLATILE ORGANICS							
Dilution Factor				1	1	1	1
ACETONE	8260B	µg/L	50	<50	<50	9J	<50
BENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5	<5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-2-1 02-06571-5	SW-2-2 02-06571-6	SW-3-1 02-06571-7	SW-3-2 02-06571-8
METHYLENE CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
METHYL ISOBUTYL KETONE	8260B	µg/L	50	<50	<50	<50	<50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	5	<5	<5	<5	<5
ORGANOCHLORINE PESTICIDES							
Dilution Factor				0.96	0.96	0.96	0.96
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	<4.8	<4.8

Applied P & Ch Laboratory
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Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SW-2-1 02-06571-5	SW-2-2 02-06571-6	SW-3-1 02-06571-7	SW-3-2 02-06571-8
PCBS							
Dilution Factor				0.96	0.96	0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	<0.96	<0.96

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Lowers lakes/02HW013

For SOTA Environmental

APCL Service No: 02-6571

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
SW-1-1	02-06571-2
SW-1-2	02-06571-3
SW-1-3	02-06571-4
SW-2-1	02-06571-5
SW-2-2	02-06571-6
SW-3-1	02-06571-7
SW-3-2	02-06571-8
QC-2	02-06571-1

2. Analytical Methodology

Samples are analyzed by EPA methods

8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
8081A (Organochlorine pesticides),
8082 (PCBs),
314.0 (Perchlorate, low level),
6010B/7470A (Priority Pollutant Metals (CWA) (13)),
376.1 (Sulfide, Dissolved),
405.1 (Biological Oxygen Demand (BOD)),
375.4 (Sulfate (SO_4^{--})),
325.3 (Chloride Cl^-),
160.1 (Solids, Total Dissolved (TDS)),
160.2 (Solids, Total Suspended (TSS)),
160.5 (Solids, Settleable (SS)),
9040B (pH),
SM9221B (Total Coliform, MTF, 3X5 tubes),
SM9221E (Fecal Coliform, MTF, 3X5 tubes),
353.3 (Nitrate (NO_3^-) as N Cd reduction),
354.1 (Nitrite (NO_2^-) as N),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100
Fax: (858) 485-0812

Chain of Custody

02HW013 Please Print in pen

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4) Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-1-1	2' BELOW SURFACE	12/11/02	0853	Water	1	6	40-mL VOA	x	x											
SW-1-1				Water	5	3	1-L Amber Glass			x	x	x								
SW-1-1				Water	5	1	125-mL Poly						x							
SW-1-1				Water	5	2	1-L Poly							x					x	
SW-1-1				Water	3	1	500 mL Poly, pH<2								x					
SW-1-1				Water	4	1	250-mL pH>12									x				
SW-1-1				Water	5	1	500-mL Poly										x			
SW-1-1				Water	6	1	100 mL Sterilized Poly											x		
SW-1-2	3.5' BELOW SURFACE	12/11/02	0929	Water	1	6	40-mL VOA	x	x											
SW-1-2				Water	5	3	1-L Amber Glass			x	x	x								
SW-1-2				Water	5	1	125-mL Poly						x							
SW-1-2				Water	5	2	1-L Poly							x					x	
SW-1-2				Water	3	1	500 mL Poly, pH<2								x					
SW-1-2				Water	4	1	250-mL pH>12									x				
SW-1-2				Water	5	1	500-mL Poly										x			
SW-1-2				Water	6	1	100 mL Sterilized Poly											x		

Analysis Items

6571

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: [signature] Date/Time 12/11/02 1825 Received by: [signature] Date/Time 12/11/02 1825

Relinquished by: [signature] Date/Time 12/11/02 1950 Received by: [signature] Date/Time 12/12/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please Print in pen Page 2 of 7

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	TCLP Metals (TCLP/6010)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
QC-2		12/11/02	0853	WATER	HCl	6	40 ml VOA	X	X													
"		"	"	"	5	3	1-L AMBER GLASS				X	X	X									
"		"	"	"	5	1	1-L POLY								X							

6571

Analysis Items

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: _____ Date/Time 12/11/02 1825 Received by: _____ Date/Time 12/11/02 1825

Relinquished by: _____ Date/Time 12/11/02 1950 Received by: _____ Date/Time 12/12/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc. 16835 W. Bernardo Drive, Suite 212 San Diego, CA 92127-1613 Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please Print in pen

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-1-3	3" BELOW SURFACE	12/11/02	0956	Water	1	6	40-mL VOA	x	x												
SW-1-3				Water	5	3	1-L Amber Glass				x	x	x								
SW-1-3				Water	5	1	125-mL Poly							x							
SW-1-3				Water	5	2	1-L Poly								x						x
SW-1-3				Water	3	1	500 mL Poly, pH<2									x					
SW-1-3				Water	4	1	250-mL pH>12										x				
SW-1-3				Water	5	1	500-mL Poly											x			
SW-1-3				Water	6	1	100 mL Sterilized Poly												x		
SW-2-1	3' BELOW SURFACE	12/11/02	1115	Water	1	6	40-mL VOA	x	x												
SW-2-1				Water	5	3	1-L Amber Glass				x	x	x								
SW-2-1				Water	5	1	125-mL Poly							x							
SW-2-1				Water	5	2	1-L Poly								x						x
SW-2-1				Water	3	1	500 mL Poly, pH<2									x					
SW-2-1				Water	4	1	250-mL pH>12										x				
SW-2-1				Water	5	1	500-mL Poly											x			
SW-2-1				Water	6	1	100 mL Sterilized Poly												x		

6571

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: Date/Time 12/11/02 1825 Received by: Date/Time 12/11/02 1825

Relinquished by: Date/Time 12/11/02 1950 Received by: Date/Time 12/12/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.
SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013
Please Print in pen

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preser-vative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-2-2	3" BELOW SURFACE	12/11/02	1141	Water	1	6	40-mL VOA	x	x												
SW-2-2				Water	5	3	1-L Amber Glass			x	x	x									
SW-2-2				Water	5	1	125-mL Poly						x								
SW-2-2				Water	5	2	1-L Poly							x						x	
SW-2-2				Water	3	1	500 mL Poly, pH<2								x						
SW-2-2				Water	4	1	250-mL pH>12									x					
SW-2-2				Water	5	1	500-mL Poly										x				
SW-2-2				Water	6	1	100 mL Sterilized Poly											x			
~~SW-2-3~~				Water	1	6	40-mL VOA	x	x												
SW-2-3				Water	5	3	1-L Amber Glass			x	x	x									
SW-2-3				Water	5	1	~~125-mL Poly~~						x								
SW-2-3				Water	5	2	1-L Poly							x						x	
SW-2-3				Water	3	1	500 mL Poly, pH<2								x						
SW-2-3				Water	4	1	250-mL pH>12									x					
SW-2-3				Water	5	1	500-mL Poly										x				
~~SW-2-3~~				Water	6	1	100 mL Sterilized Poly											x			

6571

NO SAMPLE

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other $Na_2S_2O_8$, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: _____ Date/Time 12/11/02 1825 Received by: _____ Date/Time 12/11/02 1825

Relinquished by: _____ Date/Time 12/11/02 1950 Received by: _____ Date/Time 12/12/02 0830

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc. 16835 W. Bernardo Drive, Suite 212 San Diego, CA 92127-1613 Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013 Please Print in pen Page 5 of 7

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES/DM

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	Remarks
SW-3-1	3' BELOW SURFACE	12/11/02	1327	Water	1	6	40-mL VOA	x	x												
SW-3-1				Water	5	3	1-L Amber Glass			x	x	x									
SW-3-1				Water	5	1	125-mL Poly						x								
SW-3-1				Water	5	2	1-L Poly							x						x	
SW-3-1				Water	3	1	500 mL Poly, pH<2								x						
SW-3-1				Water	4	1	250-mL pH>12									x					
SW-3-1				Water	5	1	500-mL Poly										x				
SW-3-1				Water	6	1	100 mL Sterilized Poly											x			6571
SW-3-2	3" BELOW SURFACE	12/11/02	1356	Water	1	6	40-mL VOA	x	x												
SW-3-2				Water	5	3	1-L Amber Glass			x	x	x									
SW-3-2				Water	5	1	125-mL Poly						x								
SW-3-2				Water	5	2	1-L Poly							x						x	
SW-3-2				Water	3	1	500 mL Poly, pH<2								x						
SW-3-2				Water	4	1	250-mL pH>12									x					
SW-3-2				Water	5	1	500-mL Poly										x				
SW-3-2				Water	6	1	100 mL Sterilized Poly											x			

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: _____ Date/Time 12/11/02 1825 Received by: _____ Date/Time 12/11/02 1829

Relinquished by: _____ Date/Time 12/11/02 1950 Received by: _____ Date/Time 12/12/02 0830

Air Bill Number:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 6571 Client Name/Project: Sota Lowers Lakes

1. Sample Arrival

Date/Time Received 12/12/02 0820A Date/Time Opened 12/12/02 0820A By (name): Kenny Chan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☒ APCL Empl: Adam Wood

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By: _____

☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received 8

☒ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☒ #Samples OK? _____

☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): _____

3. Shipping Container/Cooler

☒ Cooler Used? #of 4 Cooled by: ☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Temp °C 3.8 4.0 3.7 4.2 _____ _____

(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).

Cooler Custody Seal? ☐ Absent ☒ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12

If Not, pH = _____ Preserved by: ☐ Client ☐ APCL ☐ Third Party _____

5. Holding-time Requirements

☒ pH 24hr ☒ BACT 6/24hr ☐ Cr^{VI} 24hr ☐ NO_3^- 48hr ☒ BOD 48hr

☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP

☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number: _____

Type: ☒ plastic ☒ glass ☐ Tube: brass/SS ☐ Tedlar Bag

☒ Quantity OK? ☐ Leaking? ☐ Anomaly?

☒ Caps tight? ☐ Air Bubbles? ☐ Anomaly?

Labels: ☒ Unique ID? ☒ Date/Time ☐ Preserved?

7. Turn Around Time

☐ RUSH TAT: _____ ☒ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☒ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: _____

☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☒ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:_____)Date/Time:_____

Received/Checked by: Kenny Chan Date: 11 Dec 2002 Time: 7:37a.m.

Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List 2nd

02-06571 (1288_ 433) (4858100_ 433)

12/16/02

Part 1: General Information

☐	Company Information	Name:	*SOTA Environmental*
		Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
☐	Project Information	Project Description:	*Lowers lakes*
		Project #:	*02HW013*
☐	Billing Information	P.O. #:	
		Bill Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
		Lab Project ID:	
		Client Database #:	*0*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*12/12/02 0820*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.8 4.0 3.7 4.2 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	SW-1-1	VOC/Gas	02-06571-2-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-1-1	8015	02-06571-2-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-1	8081	02-06571-2-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-1	8082	02-06571-2-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-1	PH/SS	02-06571-2-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-1-1	Perch	02-06571-2-η	W	P		125	1	G	121102	N	0	7	☐
	SW-1-1	Metal	02-06571-2-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-1-1	NO3/NO2	02-06571-2-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-1-1	DSulfide	02-06571-2-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-1-1	BOD	02-06571-2-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-1-1	Colif	02-06571-2-ν	W	P	T	120	1	G	121102	N	0	7	☐
2	SW-1-2	VOC/Gas	02-06571-3-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-1-2	8015	02-06571-3-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-2	8081	02-06571-3-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-2	8082	02-06571-3-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-2	PH/SS	02-06571-3-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-1-2	Perch	02-06571-3-η	W	P		125	1	G	121102	N	0	7	☐
	SW-1-2	Metal	02-06571-3-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-1-2	NO3/NO2	02-06571-3-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-1-2	DSulfide	02-06571-3-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-1-2	BOD	02-06571-3-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-1-2	Colif	02-06571-3-ν	W	P	T	120	1	G	121102	N	0	7	☐
3	SW-1-3	VOC/Gas	02-06571-4-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-1-3	8015	02-06571-4-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-3	8081	02-06571-4-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-3	8082	02-06571-4-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-1-3	PH/SS	02-06571-4-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-1-3	Perch	02-06571-4-η	W	P		125	1	G	121102	N	0	7	☐
	SW-1-3	Metal	02-06571-4-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-1-3	NO3/NO2	02-06571-4-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-1-3	DSulfide	02-06571-4-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-1-3	BOD	02-06571-4-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-1-3	Colif	02-06571-4-ν	W	P	T	120	1	G	121102	N	0	7	☐
4	SW-2-1	VOC/Gas	02-06571-5-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-2-1	8015	02-06571-5-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-1	8081	02-06571-5-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-1	8082	02-06571-5-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-1	PH/SS	02-06571-5-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-2-1	Perch	02-06571-5-η	W	P		125	1	G	121102	N	0	7	☐
	SW-2-1	Metal	02-06571-5-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-2-1	NO3/NO2	02-06571-5-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-2-1	DSulfide	02-06571-5-κ	W	P	B	250	1	G	121102	N	0	7	☐

	SW-2-1	BOD	02-06571-5-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-2-1	Colif	02-06571-5-ν	W	P	T	120	1	G	121102	N	0	7	☐
5	SW-2-2	VOC/Gas	02-06571-6-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-2-2	8015	02-06571-6-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-2	8081	02-06571-6-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-2	8082	02-06571-6-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-2-2	PH/SS	02-06571-6-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-2-2	Perch	02-06571-6-η	W	P		125	1	G	121102	N	0	7	☐
	SW-2-2	Metal	02-06571-6-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-2-2	NO3/NO2	02-06571-6-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-2-2	DSulfide	02-06571-6-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-2-2	BOD	02-06571-6-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-2-2	Colif	02-06571-6-ν	W	P	T	120	1	G	121102	N	0	7	☐
6	SW-3-1	VOC/Gas	02-06571-7-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-3-1	8015	02-06571-7-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-1	8081	02-06571-7-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-1	8082	02-06571-7-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-1	PH/SS	02-06571-7-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-3-1	Perch	02-06571-7-η	W	P		125	1	G	121102	N	0	7	☐
	SW-3-1	Metal	02-06571-7-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-3-1	NO3/NO2	02-06571-7-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-3-1	DSulfide	02-06571-7-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-3-1	BOD	02-06571-7-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-3-1	Colif	02-06571-7-ν	W	P	T	120	1	G	121102	N	0	7	☐
7	SW-3-2	VOC/Gas	02-06571-8-α	W	V	C	40	6	G	121102	N	0	7	☐
	SW-3-2	8015	02-06571-8-β	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-2	8081	02-06571-8-γ	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-2	8082	02-06571-8-δ	W	G		1000	1	G	121102	N	0	7	☐
	SW-3-2	PH/SS	02-06571-8-ζ	W	P		1000	1	G	121102	N	0	7	☐
	SW-3-2	Perch	02-06571-8-η	W	P		125	1	G	121102	N	0	7	☐
	SW-3-2	Metal	02-06571-8-θ	W	P	N	1000	1	G	121102	N	0	7	☐
	SW-3-2	NO3/NO2	02-06571-8-ι	W	P	S	500	1	G	121102	N	0	7	☐
	SW-3-2	DSulfide	02-06571-8-κ	W	P	B	250	1	G	121102	N	0	7	☐
	SW-3-2	BOD	02-06571-8-μ	W	P		500	1	G	121102	N	0	7	☐
	SW-3-2	Colif	02-06571-8-ν	W	P	T	120	1	G	121102	N	0	7	☐
8	QC-2	VOC/Gas	02-06571-1-α	W	V	C	40	6	G	121102	N	0	7	☐
	QC-2	8015	02-06571-1-β	W	G		1000	1	G	121102	N	0	7	☐
	QC-2	8081	02-06571-1-γ	W	G		1000	1	G	121102	N	0	7	☐
	QC-2	8082	02-06571-1-δ	W	G		1000	1	G	121102	N	0	7	☐
	QC-2	Metal	02-06571-1-ζ	W	P	N	1000	1	G	121102	N	0	7	☐

Part 3: Analysis Information

Test Items:

☐ *8260B* Volatile organics

☐ *M8015V/M8015G* Gasoline

☐ *M8015E/M8015D* TPH: Diesel

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

April 28, 2003

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 03-2419 and your project is 02HW013 Lower Lakes HD FCB. Enclosed please find:

(1) One original report.
(2) One original Chain of Custody.
(3) One diskette containing EDD Deliverable.
(4) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-032419
Collected by: MES
Collected on: 03/25/03

Received: 03/26/03
Extracted: 03/26-04/04/03
Tested: 03/27-04/04/03
Revised: 04/24/03

Sample Description: Soil
Project Description: 02HW013 Lower Lakes, HD FCB.

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result SD-1 03-02419-1	Analysis Result SD-2 03-02419-2
MOISTURE, PERCENT	D2216	%Moisture	0.5	18.7	6.0
Dilution Factor				1	1
CHROMIUM (VI) [a]	7199	µg/kg	5	<6.2	<5.3
Dilution Factor				1	1
PERCHLORATE [a]	314.0	µg/kg	20	<25	<21
PRIORITY POLLUTANT METALS (CWA) (13)					
Dilution Factor				1	1
ANTIMONY	6010B	mg/kg	5	<6.2	<5.3
ARSENIC	6010B	mg/kg	0.3	0.66	0.49
BERYLLIUM	6010B	mg/kg	0.2	<0.25	<0.21
CADMIUM	6010B	mg/kg	0.2	<0.25	<0.21
CHROMIUM	6010B	mg/kg	0.5	10.1	10.0
COPPER	6010B	mg/kg	0.5	6.7	8.3
LEAD	6010B	mg/kg	0.3	2.5	2.2
MERCURY	7471A	mg/kg	0.2	0.041J	0.025J
NICKEL	6010B	mg/kg	0.3	4.4	6.2
SELENIUM	6010B	mg/kg	0.5	<0.62	<0.53
SILVER	6010B	mg/kg	0.5	0.046J	<0.53
THALLIUM	6010B	mg/kg	0.5	<0.62	<0.53
ZINC	6010B	mg/kg	0.5	17.2	17.4
Dilution Factor				0.97	1.19
PHC AS GASOLINE	M8015V	mg/kg	1	<1.2	<1.3
Dilution Factor				1	1
PHC AS DIESEL FUEL	M8015E	mg/kg	10	<12	<11
Dilution Factor				1	1
MOTOR OILS	M8015E	mg/kg	10	<12	<11

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-1 03-02419-1	SD-2 03-02419-2
VOLATILE ORGANICS BY SW5030/SW8260B					
Dilution Factor				0.96	1.08
BENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
BROMOBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
BROMOFORM	SW8260B	µg/kg	5	< 5.9	< 5.7
BROMOMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
2-BUTANONE	SW8260B	µg/kg	20	< 24	< 23
N-BUTYLBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	< 5.9	< 5.7
CHLOROBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
CHLORODIBROMOMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
CHLOROETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
CHLOROFORM	SW8260B	µg/kg	5	< 5.9	< 5.7
CHLOROMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
2-CHLOROTOLUENE	SW8260B	µg/kg	5	< 5.9	< 5.7
4-CHLOROTOLUENE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,2-DIBROMOETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
DIBROMOMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	< 5.9	< 5.7
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	< 5.9	< 5.7
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	< 5.9	< 5.7
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	< 5.9	< 5.7
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	< 5.9	< 5.7
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	< 5.9	< 5.7
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	< 5.9	< 5.7
ETHYLBENZENE	SW8260B	µg/kg	5	< 5.9	< 5.7
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	< 5.9	< 5.7
2-HEXANONE	SW8260B	µg/kg	20	< 24	< 23
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	< 5.9	< 5.7
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	< 5.9	< 5.7
METHYLENE CHLORIDE	SW8260B	µg/kg	5	< 5.9	< 5.7
4-METHYL-2-PENTANONE	SW8260B	µg/kg	20	< 24	< 23
METHYL-TERT-BUTYL-ETHER (MTBE)	SW8260B	µg/kg	5	< 5.9	< 5.7

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-1 03-02419-1	SD-2 03-02419-2
NAPHTHALENE	SW8260B	µg/kg	5	<5.9	<5.7
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.9	<5.7
STYRENE	SW8260B	µg/kg	5	<5.9	<5.7
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.9	<5.7
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.9	<5.7
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.9	<5.7
TOLUENE	SW8260B	µg/kg	5	<5.9	<5.7
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.9	<5.7
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.9	<5.7
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.9	<5.7
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.9	<5.7
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.9	<5.7
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.9	<5.7
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.9	<5.7
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.9	<5.7
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.9	<5.7
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.9	<5.7
XYLENES (TOTAL)	SW8260B	µg/kg	5	<5.9	<5.7
TERT BUTYL ALCOHOL (TBA)	SW8260B	µg/kg	20	<24	<23
DIISOPROPYL ETHER(DIPE)	SW8260B	µg/kg	5	<5.9	<5.7
ETHYL TERT BUTYL ETHER (ETBE)	SW8260B	µg/kg	5	<5.9	<5.7
TERT AMYL METHYL ETHER (TAME)	SW8260B	µg/kg	5	<5.9	<5.7
Dilution Factor				1	1
1,4-DIOXANE	8270-SIM	µg/kg	33	<41	<35
ORGANOCHLORINE PESTICIDES					
Dilution Factor				1	1
ALDRIN	8081A	µg/kg	1	<1.2	<1.1
BETA BHC	8081A	µg/kg	1	<1.2	<1.1
ALPHA BHC	8081A	µg/kg	1	<1.2	<1.1
DELTA BHC	8081A	µg/kg	1	<1.2	<1.1
GAMMA BHC (LINDANE)	8081A	µg/kg	1	<1.2	<1.1
ALPHA-CHLORDANE	8081A	µg/kg	1	<1.2	<1.1
GAMMA-CHLORDANE	8081A	µg/kg	1	<1.2	<1.1
P,P'-DDD	8081A	µg/kg	2	<2.5	<2.1
P,P'-DDE	8081A	µg/kg	2	<2.5	<2.1
P,P'-DDT	8081A	µg/kg	2	<2.5	<2.1
DIELDRIN	8081A	µg/kg	2	<2.5	<2.1
ALPHA ENDOSULFAN	8081A	µg/kg	1	<1.2	<1.1
BETA ENDOSULFAN	8081A	µg/kg	2	<2.5	<2.1
ENDOSULFAN SULFATE	8081A	µg/kg	2	<2.5	<2.1
ENDRIN	8081A	µg/kg	2	<2.5	<2.1
ENDRIN ALDEHYDE	8081A	µg/kg	2	<2.5	<2.1
ENDRIN KETONE	8081A	µg/kg	2	<2.5	<2.1
HEPTACHLOR	8081A	µg/kg	1	<1.2	<1.1
HEPTACHLOR EPOXIDE	8081A	µg/kg	1	<1.2	<1.1
METHOXYCHLOR	8081A	µg/kg	50	<62	<53
TOXAPHENE	8081A	µg/kg	50	<62	<53

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-1 03-02419-1	SD-2 03-02419-2
PCBS					
Dilution Factor				1	1
PCB-1016 (AROCLOR 1016)	SW8082	µg/kg	33	< 41	< 35
PCB-1221 (AROCLOR 1221)	SW8082	µg/kg	67	< 82	< 71
PCB-1232 (AROCLOR 1232)	SW8082	µg/kg	33	< 41	< 35
PCB-1242 (AROCLOR 1242)	SW8082	µg/kg	33	< 41	< 35
PCB-1248 (AROCLOR 1248)	SW8082	µg/kg	33	< 41	< 35
PCB-1254 (AROCLOR 1254)	SW8082	µg/kg	33	< 41	< 35
PCB-1260 (AROCLOR 1260)	SW8082	µg/kg	33	< 41	< 35

Component Analyzed	Method	Unit	PQL	Analysis Result SD-3 03-02419-3	SD-4 03-02419-4	SD-QC-1 03-02419-5
MOISTURE, PERCENT	D2216	%Moisture	0.5	24.8	28.7	21.0
Dilution Factor				1	1	1
CHROMIUM (VI) [a]	7199	µg/kg	5	< 6.6	< 7.0	< 6.3
Dilution Factor				1	1	1
PERCHLORATE [a]	314.0	µg/kg	20	< 27	< 28	-
PRIORITY POLLUTANT METALS						
Dilution Factor				1	1	1
ANTIMONY	6010B	mg/kg	5	< 6.6	< 7.0	-
ARSENIC	6010B	mg/kg	0.3	4.4	1.8	-
BERYLLIUM	6010B	mg/kg	0.2	< 0.27	< 0.28	-
CADMIUM	6010B	mg/kg	0.2	1.3	0.69	-
CHROMIUM	6010B	mg/kg	0.5	23.2	13.7	-
COPPER	6010B	mg/kg	0.5	24.1	13.1	-
LEAD	6010B	mg/kg	0.3	62.9	21.3	-
MERCURY	7471A	mg/kg	0.2	0.063J	0.029J	-
NICKEL	6010B	mg/kg	0.3	20.9	12.3	-
SELENIUM	6010B	mg/kg	0.5	0.88	0.31J	-
SILVER	6010B	mg/kg	0.5	0.15J	0.20J	-
THALLIUM	6010B	mg/kg	0.5	< 0.66	< 0.70	-
ZINC	6010B	mg/kg	0.5	82.6	47.9	-
Dilution Factor				1.13	0.99	1
PHC AS GASOLINE	M8015V	mg/kg	1	< 1.5	< 1.4	-
Dilution Factor				1	1	1
PHC AS DIESEL FUEL	M8015E	mg/kg	10	10J	6J	-
Dilution Factor				1	1	1
MOTOR OILS	M8015E	mg/kg	10	68	35	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-3 03-02419-3	SD-4 03-02419-4	SD-QC-1 03-02419-5
VOLATILE ORGANICS BY SW5030/SW8260B						
Dilution Factor				0.9	1.02	1
BENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
BROMOBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
BROMOFORM	SW8260B	µg/kg	5	<6.0	<7.2	-
BROMOMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
2-BUTANONE	SW8260B	µg/kg	20	<24	<29	-
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.0	<7.2	-
CHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
CHLORODIBROMOMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
CHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
CHLOROFORM	SW8260B	µg/kg	5	<6.0	<7.2	-
CHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.0	<7.2	-
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2-DIBROMOETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<7.2	-
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<7.2	-
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<7.2	-
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<7.2	-
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<7.2	-
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<7.2	-
ETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.0	<7.2	-
2-HEXANONE	SW8260B	µg/kg	20	<24	<29	-
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.0	<7.2	-
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.0	<7.2	-
METHYLENE CHLORIDE	SW8260B	µg/kg	5	<6.0	<7.2	-
4-METHYL-2-PENTANONE	SW8260B	µg/kg	20	<24	<29	-
METHYL-TERT-BUTYL-ETHER (MTBE)	SW8260B	µg/kg	5	<6.0	<7.2	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-3 03-02419-3	SD-4 03-02419-4	SD-QC-1 03-02419-5
NAPHTHALENE	SW8260B	µg/kg	5	<6.0	<7.2	-
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
STYRENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.0	<7.2	-
TOLUENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<7.2	-
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<7.2	-
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.0	<7.2	-
XYLENES (TOTAL)	SW8260B	µg/kg	5	<6.0	<7.2	-
TERT BUTYL ALCOHOL (TBA)	SW8260B	µg/kg	20	<24	<29	-
DIISOPROPYL ETHER(DIPE)	SW8260B	µg/kg	5	<6.0	<7.2	-
ETHYL TERT BUTYL ETHER (ETBE)	SW8260B	µg/kg	5	<6.0	<7.2	-
TERT AMYL METHYL ETHER (TAME)	SW8260B	µg/kg	5	<6.0	<7.2	-
Dilution Factor				1	1	1
1,4-DIOXANE (P-DIOXANE)	8270-SIM	µg/kg	33	<44	<46	<42
ORGANOCHLORINE PESTICIDES						
Dilution Factor				1	1	1
ALDRIN	8081A	µg/kg	1	<1.3	<1.4	-
BETA BHC	8081A	µg/kg	1	<1.3	<1.4	-
ALPHA BHC	8081A	µg/kg	1	<1.3	<1.4	-
DELTA BHC	8081A	µg/kg	1	<1.3	<1.4	-
GAMMA BHC (LINDANE)	8081A	µg/kg	1	<1.3	<1.4	-
ALPHA-CHLORDANE	8081A	µg/kg	1	15	9.1	-
GAMMA-CHLORDANE	8081A	µg/kg	1	14	7.5	-
P,P'-DDD	8081A	µg/kg	2	15 (b)	5 (b)	-
P,P'-DDE	8081A	µg/kg	2	11 (b)	4 (b)	-
P,P'-DDT	8081A	µg/kg	2	6.4 (b)	3J (b)	-
DIELDRIN	8081A	µg/kg	2	2J (b)	<2.8	-
ALPHA ENDOSULFAN	8081A	µg/kg	1	<1.3	<1.4	-
BETA ENDOSULFAN	8081A	µg/kg	2	<2.7	<2.8	-
ENDOSULFAN SULFATE	8081A	µg/kg	2	<2.7	<2.8	-
ENDRIN	8081A	µg/kg	2	<2.7	<2.8	-
ENDRIN ALDEHYDE	8081A	µg/kg	2	2J (b)	<2.8	-
ENDRIN KETONE	8081A	µg/kg	2	<2.7	<2.8	-
HEPTACHLOR	8081A	µg/kg	1	2 (b)	0.7J (b)	-
HEPTACHLOR EPOXIDE	8081A	µg/kg	1	1 (b)	0.4J (b)	-
METHOXYCHLOR	8081A	µg/kg	50	<66	<70	-
TOXAPHENE	8081A	µg/kg	50	<66	<70	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result SD-3 03-02419-3	SD-4 03-02419-4	SD-QC-1 03-02419-5
PCBS						
Dilution Factor				1	1	1
PCB-1016 (AROCLOR 1016)	SW8082	µg/kg	33	<44	<46	-
PCB-1221 (AROCLOR 1221)	SW8082	µg/kg	67	<89	<94	-
PCB-1232 (AROCLOR 1232)	SW8082	µg/kg	33	<44	<46	-
PCB-1242 (AROCLOR 1242)	SW8082	µg/kg	33	<44	<46	-
PCB-1248 (AROCLOR 1248)	SW8082	µg/kg	33	<44	<46	-
PCB-1254 (AROCLOR 1254)	SW8082	µg/kg	33	<44	<46	-
PCB-1260 (AROCLOR 1260)	SW8082	µg/kg	33	24J	23J	-

Component Analyzed	Method	Unit	PQL	Analysis Result SD-1 03-02419-1
TCLP METAL				
Dilution Factor				2
ARSENIC	6010B	µg/L	5	<10
BARIUM	6010B	µg/L	10	239
CADMIUM	6010B	µg/L	2	0.81J
CHROMIUM	6010B	µg/L	5	3.6J
LEAD	6010B	µg/L	5	<10
Dilution Factor				1
MERCURY	7470A	µg/L	0.5	0.040J
Dilution Factor				2
SELENIUM	6010B	µg/L	10	<20
SILVER	6010B	µg/L	10	2.6J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
† All results are reported on dry basis for soil samples.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Analyzed on a 1:5 water extract.
(b) Presence of PCB may cause false positives in pesticides chromatogram.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

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Case Narrative

Project: Lower Lakes/02HW013

For SOTA Environmental

APCL Service No: 03-2419

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
SD-1	03-02419-1
SD-2	03-02419-2
SD-3	03-02419-3
SD-4	03-02419-4
SD-QC-1	03-02419-5

2. Analytical Methodology

Samples are analyzed by EPA methods

SW8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
8081A (Organochlorine pesticides),
8082 (PCBs),
314.0 (Perchlorate, low level),
6010B/7471A (Priority Pollutant Metals (CWA) (13)),
7199 (Chromium (VI)),
8270-SIM (1,4-Dioxane),
ASTM-D2216 (Moisture, percent in soil),
6010B (TCLP metal, EPA Primary List),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and condi-

tions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013

Please Print in pen

Laboratory Information:	**Project Information:**
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)		Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	NDMA (EPA 1625)	CHROMIUM (VI) (EPA 7199)	1,4-Dioxane (8270SIM)		Remarks
								Analysis Items												
SD-3	large lower lake	3/25/03	1:20pm	Sediment	5	6	Encore-5g	x	x											
SD-3			1:20pm	Sediment	5	2	~~Stainless Steel~~ Acrylic Sleeve				x	x	x	x	x	x	x	x		
SD-4			1:50pm	Sediment	5	6	Encore-5g	x	x											
SD-4			2:00pm	Sediment	5	2	~~Stainless Steel~~ Acrylic Sleeve				x	x	x	x	x	x	x	x		
SD-QC-1			2:00PM	Sediment	5	1	~~Stainless Steel~~ Acrylic Sleeve									x	x	x		

2419

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix			
	1 Drinking Water	4 Solid/Soil	
	2 Waste Water	5 Aqueous	
	3 Oil/Organic Liquid	6 Air	

Preservative		
	1 HCl	5 Ice Only
	2 HNO3	6 Other_Na2S2O8__
	3 H2SO4	7 Not Preserved
	4 NaOH	

Temperature: _____ Degrees C

Relinquished by: Date/Time 3/26/03 1417 Received by: Date/Time 3/26/03 1420

Relinquished by: Date/Time Received by: Date/Time

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013
Please Print in pen

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES
Due Date: ■ regular ☐ rush ___days ___hours	

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260B)	TCLP Metals (TCLP/6010)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	NDMA (EPA 1625)	CHROMIUM (VI) (EPA 7199)	1,4-Dioxane (8270SIM)	Remarks
SD-1	Small lower lake	3/25/03	11:40am	Sediment	5	6	Encore-5g	x	x										
SD-1			12:00pm	Sediment	5	2	~~Stainless Steel~~ Acrylic Sleeve			X	x	x	x	x	x	x	x	x	
SD-2			12:15pm	Sediment	5	6	Encore-5g	x	x										
SD-2			12:15pm	Sediment	5	2	~~Stainless Steel~~ Acrylic Sleeve				x	x	x	x	x	x	x	x	

2419

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO3, 3 H2SO4, 4 NaOH, 5 Ice Only, 6 Other_Na2S2O8__, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 3/26/03 1417	Received by:	Date/Time 3/26/03 1420
Relinquished by:	Date/Time	Received by:	Date/Time

Air Bill Number:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 2419 Client Name/Project: Sota Environmental

1. Sample Arrival

Date/Time Received 3/26/03 1420 Date/Time Opened 3/26/03 1422 By (name): Paul Kan
Custody Transfer: ☒ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☐ APCL Empl: _____

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☒ Client has Copy? ☐ Signed, dated? By: _____
☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received _____
☒ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☒ #Samples OK? _____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): _____

3. Shipping Container/Cooler

☒ Cooler Used? # of 1 Cooled by: ☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
Temp °C 2.9°C _____ _____ _____ _____ _____
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? ☒ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12
If Not, pH = _____ Preserved by: ☐ Client ☐ APCL ☐ Third Party _____

5. Holding-time Requirements

☐ pH 24hr ☐ BACT 6/24hr ☐ Cr^{VI} 24hr ☐ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number: _____
Type: ☒ plastic ☐ glass ☒ Tube: brass/SS ☐ Tedlar Bag
☒ Quantity OK? ☐ Leaking? ☐ Anomaly?
☒ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☒ Unique ID? ☐ Date/Time ☐ Preserved?

7. Turn Around Time

☒ RUSH TAT: 5 days ☐ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☐ Other Liq ☒ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: _____
☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☒ ALL OK? (if not, attach docs) ☐ Client Contact? (Name: _____) Date/Time: _____

Received/Checked by: Paul C Date: 26 Mar 2003 Time: 7:42 a.m.

Note: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [mat.texfiles]smprcl.tex.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

03-02419 (1288_ 474) (4858100_ 474)

03/26/03

Part 1: General Information

☐	Company Information	Name:	*SOTA Environmental*
		Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
☐	Project Information	Project Description:	*Lower Lakes*
		Project #:	*02HW013*
☐	Billing Information	P.O. #:	
		Bill Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
		Lab Project ID:	
		Client Database #:	*0*
☐	Receiving Information	Who Received Sample?	*Paul Kou*
		Receiving Date/Time:	*03/26/03 1420*
		COC No.	
☐	Shipping Information	Shipping Company	*by Client*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*2.7 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	SD-1	Encore	03-02419-1-α	S	P		5	6	G	032503	N	0	7	☐
	SD-1	Sleeve	03-02419-1-β	S	B		500	1	G	032503	N	0	7	☐
2	SD-2	Encore	03-02419-2-α	S	P		5	6	G	032503	N	0	7	☐
	SD-2	Sleeve	03-02419-2-β	S	B		500	1	G	032503	N	0	7	☐
3	SD-3	Encore	03-02419-3-α	S	P		5	6	G	032503	N	0	7	☐
	SD-3	Sleeve	03-02419-3-β	S	B		500	1	G	032503	N	0	7	☐
4	SD-4	Encore	03-02419-4-α	S	P		5	6	G	032503	N	0	7	☐
	SD-4	Sleeve	03-02419-4-β	S	B		500	1	G	032503	N	0	7	☐
5	SD-QC-1	Sleeve	03-02419-5	S	B		500	1	G	032503	N	0	7	☐

Part 3: Analysis Information

Test Items:

- ☐ *8260B* Volatile organics
- ☐ *M8015V/M8015G* Gasoline
- ☐ *M8015E/M8015D* TPH: Diesel
- ☐ *M8015E/M8015M* TPH: Motor Oil
- ☐ *8081A* Organochlorine pesticides
- ☐ *8082* PCBs
- ☐ *314.0/300.0* Perchlorate, low level
- ☐ *6010B/7000A* Priority Pollutant Metals (CWA) (13)
- ☐ *376.1/9030B* Sulfide, Dissolved
- ☐ *405.1* Biological Oxygen Demand (BOD)
- ☐ *375.4/9038* Sulfate (SO_4^{--})
- ☐ *325.3/9252A* Chloride Cl^-
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *160.2* Solids, Total Suspended (TSS)
- ☐ *160.5* Solids, Settleable (SS)
- ☐ *9040B/150.1* pH
- ☐ *SM9221B/9131* Total Coliform, MTF, 3X5 tubes
- ☐ *SM9221E* Fecal Coliform, MTF, 3X5 tubes
- ☐ *353.3* Nitrate (NO_3^-) as N Cd reduction
- ☐ *354.1* Nitrite (NO_2^-) as N
- ☐ *218.6/7199* Chromium (VI)
- ☐ *8270-SIM* 1,4-Dioxane

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

April 23, 2003

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 03-2417 and your project is 02HW013 Lower Lakes, HD FCB. Enclosed please find:

(1) One original report.
(2) One original Chain of Custody.
(3) One diskette containing EDD Deliverable.
(4) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-032417
Collected by: MES
Collected on: 03/26/03

Received: 03/26/03
Extracted: 03/28-04/01/03
Tested: 03/26-04/02/03
Reported: 04/07/03

Sample Description: Water
Project Description: 02HW013 Lower Lakes, HD FCB.

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-1 03-02417-1	BG-SW-2 03-02417-2
Biological Oxygen Demand (BOD)	405.1	mg-O_2/L	2	6.0	1.7J
Chloride Cl^-	325.3	mg/L	1	14.0	25.5
Nitrate (NO_3^-) as N	353.3	mg/L	0.1	0.35	3.3
Nitrite (NO_2^-) as N	354.1	mg/L	0.02	<0.02	<0.02
pH	9040B	pH unit	0.01	8.49	8.08
Solids, Settleable (SS)	160.5	mL/L-hr	0.2	<0.2	<0.2
Solids, Total Dissolved (TDS)	160.1	mg/L	10	339	370
Solids, Total Suspended (TSS)	160.2	mg/L	4	<4	<4
Sulfate (SO_4^{--})	375.4	mg/L	2	67.5	58.5
Sulfide, Dissolved	376.2	mg/L	0.2	<0.2	<0.2
Total Coliform, MTF, 3X5 tubes	SM9221B	MPN/100mL	2	240	240
Fecal Coliform, MTF, 3X5 tubes	SM9221E	MPN/100mL	2	23.0	50.0
Dilution Factor				1	1
Chromium (VI)	218.6	µg/L	1	<1	<1
Dilution Factor				1	1
Perchlorate	314.0	µg/L	4	<4	<4
Priority Pollutant Metals (CWA) (13)					
Dilution Factor				1	1
ANTIMONY	6010B	µg/L	10	2.9J	<10
ARSENIC	6010B	µg/L	5	<5	<5
BERYLLIUM	6010B	µg/L	2	<2	<2
CADMIUM	6010B	µg/L	2	0.49J	0.32J
CHROMIUM	6010B	µg/L	5	1.5J	1.9J
COPPER	6010B	µg/L	10	3.1J	<10
LEAD	6010B	µg/L	5	<5	<5
MERCURY	7470A	µg/L	0.5	0.33J	0.18J
NICKEL	6010B	µg/L	5	1.3J	1.6J
SELENIUM	6010B	µg/L	10	<10	<10
SILVER	6010B	µg/L	10	<10	<10
THALLIUM	6010B	µg/L	10	<10	<10
ZINC	6010B	µg/L	10	9.0J	8.0J
Dilution Factor				1	1
PHC as GASOLINE	M8015V	mg/L	0.05	0.02J	0.02J
Dilution Factor				1	1
PHC as DIESEL FUEL	M8015E	mg/L	0.5	<0.5	<0.5
Dilution Factor				1	1
MOTOR OILS	M8015E	mg/L	0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-1 03-02417-1	BG-SW-2 03-02417-2
Volatile organics					
Dilution Factor				1	1
ACETONE	8260B	µg/L	50	< 50	< 50
BENZENE	8260B	µg/L	5	< 5	< 5
BROMOBENZENE	8260B	µg/L	5	< 5	< 5
BROMOCHLOROMETHANE	8260B	µg/L	5	< 5	< 5
BROMODICHLOROMETHANE	8260B	µg/L	5	< 5	< 5
BROMOFORM	8260B	µg/L	5	< 5	< 5
BROMOMETHANE	8260B	µg/L	5	< 5	< 5
METHYL ETHYL KETONE	8260B	µg/L	100	< 100	< 100
N-BUTYLBENZENE	8260B	µg/L	5	< 5	< 5
SEC-BUTYLBENZENE	8260B	µg/L	5	< 5	< 5
T-BUTYLBENZENE	8260B	µg/L	5	< 5	< 5
CARBON DISULFIDE	8260B	µg/L	5	< 5	< 5
CARBON TETRACHLORIDE	8260B	µg/L	5	< 5	< 5
CHLOROBENZENE	8260B	µg/L	5	< 5	< 5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	< 5	< 5
CHLOROETHANE	8260B	µg/L	5	< 5	< 5
CHLOROFORM	8260B	µg/L	5	< 5	< 5
CHLOROMETHANE	8260B	µg/L	5	< 5	< 5
2-CHLOROTOLUENE	8260B	µg/L	5	< 5	< 5
4-CHLOROTOLUENE	8260B	µg/L	5	< 5	< 5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	< 5	< 5
1,2-DIBROMOETHANE	8260B	µg/L	5	< 5	< 5
DIBROMOMETHANE	8260B	µg/L	5	< 5	< 5
1,2-DICHLOROBENZENE	8260B	µg/L	5	< 5	< 5
1,3-DICHLOROBENZENE	8260B	µg/L	5	< 5	< 5
1,4-DICHLOROBENZENE	8260B	µg/L	5	< 5	< 5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	< 5	< 5
1,1-DICHLOROETHANE	8260B	µg/L	5	< 5	< 5
1,2-DICHLOROETHANE	8260B	µg/L	5	< 5	< 5
1,1-DICHLOROETHENE	8260B	µg/L	5	< 5	< 5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	< 5	< 5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	< 5	< 5
1,2-DICHLOROPROPANE	8260B	µg/L	5	< 5	< 5
1,3-DICHLOROPROPANE	8260B	µg/L	5	< 5	< 5
2,2-DICHLOROPROPANE	8260B	µg/L	5	< 5	< 5
1,1-DICHLOROPROPENE	8260B	µg/L	5	< 5	< 5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	< 5	< 5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	< 5	< 5
ETHYLBENZENE	8260B	µg/L	5	< 5	< 5
HEXACHLOROBUTADIENE	8260B	µg/L	5	< 5	< 5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	< 5	< 5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	< 5	< 5
METHYLENE CHLORIDE	8260B	µg/L	5	5J	3J
METHYL ISOBUTYL KETONE	8260B	µg/L	50	1J	< 50
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	< 10	< 10

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-1 03-02417-1	BG-SW-2 03-02417-2
NAPHTHALENE	8260B	µg/L	5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5
M,P-XYLENE	8260B	µg/L	10	<10	<10
TERT BUTYL ALCOHOL (TBA)	8260B	µg/L	20	<20	<20
DIISOPROPYL ETHER (DIPE)	8260B	µg/L	5	<5	<5
ETHYL TERT BUTYL EHTER (ETBE)	8260B	µg/L	5	<5	<5
TERT AMYL METHYL ETHER (TAME)	8260B	µg/L	5	<5	<5
Dilution Factor				1	1
1,4-DIOXANE (P-DIOXANE)	8270-SIM	µg/L	1	<1	<1
Organochlorine pesticides					
Dilution Factor				0.962	0.962
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-1 03-02417-1	BG-SW-2 03-02417-2
PCBs					
Dilution Factor				0.96	0.96
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-3 03-02417-3	BG-SW-QC1 03-02417-4	TB-1 03-02417-5
Biological Oxygen Demand (BOD)	405.1	mg-O_2/L	2	<2	<2	-
Chloride Cl^-	325.3	mg/L	1	26.5	27.5	-
Nitrate (NO_3^-) as N	353.3	mg/L	0.1	4.4	4.2	-
Nitrite (NO_2^-) as N	354.1	mg/L	0.02	0.030	0.034	-
pH	9040B	pH unit	0.01	7.37	7.32	-
Solids, Settleable (SS)	160.5	mL/L-hr	0.2	<0.2	<0.2	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	358	380	-
Solids, Total Suspended (TSS)	160.2	mg/L	4	<4	5.0	-
Sulfate (SO_4^{--})	375.4	mg/L	2	47.7	53.4	-
Sulfide, Dissolved	376.2	mg/L	0.2	<0.2	<0.2	-
Total Coliform, MTF, 3X5 tubes	SM9221B	MPN/100mL	2	50.0	6.0	-
Fecal Coliform, MTF, 3X5 tubes	SM9221E	MPN/100mL	2	8.0	<2	-
Dilution Factor				1	1	1
Chromium (VI)	218.6	µg/L	1	<1	<1	-
Dilution Factor				1	1	1
Perchlorate	314.0	µg/L	4	<4	<4	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-3 03-02417-3	BG-SW-QC1 03-02417-4	TB-1 03-02417-5
Priority Pollutant Metals (CWA) (13)						
Dilution Factor				1	1	1
ANTIMONY	6010B	µg/L	10	<10	2.4J	-
ARSENIC	6010B	µg/L	5	<5	<5	-
BERYLLIUM	6010B	µg/L	2	<2	<2	-
CADMIUM	6010B	µg/L	2	0.55J	0.42J	-
CHROMIUM	6010B	µg/L	5	2.0J	2.0J	-
COPPER	6010B	µg/L	10	<10	<10	-
LEAD	6010B	µg/L	5	<5	<5	-
MERCURY	7470A	µg/L	0.5	0.25J	0.24J	-
NICKEL	6010B	µg/L	5	<5	<5	-
SELENIUM	6010B	µg/L	10	<10	3.0J	-
SILVER	6010B	µg/L	10	<10	<10	-
THALLIUM	6010B	µg/L	10	<10	<10	-
ZINC	6010B	µg/L	10	17.7	11.3	-
Dilution Factor				1	1	1
PHC as GASOLINE	M8015V	mg/L	0.05	0.02J	0.02J	-
Dilution Factor				1	1	1
PHC as DIESEL FUEL	M8015E	mg/L	0.5	<0.5	<0.5	-
Dilution Factor				1	1	1
MOTOR OILS	M8015E	mg/L	0.5	<0.5	<0.5	-
Volatile organics						
Dilution Factor				1	1	1
ACETONE	8260B	µg/L	50	<50	<50	<50
BENZENE	8260B	µg/L	5	<5	<5	<5
BROMOBENZENE	8260B	µg/L	5	<5	<5	<5
BROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMODICHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
BROMOFORM	8260B	µg/L	5	<5	<5	<5
BROMOMETHANE	8260B	µg/L	5	<5	<5	<5
METHYL ETHYL KETONE	8260B	µg/L	100	<100	<100	<100
N-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
SEC-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
T-BUTYLBENZENE	8260B	µg/L	5	<5	<5	<5
CARBON DISULFIDE	8260B	µg/L	5	<5	<5	<5
CARBON TETRACHLORIDE	8260B	µg/L	5	<5	<5	<5
CHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DIBROMOCHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROETHANE	8260B	µg/L	5	<5	<5	<5
CHLOROFORM	8260B	µg/L	5	<5	<5	<5
CHLOROMETHANE	8260B	µg/L	5	<5	<5	<5
2-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
4-CHLOROTOLUENE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2-DIBROMOETHANE	8260B	µg/L	5	<5	<5	<5
DIBROMOMETHANE	8260B	µg/L	5	<5	<5	<5

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-3 03-02417-3	BG-SW-QC1 03-02417-4	TB-1 03-02417-5
1,2-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,4-DICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
DICHLORODIFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
CIS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	5	<5	<5	<5
1,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,3-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
2,2-DICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,1-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	5	<5	<5	<5
ETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
HEXACHLOROBUTADIENE	8260B	µg/L	5	<5	<5	<5
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	5	<5	<5	<5
P-CYMENE (P-ISOPROPYLTOLUENE)	8260B	µg/L	5	<5	<5	<5
METHYLENE CHLORIDE	8260B	µg/L	5	3J	6	3J
METHYL ISOBUTYL KETONE	8260B	µg/L	50	2J	<50	1J
TERT-BUTYL METHYL ETHER	8260B	µg/L	10	<10	<10	<10
NAPHTHALENE	8260B	µg/L	5	<5	<5	<5
N-PROPYLBENZENE	8260B	µg/L	5	<5	<5	<5
STYRENE	8260B	µg/L	5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TETRACHLOROETHENE(PCE)	8260B	µg/L	5	<5	<5	<5
TOLUENE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	5	<5	<5	<5
1,1,1-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
1,1,2-TRICHLOROETHANE	8260B	µg/L	5	<5	<5	<5
TRICHLOROETHENE (TCE)	8260B	µg/L	5	<5	<5	<5
TRICHLOROFLUOROMETHANE	8260B	µg/L	5	<5	<5	<5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	5	<5	<5	<5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	5	<5	<5	<5
VINYL CHLORIDE	8260B	µg/L	5	<5	<5	<5
O-XYLENE	8260B	µg/L	5	<5	<5	<5
M,P-XYLENE	8260B	µg/L	10	<10	<10	<10
TERT BUTYL ALCOHOL (TBA)	8260B	µg/L	20	<20	<20	<20
DIISOPROPYL ETHER (DIPE)	8260B	µg/L	5	<5	<5	<5
ETHYL TERT BUTYL ETHER (ETBE)	8260B	µg/L	5	<5	<5	<5
TERT AMYL METHYL ETHER (TAME)	8260B	µg/L	5	<5	<5	<5
Dilution Factor				1	1	1
1,4-DIOXANE (P-DIOXANE)	8270-SIM	µg/L	1	<1	<1	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result BG-SW-3 03-02417-3	BG-SW-QC1 03-02417-4	TB-1 03-02417-5
Organochlorine pesticides						
Dilution Factor				0.962	0.962	1
ALDRIN	8081A	µg/L	0.05	<0.048	<0.048	-
BETA BHC	8081A	µg/L	0.05	<0.048	<0.048	-
ALPHA BHC	8081A	µg/L	0.05	<0.048	<0.048	-
DELTA BHC	8081A	µg/L	0.05	<0.048	<0.048	-
GAMMA BHC (LINDANE)	8081A	µg/L	0.05	<0.048	<0.048	-
ALPHA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	-
GAMMA-CHLORDANE	8081A	µg/L	0.05	<0.048	<0.048	-
P,P'-DDD	8081A	µg/L	0.1	<0.096	<0.096	-
P,P'-DDE	8081A	µg/L	0.1	<0.096	<0.096	-
P,P'-DDT	8081A	µg/L	0.1	<0.096	<0.096	-
DIELDRIN	8081A	µg/L	0.1	<0.096	<0.096	-
ALPHA ENDOSULFAN	8081A	µg/L	0.05	<0.048	<0.048	-
BETA ENDOSULFAN	8081A	µg/L	0.1	<0.096	<0.096	-
ENDOSULFAN SULFATE	8081A	µg/L	0.5	<0.48	<0.48	-
ENDRIN	8081A	µg/L	0.1	<0.096	<0.096	-
ENDRIN ALDEHYDE	8081A	µg/L	0.1	<0.096	<0.096	-
ENDRIN KETONE	8081A	µg/L	0.1	<0.096	<0.096	-
HEPTACHLOR	8081A	µg/L	0.05	<0.048	<0.048	-
HEPTACHLOR EPOXIDE	8081A	µg/L	0.05	<0.048	<0.048	-
METHOXYCHLOR	8081A	µg/L	2	<1.9	<1.9	-
TOXAPHENE	8081A	µg/L	5	<4.8	<4.8	-
PCBs						
Dilution Factor				0.96	0.96	1
PCB-1016 (AROCLOR 1016)	8082	µg/L	1	<0.96	<0.96	-
PCB-1221 (AROCLOR 1221)	8082	µg/L	2	<1.9	<1.9	-
PCB-1232 (AROCLOR 1232)	8082	µg/L	1	<0.96	<0.96	-
PCB-1242 (AROCLOR 1242)	8082	µg/L	1	<0.96	<0.96	-
PCB-1248 (AROCLOR 1248)	8082	µg/L	1	<0.96	<0.96	-
PCB-1254 (AROCLOR 1254)	8082	µg/L	1	<0.96	<0.96	-
PCB-1260 (AROCLOR 1260)	8082	µg/L	1	<0.96	<0.96	-

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Lower Lakes/02HW013

For SOTA Environmental

APCL Service No: 03-2417

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
BG-SW-1	03-02417-1
BG-SW-2	03-02417-2
BG-SW-3	03-02417-3
BG-SW-QC1	03-02417-4
TB-1	03-02417-5

2. Analytical Methodology

Samples are analyzed by EPA methods

8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
8081A (Organochlorine pesticides),
8082 (PCBs),
314.0 (Perchlorate, low level),
6010B (Priority Pollutant Metals (CWA) (13)),
376.1 (Sulfide, Dissolved),
405.1 (Biological Oxygen Demand (BOD)),
375.4 (Sulfate (SO_4^{--})),
325.3 (Chloride Cl^-),
160.1 (Solids, Total Dissolved (TDS)),
160.2 (Solids, Total Suspended (TSS)),
160.5 (Solids, Settleable (SS)),
9040B (pH),
SM9221B (Total Coliform, MTF, 3X5 tubes),
SM9221E (Fecal Coliform, MTF, 3X5 tubes),
353.3 (Nitrate (NO_3^-) as N Cd reduction),
354.1 (Nitrite (NO_2^-) as N),
218.6 (Chromium (VI)),
8270-SIM (1,4-Dioxane),
ASTM-D2216 (Moisture, percent in soil),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013

Please Print in pen Page 1 of 3

Laboratory Information:
Lab Name: Applied P & Ch Laboratory
Address: 13760 Magnolia Ave.
City: Chino State: CA Zip: 91710
Lab Phone: 1-909-590-1828 Quotation #:

Project Information:
Name: Lowers Lakes, HD FCB, LA, CA
Proj. 02HW013
PM: YU ZENG
Sampler: MES

Due Date: ■ regular ☐ rush ___days ___hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260		Organo Pesticides (EPA 8081A	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4)	Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	NDMA (EPA 1625)	1,4-Dioxane (EPA 8270 SIM)	Chromium (VI) (EPA 218.6)	Remarks
BG-SW-1		3/26/03	0930	Water	1	6	40-mL VOA	x	x																
BG-SW-1				Water	5	7	1-L Amber Glass				x	x	x									x	x		MDMA (2 special bottles)
BG-SW-1				Water	5	2	125-mL Poly							x										x	
BG-SW-1				Water	5	2	500-mL Poly								x						x				Sample for metal Anal will be filtrated in the lab
BG-SW-1				Water	3	1	500 mL Poly, pH<2									x									
BG-SW-1				Water	4	1	500-mL pH>12										x								
BG-SW-1				Water	5	1	500-mL Poly											x							
BG-SW-1		↓	↓	Water	6	2	100 mL Sterilized Poly												x						
BG-SW-2		3/26/03	1030	Water	1	6	40-mL VOA	x	x																
BG-SW-2				Water	5	6	1-L Amber Glass				x	x	x									x	x		
BG-SW-2				Water	5	2	125-mL Poly							x										x	
BG-SW-2				Water	5	2	500-mL Poly								x						x				Sample for metal Anal will be filtrated in the lab
BG-SW-2				Water	3	1	500 mL Poly, pH<2									x									
BG-SW-2				Water	4	1	500-mL pH>12										x								
BG-SW-2				Water	5	1	500-mL Poly											x							
BG-SW-2		↓	↓	Water	6	2	100 mL Sterilized Poly												x						

Analysis Items

2417

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.
Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other $Na_2S_2O_8$, 7 Not Preserved

Temperature: _____ Degrees C

Relinquished by: Date/Time 3/26/03 1417 Received by: Date/Time 3/26/03 1420

Relinquished by: Date/Time Received by: Date/Time

Air Bill Number:

SOTA Environmental Technology, Inc.

SOTA Environmental Technology Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013

Please Print in pen

Laboratory Information:
Lab Name: Applied P & Ch Laboratory
Address: 13760 Magnolia Ave.
City: Chino State: CA Zip: 91710
Lab Phone: 1-909-590-1828 Quotation #:

Project Information:
Name: Lowers Lakes, HD FCB, LA, CA
Proj. 02HW013
PM: YU ZENG
Sampler: MES

Due Date: ■ regular ☐ rush ___ days ___ hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	TPH-G (EPA 8015M)	VOCs, Oxygenates (EPA 8260)	Organo Pesticides (EPA 8081A)	PCBs (EPA 8082)	TPH-d & m (EPA 8015M)	Perchlorate (EPA 314)	13 Assorted Metals (EPA 6010)	Nitrate/Nitrite (353.3/354.1)	Dissolved Sulfide (376.2)	BOD (405.1)	Total/Fecal Colli.(SM9221B/E)	Sulfate (375.4) Cl(325.3)TDS (160.1) TSS (160.2) SS(160.5) pH (150.1)	NDMA (EPA 1625)	1,4-Dioxane (EPA 8270 SIM)	Chromium (VI) (EPA 218.6)	Remarks
BG-SW-3		3/26/03	~~1130~~	Water	1	6	40-mL VOA	x	x														
BG-SW-3			1130	Water	5	7	1-L Amber Glass			x	x	x								x	x		MDMA (2 special bottles)
BG-SW-3				Water	5	2	125-mL Poly						x									x	
BG-SW-3				Water	5	2	500-mL Poly							x					x				Sample for metal Anal will be filtrated in the lab
BG-SW-3				Water	3	1	500 mL Poly, pH<2								x								
BG-SW-3				Water	4	1	500-mL pH>12									x							
BG-SW-3				Water	5	1	500-mL Poly										x						
BG-SW-3				Water	6	2	100 mL Sterilized Poly											x					
BG-SW-QC1		3/26/03	1130	Water	1	6	40-mL VOA	x	x														
BG-SW-QC1				Water	5	6	1-L Amber Glass			x	x	x								x	x		
BG-SW-QC1				Water	5	2	125-mL Poly						x									x	
BG-SW-QC1				Water	5	2	500-mL Poly							x					x				Sample for metal Anal will be filtrated in the lab
BG-SW-QC1				Water	3	1	500 mL Poly, pH<2								x								
BG-SW-QC1				Water	4	1	500-mL pH>12									x							
BG-SW-QC1				Water	5	1	500-mL Poly										x						
BG-SW-QC1				Water	6	2	100 mL Sterilized Poly											x					

2417

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.
Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by: Date/Time 3/26/03 1417 Received by: Date/Time 3/26/03 1420

Relinquished by: Date/Time Received by: Date/Time

Air Bill Number:

SOTA Environmental Technology, Inc.
16835 W. Bernardo Drive, Suite 212
San Diego, CA 92127-1613
Tel: (858) 485-8100 Fax: (858) 485-0812

Chain of Custody

02HW013

Please Print in pen

Laboratory Information:	Project Information:
Lab Name: Applied P & Ch Laboratory	Name: Lowers Lakes, HD FCB, LA, CA
Address: 13760 Magnolia Ave.	Proj. 02HW013
City: Chino State: CA Zip: 91710	PM: YU ZENG
Lab Phone: 1-909-590-1828 Quotation #:	Sampler: MES

Due Date: ■ regular ☐ rush ___ days ___ hours

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservative	# of Container	Type of Container	Analysis Items: VOCs, Oxygenates (EPA 8260B)	Remarks
TB-1	TRIP BLANK	3/26/03	0920	Water	1	2	40-mL VOA	x	

2417

QC Requirement: ☐Regular ☐QA/QC Report ☐WIP ☐Raw Data ☐Extended Raw Data ☐CLP ☐ACE ☐AFCEE ☐NEESA___(E,C or D) ☐Other_____(Please specify)

Sample Disposal: ☐Disposal by Lab ☐Hold for _____days after receiving date.

Sample Conditions: ☐Intact ☐Broken Cooler Seal: ☐Intact ☐Broken ☐None

Sample Matrix: 1 Drinking Water, 2 Waste Water, 3 Oil/Organic Liquid, 4 Solid/Soil, 5 Aqueous, 6 Air

Preservative: 1 HCl, 2 HNO_3, 3 H_2SO_4, 4 NaOH, 5 Ice Only, 6 Other Na2S2O8, 7 Not Preserved

Temperature: _____Degrees C

Relinquished by:	Date/Time 3/26/03 1417	Received by:	Date/Time 3/26/03 1420
Relinquished by:	Date/Time	Received by:	Date/Time

Air Bill Number:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 2417 Client Name/Project: Sota Environmental

1. Sample Arrival

Date/Time Received 3/26/03 1420 Date/Time Opened 3/26/03 1420 By (name): Paul Kan

Custody Transfer: ☑ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☐ APCL Empl: _____

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☑ Client has Copy? ☐ Signed, dated? By: _____
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received _____
☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☑ #Samples OK? _____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): _____

3. Shipping Container/Cooler

☑ Cooler Used? # of 4 Cooled by: ☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Temp °C 2.1°C 2.6°C 3.1°C 2.4°C _____ _____

(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).

Cooler Custody Seal? ☑ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12

If Not, pH = _____ Preserved by: ☐ Client ☐ APCL ☐ Third Party _____

5. Holding-time Requirements

☑ pH 24hr ☑ BACT 6/24hr ☑ Cr^{VI} 24hr ☐ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☑ Intact? ☐ Broken? ☐ Documented? Number: _____

Type: ☑ plastic ☑ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☑ Quantity OK? ☐ Leaking? ☐ Anomaly?
☑ Caps tight? ☐ Air Bubbles? ☐ Anomaly?

Labels: ☑ Unique ID? ☐ Date/Time ☐ Preserved?

7. Turn Around Time

☑ RUSH TAT: 5 day ☐ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☑ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: _____
☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☑ ALL OK? (if not, attach docs) ☐ Client Contact? (Name: _____)Date/Time: _____

Received/Checked by: Paul C Date: 26 Mar 2003 Time: 7:42 a.m.

Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

03-02417 (1288_ 473) (4858100_ 473)

03/26/03

Part 1: General Information

☐	Company Information	Name:	*SOTA Environmental*
		Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
☐	Project Information	Project Description:	*Lower Lakes*
		Project #:	*02HW013*
☐	Billing Information	P.O. #:	
		Bill Address:	*16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127*
		Lab Project ID:	
		Client Database #:	*0*
☐	Receiving Information	Who Received Sample?	*Paul Kou*
		Receiving Date/Time:	*03/26/03 1420*
		COC No.	
☐	Shipping Information	Shipping Company	*by Client*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*2.1 2.6 3.1 2.4 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	BG-SW-1	VOC/Gas	03-02417-1-α	W	V	C	40	6	G	032603	N	0	7	☐
	BG-SW-1	8015	03-02417-1-β	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-1	8081	03-02417-1-γ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-1	8082	03-02417-1-δ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-1	Dioxane	03-02417-1-ζ	W	G		1000	1	G	032603	N	0	7	☐
	BG-SW-1	Perchl	03-02417-1-η	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-1	CR VI	03-02417-1-θ	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-1	Metal	03-02417-1-ι	W	P	N	500	1	G	032603	N	0	7	☐
	BG-SW-1	NO3/NO2	03-02417-1-κ	W	P	S	500	1	G	032603	N	0	7	☐
	BG-SW-1	DSulfd	03-02417-1-μ	W	P	B	500	1	G	032603	N	0	7	☐
	BG-SW-1	BOD	03-02417-1-ν	W	P		500	1	G	032603	N	0	7	☐
	BG-SW-1	PH/SS	03-02417-1-ξ	W	P		1000	1	G	032603	N	0	7	☐
	BG-SW-1	Colif	03-02417-1-π	W	P	T	120	2	G	032603	N	0	7	☐
2	BG-SW-2	VOC/Gas	03-02417-2-α	W	V	C	40	6	G	032603	N	0	7	☐
	BG-SW-2	8015	03-02417-2-β	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-2	8081	03-02417-2-γ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-2	8082	03-02417-2-δ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-2	Dioxane	03-02417-2-ζ	W	G		1000	1	G	032603	N	0	7	☐
	BG-SW-2	Perchl	03-02417-2-η	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-2	CR VI	03-02417-2-θ	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-2	Metal	03-02417-2-ι	W	P	N	500	1	G	032603	N	0	7	☐
	BG-SW-2	NO3/NO2	03-02417-2-κ	W	P	S	500	1	G	032603	N	0	7	☐
	BG-SW-2	DSulfd	03-02417-2-μ	W	P	B	500	1	G	032603	N	0	7	☐
	BG-SW-2	BOD	03-02417-2-ν	W	P		500	1	G	032603	N	0	7	☐
	BG-SW-2	PH/SS	03-02417-2-ξ	W	P		1000	1	G	032603	N	0	7	☐
	BG-SW-2	Colif	03-02417-2-π	W	P	T	120	2	G	032603	N	0	7	☐
3	BG-SW-3	VOC/Gas	03-02417-3-α	W	V	C	40	6	G	032603	N	0	7	☐
	BG-SW-3	8015	03-02417-3-β	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-3	8081	03-02417-3-γ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-3	8082	03-02417-3-δ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-3	Dioxane	03-02417-3-ζ	W	G		1000	1	G	032603	N	0	7	☐
	BG-SW-3	Perchl	03-02417-3-η	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-3	CR VI	03-02417-3-θ	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-3	Metal	03-02417-3-ι	W	P	N	500	1	G	032603	N	0	7	☐
	BG-SW-3	NO3/NO2	03-02417-3-κ	W	P	S	500	1	G	032603	N	0	7	☐
	BG-SW-3	DSulfd	03-02417-3-μ	W	P	B	500	1	G	032603	N	0	7	☐
	BG-SW-3	BOD	03-02417-3-ν	W	P		500	1	G	032603	N	0	7	☐
	BG-SW-3	PH/SS	03-02417-3-ξ	W	P		1000	1	G	032603	N	0	7	☐
	BG-SW-3	Colif	03-02417-3-π	W	P	T	120	2	G	032603	N	0	7	☐
4	BG-SW-QC1	VOC/Gas	03-02417-4-α	W	V	C	40	6	G	032603	N	0	7	☐
	BG-SW-QC1	8015	03-02417-4-β	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-QC1	8081	03-02417-4-γ	W	G		1000	2	G	032603	N	0	7	☐

	BG-SW-QC1	8082	03-02417-4-δ	W	G		1000	2	G	032603	N	0	7	☐
	BG-SW-QC1	Dioxane	03-02417-4-ζ	W	G		1000	1	G	032603	N	0	7	☐
	BG-SW-QC1	Perchl	03-02417-4-η	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-QC1	CR VI	03-02417-4-θ	W	P		125	1	G	032603	N	0	7	☐
	BG-SW-QC1	Metal	03-02417-4-ι	W	P	N	500	1	G	032603	N	0	7	☐
	BG-SW-QC1	NO3/NO2	03-02417-4-κ	W	P	S	500	1	G	032603	N	0	7	☐
	BG-SW-QC1	DSulfd	03-02417-4-μ	W	P	B	500	1	G	032603	N	0	7	☐
	BG-SW-QC1	BOD	03-02417-4-ν	W	P		500	1	G	032603	N	0	7	☐
	BG-SW-QC1	PH/SS	03-02417-4-ξ	W	P		1000	1	G	032603	N	0	7	☐
	BG-SW-QC1	Colif	03-02417-4-π	W	P	T	120	2	G	032603	N	0	7	☐
5	TB-1	VOC	03-02417-5	W	V	C	40	2	G	032603	N	0	7	☐

Part 3: Analysis Information

Test Items:

☐ *8260B*	Volatile organics
☐ *M8015V/M8015G*	Gasoline
☐ *M8015E/M8015D*	TPH: Diesel
☐ *M8015E/M8015M*	TPH: Motor Oil
☐ *8081A*	Organochlorine pesticides
☐ *8082*	PCBs
☐ *314.0/300.0*	Perchlorate, low level
☐ *6010B/7000A*	Priority Pollutant Metals (CWA) (13)
☐ *376.1/9030B*	Sulfide, Dissolved
☐ *405.1*	Biological Oxygen Demand (BOD)
☐ *375.4/9038*	Sulfate (SO_4^{--})
☐ *325.3/9252A*	Chloride Cl^-
☐ *160.1*	Solids, Total Dissolved (TDS)
☐ *160.2*	Solids, Total Suspended (TSS)
☐ *160.5*	Solids, Settleable (SS)
☐ *9040B/150.1*	pH
☐ *SM9221B/9131*	Total Coliform, MTF, 3X5 tubes
☐ *SM9221E*	Fecal Coliform, MTF, 3X5 tubes
☐ *353.3*	Nitrate (NO_3^-) as N Cd reduction
☐ *354.1*	Nitrite (NO_2^-) as N
☐ *218.6/7199*	Chromium (VI)
☐ *8270-SIM*	1,4-Dioxane
☐ *ASTM-D2216*	Moisture, percent in soil

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL QA/QC Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego, CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026564
Collected by: MES/DM
Collected on: 12/11/02
Sample description:
Soil
Project: Lowers Lakes /02HW013

Received: 12/12/02
Tested: 12/12-19/02
Reported: 01/09/03

Analysis of Soil

801-026564QC

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
WET Analysis in Soil												
Perchlorate	02W5654	0.05	111	N.D.	mg/kg	0.25	106	92	90	2	75-125	20

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Water												
Arsenic	02M2467	1.00	100	N.D.	mg/L	0.500	103	97	96	1	75-125	20
Barium	02M2467	10.0	99	N.D.	mg/L	4.00	105	105*	103*	2	80-120	20
Cadmium	02M2467	2.00	99	N.D.	mg/L	0.250	105	97	95	2	75-125	20
Chromium	02M2467	1.00	99	N.D.	mg/L	1.00	98	83	84	1	75-125	20
Lead	02M2467	1.00	99	N.D.	mg/L	3.00	106	85	85	1	75-125	20
Selenium	02M2467	1.00	99	N.D.	mg/L	0.500	100	92	94	1	75-125	20
Silver	02M2467	2.00	100	N.D.	mg/L	1.00	98	91	91	0	75-125	20
Mercury	02M2460	0.0075	92	N.D.	mg/L	0.0050	96	107	107	0	75-125	20

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Gasoline												
Gasoline	02G4973	1000	101	N.D.	mg/L	0.810	106	109	114	4	65-134	35

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APCL QA/QC Report

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Soil												
Mercury	02M2462	0.0075	92	N.D.	mg/kg	0.834	110	110	108	2	75-125	20
Antimony	02M2468	4.00	100	N.D.	mg/kg	25.0	105	94	94	0	75-125	20
Arsenic	02M2468	1.00	99	N.D.	mg/kg	25.0	105	98	99	1	75-125	20
Beryllium	02M2468	1.00	101	N.D.	mg/kg	10.0	104	94	93	1	75-125	20
Cadmium	02M2468	2.00	100	N.D.	mg/kg	12.5	106	102	102	0	75-125	20
Chromium	02M2468	1.00	100	N.D.	mg/kg	50.0	107	101	100	1	75-125	20
Copper	02M2468	4.00	101	N.D.	mg/kg	50.0	102	102	101	1	75-125	20
Lead	02M2468	1.00	99	N.D.	mg/kg	150	110	103	103	0	75-125	20
Nickel	02M2468	4.00	100	N.D.	mg/kg	50.0	107	101	100	1	75-125	20
Selenium	02M2468	1.00	99	N.D.	mg/kg	25.0	105	101	100	1	75-125	20
Silver	02M2468	2.00	101	N.D.	mg/kg	50.0	105	104	103	1	75-125	20
Thallium	02M2468	1.00	99	N.D.	mg/kg	25.0	113	102	100	2	75-125	20
Zinc	02M2468	4.00	100	N.D.	mg/kg	25.0	108	102	100	1	75-125	20

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
TPH: Diesel												
Diesel	02G4992	1000	96	N.D.	mg/kg	50.0	101	83	82	1	40-138	49
Motor oil/Lubricate oil	02G4992	1000	106	N.D.	mg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	02G4995	50.0	85	N.D.	μg/kg	-	-	-	-	-	-	-
1,1-Dichloroethene	02G4995	50.0	90	N.D.	μg/kg	50.0	86	87	90	4	65-134	35
Chloroform	02G4995	50.0	86	N.D.	μg/kg	-	-	-	-	-	-	-
Benzene	02G4995	50.0	91	N.D.	μg/kg	50.0	86	86	87	2	70-127	29
1,2-Dichloropropane	02G4995	50.0	91	N.D.	μg/kg	-	-	-	-	-	-	-
Trichloroethene	02G4995	50.0	93	N.D.	μg/kg	50.0	88	86	87	1	65-134	34
Toluene	02G4995	50.0	92	N.D.	μg/kg	50.0	89	88	88	1	78-119	20
Chlorobenzene	02G4995	50.0	93	N.D.	μg/kg	50.0	91	88	89	1	71-126	28
Ethylbenzene	02G4995	50.0	86	N.D.	μg/kg	-	-	-	-	-	-	-

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	02G5044	50.0	97	N.D.	μg/kg	-	-	-	-	-	-	-
1,1-Dichloroethene	02G5044	50.0	96	N.D.	μg/kg	50.0	96	98	94	3	65-134	35
Chloroform	02G5044	50.0	81	N.D.	μg/kg	-	-	-	-	-	-	-
Benzene	02G5044	50.0	91	N.D.	μg/kg	50.0	92	93	93	0	70-127	29
1,2-Dichloropropane	02G5044	50.0	96	N.D.	μg/kg	-	-	-	-	-	-	-
Trichloroethene	02G5044	50.0	87	N.D.	μg/kg	50.0	89	91	90	1	65-134	34
Toluene	02G5044	50.0	94	N.D.	μg/kg	50.0	92	94	94	0	78-119	20
Chlorobenzene	02G5044	50.0	96	N.D.	μg/kg	50.0	96	99	98	0	71-126	28
Ethylbenzene	02G5044	50.0	81	N.D.	μg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Organochlorine pesticides												
α-BHC	02G5068	50.0	96	N.D.	μg/kg	-	-	-	-	-	-	-
γ-BHC (Lindane)	02G5068	50.0	98	N.D.	μg/kg	16.7	99	85	88	4	59-111	26
β-BHC	02G5068	50.0	114	N.D.	μg/kg	-	-	-	-	-	-	-
Heptachlor	02G5068	50.0	102	N.D.	μg/kg	16.7	84	75	80	6	40-133	47
δ-BHC	02G5068	50.0	104	N.D.	μg/kg	-	-	-	-	-	-	-
Aldrin	02G5068	50.0	109	N.D.	μg/kg	16.7	105	90	96	6	58-113	28
Heptachlor epoxide	02G5068	50.0	104	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan I	02G5068	50.0	101	N.D.	μg/kg	-	-	-	-	-	-	-
4,4'-DDE	02G5068	50.0	99	N.D.	μg/kg	-	-	-	-	-	-	-
Dieldrin	02G5068	50.0	104	N.D.	μg/kg	16.7	96	84	89	6	40-135	47
Endrin	02G5068	50.0	103	N.D.	μg/kg	16.7	85	83	88	5	40-139	50
4,4'-DDD	02G5068	50.0	104	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan II	02G5068	50.0	108	N.D.	μg/kg	-	-	-	-	-	-	-
4,4'-DDT	02G5068	50.0	105	N.D.	μg/kg	16.7	87	80	84	4	40-139	50
Endrin aldehyde	02G5068	50.0	107	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan sulfate	02G5068	50.0	109	N.D.	μg/kg	-	-	-	-	-	-	-
Methoxychlor	02G5068	50.0	100	N.D.	μg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
PCBs												
Aroclor-1016 (PCB-1016)	02G5067	1000	104	N.D.	μg/kg	167	92	84	83	1	40-139	49
Aroclor-1260 (PCB-1260)	02G5067	1000	96	N.D.	μg/kg	167	86	84	84	0	42-137	47

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APCL QA/QC Report

*: LCS/LCSD is used.

Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

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Applied P & Ch Laboratory

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APCL QA/QC Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego, CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026571
Collected by: MES/DM.
Collected on: 12/11/02
Sample description:
Water
Project: Lowers lakes /02HW013

Received: 12/12/02
Tested: 12/12-20/02
Reported: 01/13/03

Analysis of Water

801-026571QC

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
WET Analysis in Water												
Biological Oxygen Demand (BOD)	02W5589	-	-	N.D.	mg-O_2/L	198	102	102*	-	-	80-120	-
Chloride Cl^- by Titration	02W5751	-	-	N.D.	mg/L	50.0	103	92	93	1	90-110	10
Nitrate and Nitrite, as N	02W5611	0.250	100	N.D.	mg/L	1.00	87	86	87	1	75-125	20
Nitrite as N-NO_2^-, by Color.	02W5610	0.150	99	N.D.	mg/L	0.150	94	108	106	2	75-124	25
Solids, Total Dissolved (TDS)	02W5607	-	-	N.D.	mg/L	400	98	99	99	0	80-119	20
Sulfate SO_4^{--}, Turbimetric	02W5618	20.0	93	N.D.	mg/L	100	93	93*	92*	1	80-119	20
Sulfide, Total	02W5619	0.400	101	N.D.	mg/L	0.400	104	85	84	1	75-125	20
Perchlorate	02W5637	0.05	100	N.D.	mg/L	0.05	105	90	89	1	75-125	20

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Water												
Antimony	02M2466	4.00	98	N.D.	mg/L	0.500	98	92	91	0	75-125	20
Arsenic	02M2466	1.00	100	N.D.	mg/L	0.500	101	97	98	1	75-125	20
Beryllium	02M2466	1.00	99	N.D.	mg/L	0.200	100	86	87	1	75-125	20
Cadmium	02M2466	2.00	99	N.D.	mg/L	0.250	104	97	95	3	75-125	20
Chromium	02M2466	1.00	99	N.D.	mg/L	1.00	103	90	88	2	75-125	20
Copper	02M2466	4.00	100	N.D.	mg/L	1.00	102	100	97	3	75-125	20
Lead	02M2466	1.00	99	N.D.	mg/L	3.00	107	89	87	2	75-125	20
Nickel	02M2466	4.00	99	N.D.	mg/L	1.00	105	88	86	2	75-125	20
Selenium	02M2466	1.00	99	N.D.	mg/L	0.500	101	97	97	0	75-125	20
Silver	02M2466	2.00	100	N.D.	mg/L	1.00	102	98	96	3	75-125	20
Thallium	02M2466	1.00	98	N.D.	mg/L	0.500	105	83	82	1	75-125	20
Zinc	02M2466	4.00	99	N.D.	mg/L	0.500	108	87	85	3	75-125	20
Mercury	02M2460	0.0075	92	N.D.	mg/L	0.0050	96	107	107	0	75-125	20

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Gasoline												
Gasoline	02G5005	1000	105	N.D.	mg/L	1.00	102	110	107	3	65-134	35

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	02G5018	50.0	95	N.D.	µg/L	-	-	-	-	-	-	-
1,1-Dichloroethene	02G5018	50.0	93	N.D.	µg/L	50.0	100	102	101	1	65-127	31
Chloroform	02G5018	50.0	91	N.D.	µg/L	-	-	-	-	-	-	-
Benzene	02G5018	50.0	94	N.D.	µg/L	50.0	96	98	98	0	65-121	28
1,2-Dichloropropane	02G5018	50.0	93	N.D.	µg/L	-	-	-	-	-	-	-
Trichloroethene	02G5018	50.0	96	N.D.	µg/L	50.0	98	100	99	1	65-125	30
Toluene	02G5018	50.0	90	N.D.	µg/L	50.0	91	93	94	1	65-134	35
Chlorobenzene	02G5018	50.0	95	N.D.	µg/L	50.0	97	98	99	0	65-134	35
Ethylbenzene	02G5018	50.0	85	N.D.	µg/L	-	-	-	-	-	-	-

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Organochlorine pesticides												
α-BHC	02G5002	50.0	96	N.D.	µg/L	-	-	-	-	-	-	-
γ-BHC (Lindane)	02G5002	50.0	103	N.D.	µg/L	0.500	82	82*	83*	1	52-114	40
β-BHC	02G5002	50.0	114	N.D.	µg/L	-	-	-	-	-	-	-
Heptachlor	02G5002	50.0	102	N.D.	µg/L	0.500	79	79*	80*	2	54-125	39
δ-BHC	02G5002	50.0	101	N.D.	µg/L	-	-	-	-	-	-	-
Aldrin	02G5002	50.0	109	N.D.	µg/L	0.500	85	85*	86*	1	51-126	41
Heptachlor epoxide	02G5002	50.0	106	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan I	02G5002	50.0	109	N.D.	µg/L	-	-	-	-	-	-	-
4,4'-DDE	02G5002	50.0	102	N.D.	µg/L	-	-	-	-	-	-	-
Dieldrin	02G5002	50.0	105	N.D.	µg/L	0.500	81	81*	82*	1	50-120	41
Endrin	02G5002	50.0	97	N.D.	µg/L	0.500	73	73*	74*	1	53-126	49
4,4'-DDD	02G5002	50.0	101	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan II	02G5002	50.0	109	N.D.	µg/L	-	-	-	-	-	-	-
4,4'-DDT	02G5002	50.0	100	N.D.	µg/L	0.490	78	78*	80*	2	51-129	46
Endrin aldehyde	02G5002	50.0	108	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan sulfate	02G5002	50.0	102	N.D.	µg/L	-	-	-	-	-	-	-
Methoxychlor	02G5002	50.0	100	N.D.	µg/L	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	02G5002	1000	101	N.D.	µg/L	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	02G5002	1000	94	N.D.	µg/L	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
PCBs												
Aroclor-1016 (PCB-1016)	02G5016	1000	114	N.D.	µg/L	5.00	89	89*	91*	2	55-123	50
Aroclor-1260 (PCB-1260)	02G5016	1000	99	N.D.	µg/L	5.00	79	79*	82*	4	55-122	50

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
TPH: Diesel												
Diesel	02G5011	1000	102	N.D.	mg/L	1.00	78	67	76	12	40-138	49
Motor oil/Lubricate oil	02G5011	1000	90	N.D.	mg/L	-	-	-	-	-	-	-

Applied P & Ch Laboratory

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APCL QA/QC Report

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Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

Regina Kirakozova,
Associate QA/QC Director
Applied P & Ch Laboratory

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APCL QA/QC Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego, CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-026533
Collected by: MES/DM
Collected on: 12/10/02
Sample description:
Soil
Project: Lowers Lakes /02HW013

Received: 12/10/02
Tested: 12/11-17/02
Reported: 01/09/03

Analysis of Soil

801-026533QC

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
WET Analysis in Soil												
Perchlorate	02W5654	0.05	111	N.D.	mg/kg	0.25	106	92	90	2	75-125	20

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Water												
Mercury	02M2454	0.0075	101	N.D.	mg/L	0.0050	100	98	98	0	75-125	20
Arsenic	02M2452	1.00	101	N.D.	mg/L	0.500	105	106	106	0	75-125	20
Barium	02M2452	10.0	100	N.D.	mg/L	4.00	110	107	107	0	75-125	20
Cadmium	02M2452	2.00	98	N.D.	mg/L	0.250	106	104	104	0	75-125	20
Chromium	02M2452	1.00	98	N.D.	mg/L	1.00	105	102	102	0	75-125	20
Copper	02M2452	4.00	98	N.D.	mg/L	1.00	102	95	96	0	75-125	20
Lead	02M2452	1.00	99	N.D.	mg/L	3.00	110	106	106	0	75-125	20
Nickel	02M2452	4.00	98	N.D.	mg/L	1.00	108	99	99	0	75-125	20
Selenium	02M2452	1.00	100	N.D.	mg/L	0.500	105	102	102	0	75-125	20
Silver	02M2452	2.00	98	N.D.	mg/L	1.00	101	99	99	0	75-125	20
Thallium	02M2452	1.00	98	N.D.	mg/L	0.500	110	106	106	0	75-125	20
Zinc	02M2452	4.00	98	N.D.	mg/L	0.500	105	100	100	0	75-125	20

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Gasoline												
Gasoline	02G4973	1000	101	N.D.	mg/L	0.810	106	109	114	4	65-134	35

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APCL QA/QC Report

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Soil												
Mercury	02M2462	0.0075	92	N.D.	mg/kg	0.834	110	110	108	2	75-125	20
Antimony	02M2468	4.00	100	N.D.	mg/kg	25.0	105	94	94	0	75-125	20
Arsenic	02M2468	1.00	99	N.D.	mg/kg	25.0	105	98	99	1	75-125	20
Beryllium	02M2468	1.00	101	N.D.	mg/kg	10.0	104	94	93	1	75-125	20
Cadmium	02M2468	2.00	100	N.D.	mg/kg	12.5	106	102	102	0	75-125	20
Chromium	02M2468	1.00	100	N.D.	mg/kg	50.0	107	101	100	1	75-125	20
Copper	02M2468	4.00	101	N.D.	mg/kg	50.0	102	102	101	1	75-125	20
Lead	02M2468	1.00	99	N.D.	mg/kg	150	110	103	103	0	75-125	20
Nickel	02M2468	4.00	100	N.D.	mg/kg	50.0	107	101	100	1	75-125	20
Selenium	02M2468	1.00	99	N.D.	mg/kg	25.0	105	101	100	1	75-125	20
Silver	02M2468	2.00	101	N.D.	mg/kg	50.0	105	104	103	1	75-125	20
Thallium	02M2468	1.00	99	N.D.	mg/kg	25.0	113	102	100	2	75-125	20
Zinc	02M2468	4.00	100	N.D.	mg/kg	25.0	108	102	100	1	75-125	20

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
TPH: Diesel												
Diesel	02G4977	1000	90	N.D.	mg/kg	50.0	105	68	74	9	40-138	49
Motor oil/Lubricate oil	02G4977	1000	98	N.D.	mg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	02G4995	50.0	85	N.D.	μg/kg	-	-	-	-	-	-	-
1,1-Dichloroethene	02G4995	50.0	90	N.D.	μg/kg	50.0	86	87	90	4	65-134	35
Chloroform	02G4995	50.0	86	N.D.	μg/kg	-	-	-	-	-	-	-
Benzene	02G4995	50.0	91	N.D.	μg/kg	50.0	86	86	87	2	70-127	29
1,2-Dichloropropane	02G4995	50.0	91	N.D.	μg/kg	-	-	-	-	-	-	-
Trichloroethene	02G4995	50.0	93	N.D.	μg/kg	50.0	88	86	87	1	65-134	34
Toluene	02G4995	50.0	92	N.D.	μg/kg	50.0	89	88	88	1	78-119	20
Chlorobenzene	02G4995	50.0	93	N.D.	μg/kg	50.0	91	88	89	1	71-126	28
Ethylbenzene	02G4995	50.0	86	N.D.	μg/kg	-	-	-	-	-	-	-

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Organochlorine pesticides												
α-BHC	02G4978	50.0	98	N.D.	μg/kg	-	-	-	-	-	-	-
γ-BHC (Lindane)	02G4978	50.0	100	N.D.	μg/kg	16.7	83	80	81	1	59-111	26
β-BHC	02G4978	50.0	114	N.D.	μg/kg	-	-	-	-	-	-	-
Heptachlor	02G4978	50.0	104	N.D.	μg/kg	16.7	81	78	79	2	40-133	47
δ-BHC	02G4978	50.0	105	N.D.	μg/kg	-	-	-	-	-	-	-
Aldrin	02G4978	50.0	107	N.D.	μg/kg	16.7	86	84	85	0	58-113	28
Heptachlor epoxide	02G4978	50.0	105	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan I	02G4978	50.0	101	N.D.	μg/kg	-	-	-	-	-	-	-
4,4'-DDE	02G4978	50.0	100	N.D.	μg/kg	-	-	-	-	-	-	-
Dieldrin	02G4978	50.0	105	N.D.	μg/kg	16.7	82	80	80	0	40-135	47
Endrin	02G4978	50.0	97	N.D.	μg/kg	16.7	81	72	74	3	40-139	50
4,4'-DDD	02G4978	50.0	102	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan II	02G4978	50.0	106	N.D.	μg/kg	-	-	-	-	-	-	-
4,4'-DDT	02G4978	50.0	104	N.D.	μg/kg	16.7	60	73	75	3	40-139	50
Endrin aldehyde	02G4978	50.0	113	N.D.	μg/kg	-	-	-	-	-	-	-
Endosulfan sulfate	02G4978	50.0	104	N.D.	μg/kg	-	-	-	-	-	-	-
Methoxychlor	02G4978	50.0	101	N.D.	μg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
PCBs												
Aroclor-1016 (PCB-1016)	02G4979	1000	105	N.D.	μg/kg	167	91	103	102	1	40-139	49
Aroclor-1260 (PCB-1260)	02G4979	1000	96	N.D.	μg/kg	167	90	97	97	1	42-137	47

*: LCS/LCSD is used.

Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

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Applied P & Ch Laboratory

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APCL QA/QC Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego, CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-032417
Collected by: MES
Collected on: 03/26/03
Sample description:
Water
Project: Lower Lakes, HD FCB. /02HW013

Received: 03/26/03
Tested: 03/26-04/02/03
Reported: 05/21/03

Analysis of Water

801-032417QC

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
WET Analysis in Water												
Biological Oxygen Demand (BOD)	03W2158	-	-	N.D.	mg-O_2/L	198	97	97*	-	-	80-120	-
Chloride Cl^- by Titration	03W2155	-	-	N.D.	mg/L	50.0	100	99	101	2	85-115	10
Nitrate and Nitrite, as N	03W2198	0.250	95	N.D.	mg/L	1.00	94	105	104	1	75-125	20
Nitrite as N-NO_2^-, by Color.	03W2164	0.150	96	N.D.	mg/L	0.150	93	91	93	1	75-124	25
Solids, Total Dissolved (TDS)	03W2143	-	-	N.D.	mg/L	400	98	95	95	0	80-119	20
Sulfate SO_4^{--}, Turbimetric	03W2186	20.0	98	2.68	mg/L	100	94	124	123	1	75-125	20
Sulfide, Dissolved	03W2154	0.400	101	N.D.	mg/L	0.400	108	82	79	4	75-125	20
Chromium (VI)	03W2152	0.250	102	N.D.	mg/L	0.250	86	96	98	2	75-125	20
Perchlorate	03W2140	0.050	93	N.D.	mg/L	0.050	93	97	99	2	75-125	20

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Water												
Antimony	03M1268	4.00	100	N.D.	mg/L	0.500	103	101	100	1	75-125	20
Arsenic	03M1268	1.00	100	N.D.	mg/L	0.500	107	102	102	1	75-125	20
Beryllium	03M1268	1.00	101	N.D.	mg/L	0.200	101	98	99	1	75-125	20
Cadmium	03M1268	2.00	100	N.D.	mg/L	0.250	105	100	101	1	75-125	20
Chromium	03M1268	1.00	100	N.D.	mg/L	1.00	109	103	103	1	75-125	20
Copper	03M1268	4.00	100	N.D.	mg/L	1.00	108	104	104	1	75-125	20
Lead	03M1268	1.00	100	N.D.	mg/L	3.00	111	104	104	1	75-125	20
Nickel	03M1268	4.00	99	N.D.	mg/L	1.00	108	102	103	1	75-125	20
Selenium	03M1268	1.00	100	N.D.	mg/L	0.500	110	101	101	1	75-125	20
Silver	03M1268	2.00	100	N.D.	mg/L	1.00	106	100	101	1	75-125	20
Thallium	03M1268	1.00	98	N.D.	mg/L	0.500	104	99	98	1	75-125	20
Zinc	03M1268	4.00	100	N.D.	mg/L	0.500	109	105	105	1	75-125	20
Mercury	03M1272	0.0075	97	N.D.	mg/L	0.0050	102	88	89	1	75-125	20

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Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Gasoline												
Gasoline	03G1854	1000	101	N.D.	mg/L	1.00	100	113	113	0	65-134	35

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
TPH: Diesel												
Diesel	03G1868	1000	98	N.D.	mg/L	1.00	76	76*	72*	5	59-128	35
Motor oil/Lubricate oil	03G1868	1000	102	N.D.	mg/L	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	03G1879	50.0	87	N.D.	µg/L	-	-	-	-	-	-	-
1,1-Dichloroethene	03G1879	50.0	95	N.D.	µg/L	50.0	100	96	96	0	66-133	34
Chloroform	03G1879	50.0	106	N.D.	µg/L	-	-	-	-	-	-	-
Benzene	03G1879	50.0	97	N.D.	µg/L	50.0	99	96	97	1	65-134	35
1,2-Dichloropropane	03G1879	50.0	95	N.D.	µg/L	-	-	-	-	-	-	-
Trichloroethene	03G1879	50.0	96	N.D.	µg/L	50.0	102	100	97	3	65-124	30
Toluene	03G1879	50.0	84	N.D.	µg/L	50.0	85	84	84	0	65-131	34
Chlorobenzene	03G1879	50.0	88	N.D.	µg/L	50.0	92	89	90	1	65-130	33
Ethylbenzene	03G1879	50.0	93	N.D.	µg/L	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
1,4-Dioxane												
1,4-Dioxane	03G1883	20000	103	N.D.	µg/L	20.0	99	99*	99*	0	40-140	30

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Organochlorine pesticides												
α-BHC	03G1898	50.0	105	N.D.	µg/L	-	-	-	-	-	-	-
γ-BHC (Lindane)	03G1898	50.0	104	N.D.	µg/L	0.500	93	93*	94*	1	40-128	44
β-BHC	03G1898	50.0	100	N.D.	µg/L	-	-	-	-	-	-	-
Heptachlor	03G1898	50.0	100	N.D.	µg/L	0.500	92	92*	93*	1	40-132	47
δ-BHC	03G1898	50.0	104	N.D.	µg/L	-	-	-	-	-	-	-
Aldrin	03G1898	50.0	105	N.D.	µg/L	0.500	95	95*	96*	0	43-125	41
Heptachlor epoxide	03G1898	50.0	101	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan I	03G1898	50.0	102	N.D.	µg/L	-	-	-	-	-	-	-
4,4'-DDE	03G1898	50.0	106	N.D.	µg/L	-	-	-	-	-	-	-
Dieldrin	03G1898	50.0	100	N.D.	µg/L	0.500	89	89*	91*	3	40-125	43
Endrin	03G1898	50.0	93	N.D.	µg/L	0.500	88	88*	88*	0	42-127	43
4,4'-DDD	03G1898	50.0	110	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan II	03G1898	50.0	102	N.D.	µg/L	-	-	-	-	-	-	-
4,4'-DDT	03G1898	50.0	101	N.D.	µg/L	0.490	99	99*	102*	3	42-133	41
Endrin aldehyde	03G1898	50.0	108	N.D.	µg/L	-	-	-	-	-	-	-
Endosulfan sulfate	03G1898	50.0	97	N.D.	µg/L	-	-	-	-	-	-	-
Methoxychlor	03G1898	50.0	106	N.D.	µg/L	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
PCBs												
Aroclor-1016 (PCB-1016)	03G1881	1000	95	N.D.	µg/L	5.00	86	86*	95*	9	58-128	36
Aroclor-1260 (PCB-1260)	03G1881	1000	98	N.D.	µg/L	5.00	89	89*	98*	9	56-138	42

*: LCS/LCSD is used.

Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

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APCL QA/QC Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego, CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-032419
Collected by: MES
Collected on: 03/25/03
Sample description:
Soil
Project: Lower Lakes, HD FCB. /02HW013

Received: 03/26/03
Tested: 03/27-04/04/03
Reported: 05/21/03

Analysis of Soil

801-032419QC

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
WET Analysis in Soil												
Chromium (VI)	03W2185	0.250	100	N.D.	mg/kg	0.250	80	96	100	4	75-125	20
Perchlorate	03W2165	0.050	94	N.D.	mg/kg	0.050	94	91	91	0	75-125	20

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Water												
Mercury	03M1272	0.0075	97	N.D.	mg/L	0.0050	102	88	89	1	75-125	20
Arsenic	03M1275	1.00	100	N.D.	mg/L	0.500	112	101	101	0	75-125	20
Barium	03M1275	10.0	98	N.D.	mg/L	4.00	107	99	99	0	75-125	20
Cadmium	03M1275	2.00	99	N.D.	mg/L	0.250	104	94	95	1	75-125	20
Chromium	03M1275	1.00	99	N.D.	mg/L	1.00	109	97	98	1	75-125	20
Lead	03M1275	1.00	99	N.D.	mg/L	3.00	111	95	96	1	75-125	20
Selenium	03M1275	1.00	99	N.D.	mg/L	0.500	109	96	97	1	75-125	20
Silver	03M1275	2.00	99	N.D.	mg/L	1.00	107	96	97	1	75-125	20

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APCL QA/QC Report

Component Name	Analysis Batch #	ICV (mg/L)	ICV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
METAL Analysis in Soil												
Mercury	03M1271	0.0075	99	N.D.	mg/kg	0.834	101	100	97	3	75-125	20
Antimony	03M1269	4.00	100	N.D.	mg/kg	25.0	102	103	103	0	75-125	20
Arsenic	03M1269	1.00	100	N.D.	mg/kg	25.0	97	100	100	1	75-125	20
Beryllium	03M1269	1.00	99	N.D.	mg/kg	10.0	99	92	94	3	75-125	20
Cadmium	03M1269	2.00	103	N.D.	mg/kg	12.5	103	108	109	1	75-125	20
Chromium	03M1269	1.00	102	N.D.	mg/kg	50.0	105	104	103	0	75-125	20
Copper	03M1269	4.00	102	N.D.	mg/kg	50.0	105	109	108	1	75-125	20
Lead	03M1269	1.00	99	N.D.	mg/kg	150	103	105	106	1	75-125	20
Nickel	03M1269	4.00	102	N.D.	mg/kg	50.0	103	105	104	0	75-125	20
Selenium	03M1269	1.00	99	N.D.	mg/kg	25.0	96	103	104	1	75-125	20
Silver	03M1269	2.00	103	N.D.	mg/kg	50.0	100	105	104	1	75-125	20
Thallium	03M1269	1.00	99	N.D.	mg/kg	25.0	106	104	102	2	75-125	20
Zinc	03M1269	4.00	102	N.D.	mg/kg	25.0	100	105	103	1	75-125	20

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Gasoline												
Gasoline	03G1875	1000	97	N.D.	mg/kg	1.00	97	97*	96*	1	70-123	27

Component Name	Analysis Batch #	CCV (mg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
TPH: Diesel												
Diesel	03G1843	1000	107	N.D.	mg/kg	50.0	80	88	84	5	40-139	50
Motor oil/Lubricate oil	03G1843	1000	92	N.D.	mg/kg	-	-	-	-	-	-	-

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APCL QA/QC Report

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Volatile organics												
Vinyl chloride	03G1845	50.0	92	N.D.	µg/kg	-	-	-	-	-	-	-
1,1-Dichloroethene	03G1845	50.0	108	N.D.	µg/kg	50.0	113	108	103	4	66-133	34
Chloroform	03G1845	50.0	104	N.D.	µg/kg	-	-	-	-	-	-	-
Benzene	03G1845	50.0	92	N.D.	µg/kg	50.0	98	96	94	2	65-134	35
1,2-Dichloropropane	03G1845	50.0	88	N.D.	µg/kg	-	-	-	-	-	-	-
Trichloroethene	03G1845	50.0	98	N.D.	µg/kg	50.0	107	107	102	5	65-124	30
Toluene	03G1845	50.0	98	N.D.	µg/kg	50.0	110	107	106	1	65-131	34
Chlorobenzene	03G1845	50.0	95	N.D.	µg/kg	50.0	104	102	100	2	65-130	33
Ethylbenzene	03G1845	50.0	97	N.D.	µg/kg	-	-	-	-	-	-	-

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
1,4-Dioxane												
1,4-Dioxane	03G1900	20000	103	N.D.	µg/kg	666	98	98	100	2	40-140	30

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
Organochlorine pesticides												
α-BHC	03G1928	50.0	106	N.D.	µg/kg	-	-	-	-	-	-	-
γ-BHC (Lindane)	03G1928	50.0	105	N.D.	µg/kg	16.7	94	95	92	4	41-133	46
β-BHC	03G1928	50.0	100	N.D.	µg/kg	-	-	-	-	-	-	-
Heptachlor	03G1928	50.0	99	N.D.	µg/kg	16.7	95	94	93	1	40-134	48
δ-BHC	03G1928	50.0	102	N.D.	µg/kg	-	-	-	-	-	-	-
Aldrin	03G1928	50.0	106	N.D.	µg/kg	16.7	98	97	95	3	41-132	46
Heptachlor epoxide	03G1928	50.0	102	N.D.	µg/kg	-	-	-	-	-	-	-
Endosulfan I	03G1928	50.0	102	N.D.	µg/kg	-	-	-	-	-	-	-
4,4'-DDE	03G1928	50.0	107	N.D.	µg/kg	-	-	-	-	-	-	-
Dieldrin	03G1928	50.0	101	N.D.	µg/kg	16.7	93	93	91	3	41-132	46
Endrin	03G1928	50.0	98	N.D.	µg/kg	16.7	94	94	92	2	41-133	46
4,4'-DDD	03G1928	50.0	108	N.D.	µg/kg	-	-	-	-	-	-	-
Endosulfan II	03G1928	50.0	103	N.D.	µg/kg	-	-	-	-	-	-	-
4,4'-DDT	03G1928	50.0	99	N.D.	µg/kg	16.7	98	97	96	1	40-134	48
Endrin aldehyde	03G1928	50.0	105	N.D.	µg/kg	-	-	-	-	-	-	-
Endosulfan sulfate	03G1928	50.0	94	N.D.	µg/kg	-	-	-	-	-	-	-
Methoxychlor	03G1928	50.0	96	N.D.	µg/kg	-	-	-	-	-	-	-

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Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
PCBs												
Aroclor-1016 (PCB-1016)	03G1911	1000	91	N.D.	μg/kg	167	98	90	89	1	46-125	40
Aroclor-1260 (PCB-1260)	03G1911	1000	93	N.D.	μg/kg	167	99	89	89	0	41-134	47

*: LCS/LCSD is used.

Notation:

ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

Regina Kirakozova,
Associate QA/QC Director
Applied P & Ch Laboratory

MAXIM ANALYTICS, INC.

Maxxam Analytics Inc

SUBMISSION CASE NARRATIVE
NDMA SOIL

MAXXAM L.I.M.S. No. A310768

PROJECT: Applied P&CH Laboratory NDMA Analysis

I. Receipt

Samples were received at Maxxam on March 28, 2003.
Samples were received in good condition.

II. Holding Times

A. Sample preparation: all holding times were met.
B. Sample analysis: all holding times were met.

III. Method

The method followed was Maxxam's in-house method for NDMA analysis, Entitled "EXTRACTION & ANALYSIS OF NITROSAMINES AND NDMA BY HRMS" SOP # TO.1021.08.

IV. Preparation

Samples preparation proceeded normally. Samples were extracted on April 1, 2003.

V. Analysis

Analysis proceeded normally. Samples were analyzed on April 1, 2003.

A. Calibration: All criteria were met.

B. Mass Resolution: All criteria met.

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Maxxam Analytics Inc

C. Method Blank: All acceptance criteria were met for the method blank and no detects have been observed above the MDL.

D. Laboratory Control Spike: A LCS and LCSDUP were analyzed with all acceptance criteria met.

E. Matrix spike/Matrix spike duplicate: MS and MSD were analyzed not analyzed with these samples.

F. Surrogate Standards: All samples and QC samples met surrogate Standard criteria

G. Samples: Sample analysis proceeded normally.

H. Glass blank: All acceptance criteria for the glass blank were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Maxxam Analytics Inc., both technically and for completeness, except for any conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the HRMS Strategic Business Unit Operational Manager, as verified by the following signature.

AnnMarie Wright, B.Sc.
Laboratory Operations Manager

This report contains 80 pages.

Glossary of Definitions

NDMA	N-Nitrosodimethylamine
OPR	Ongoing Performance & Recovery Standard (Matrix spike)
PAR	Performance & Recovery Standard (Spiking Mixture)
IPR	Initial Performance & Recovery Standard (Matrix spike)
K-D	Kuderna-Danish concentrator; a device used to concentrate the analytes in a solvent
LIMS	Laboratory Information Management System
MISA	Municipal Industrial Strategy for Abatement
EPA	see USEPA
USEPA	United States Environmental Protection Agency
CEPA	Canadian Environmental Protection Agency

amp	ampere
cm	centimetre
g	gram
h	hour
ID	internal diameter
OD	outside diameter
In.	inch
L	litre
M	Molecular ion
min	minute
mL	millilitre
mm	millimetre
m/z	mass-to-charge ratio
N	Normal; gram molecular weight of solute divided by hydrogen equivalent of solute, per litre of solution
mg	milligram 10^{-3}g
µg	microgram 10^{-6}g
ng	nanogram 10^{-9}g
pg	picogram 10^{-12}g
fg	femtogram 10^{-15}g
ppm	parts per million (mg/L, mg/kg)
ppb	parts per billion (µg/L, µg/kg)
ppt	parts per trillion (ng/L, ng/kg)
ppq	parts per quadrillion (pg/L, pg/kg)
v/v	volume per unit volume
w/v	weight per unit volume
DCM	Dichloromethane (Methylene Chloride)
PFK	Perfluorokerosene
HIRES	High Resolution
GC	Gas Chromatography

MS Mass Spectrometry
HRMS High Resolution Mass Spectrometry

Acceptance Criteria
Values used by the laboratory in order to determine that a process is in control.

Accuracy It is the degree of agreement of a measured value with the true or expected value of the quantity of concern.

Analyte A Nitrosodimethylamine and/or 1,4-Dioxane parameter tested by a method.

Blind Sample It is a sample submitted for analysis whose composition is known to the submitter but unknown to the analyst. A blind sample is used to test the proficiency of a measurement process.

Calibration Standard (CAL)
Consist of a set of solutions containing known amounts of native & carbon-13-labelled NDMA and/or 1,4-Dioxane. These solutions are used to establish the relationship between the parameter's concentration & MS detector response over the expected range of sample concentration.

Calibration Verification Material
Consists of a calibration standard solution of intermediate level concentration (e.g. CS3), used to assess whether the initial calibration is still valid.

Certified Reference Material
It is a stable, homogenous, and well characterized reference material, one or more of whose property values are certified by repetitive analysis by several operators & different methodologies in one or more qualified laboratories of known precision & accuracy. This material is used to assess the accuracy of a measurement process.

CAS# Chemical Abstracts Compound Registry Number.

Control Sample
It is a reference material of known composition that is analyzed concurrently with test samples to evaluate the accuracy and/or precision of a measurement process.

EDL Estimated detection limit or detection limit.

Glassware Proof Rinse

It is the composite final solvent rinse of each piece of glassware intended for use in processing a batch of samples. Proof rinse samples are analyzed before sample processing begins.

Instrument Detection Limit

It is the smallest concentration/amount of analyte, in a solution containing only the analyte(s) of interest, which produces an instrumental response that satisfies all analyte detection & identification criteria.

IS — Internal Standard, a deuterated or ^{13}C-labelled analyte that is added to a sample extract prior to instrument analysis.

Isomer — A member of a group of compounds that differ from each other only in terms of locations of a specified number of common substituent atoms, or groups of atoms, on the parent compound.

Method Blank — Laboratory control sample using reagents, purified water, soil or relevant matrix known to be free of contaminants.

Method Detection Limit (MDL)

It is the smallest test sample concentration/amount of analyte that produces an instrumental response that satisfies all analyte detection & identification criteria when the sample is processed & analyzed according to the requirements of a specific test method. Reported MDL values reflect the composite effect of sample-related variables as well as method-related variables.

MSDS — Material Safety Data Sheet

NIOSH — National Institute of Occupational Safety & Health

Precision — It is the degree of agreement between the data generated from repetitive measurements under specified conditions. It is generally reported as the standard deviation (SD) or relative standard deviation (RSD).

%D — Percent Difference.

Quality Assurance (QA)

It is a system of activities whose purpose is to provide the producer or user of a product with the assurance that the product meets a defined standard of quality. The system consists of two separate but related activities, quality control & quality assessment.

Quality Control (QC)

It is the overall system of activities whose purpose is to control the quality of a product so that it meets the needs of users.

Recovery Standards

They are selected compounds that are added to sample extracts immediately before instrumental analysis so that surrogate (internal standard) recoveries can be calculated.

RPD (%) Relative Percent Difference.

Relative Retention Factor (RRF)

It is the quotient of a target analyte response factor (instrument response per unit weight) divided by the response factor (RF) for its corresponding labelled surrogate. An RRF value remains constant over the range of concentration for which instrument response is linear.

RSD Relative Standard Deviation.

SDS Soxhlet/Dean-Stark extractor, an extraction device applied to the extraction of solid & semi-solid materials.

Spiked blank Laboratory control sample that has been fortified with native analytes of interest.

Stock Solution A solution containing an analyte that is prepared using a reference material traceable to EPA, the National Institute of Science & Technology (NIST), or a source that will attest to the purity & authenticity of the reference material.

Surrogate A compound whose composition and chemical properties are nearly identical to those of target analytes, but which is distinguishable from target analytes by some means of detection (i.e. MS). These include deuterated or ^{13}C-labelled analogues of the target analytes, which are added to the sample prior to extraction or clean-up steps.

Window Defining Mixture

It is a solution containing the earliest & latest eluting congeners within each homologous group of target analytes on a specified GC column.

Maxxam Analytics Inc

APPLIED P & CH LABORATORY
13769 MAGNOLIA AVE
CHINO, CA
USA 91710-7018

Attention: Kenny Chan

Report Date: 2003/04/03

Your Project #: LOWER LAKES

ANALYTICAL REPORT

MAXXAM JOB #: A310768
Received: 2003/03/28, 13:14

Sample Matrix: SOLID
Samples Received: 5

Analyses	Number of Tests	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Nitrosamines by HRMS	5	2003/03/31	2003/04/01	SOP# TO-1021	EPA 607 mod

MAXXAM ANALYTICS INC.

EDMOND MCNEIL, B.Sc., C.Chem.
Senior Analyst - HRMS

Total pages: 1

Maxxam Analytics Inc

REPORT DATE: 2003/04/03

PROJECT #: LOWER LAKES
MAXXAM JOB #: A310768

NITROSAMINES BY HRMS IN SOLID

Maxxam ID		981346	981355	981356	981357	981358		
Sampling Date		2003/03/25	2003/03/25	2003/03/25	2003/03/25	2003/03/25		
Parameter	Units	SD-1	SD-2	SD-3	SD-4	SD-QC-1	SPIKED BLANK %REC	RL
% Moisture								
N-Nitrosodimethylamine	ng/g	ND	ND	ND	ND	ND	86	5.00

Recovery of Surrogates
(%)

Parameter		SD-1	SD-2	SD-3	SD-4	SD-QC-1	SPIKED BLANK %REC
D6-NDMA		69	86	63	68	79	77

ND = Not detected
RL = REPORTING LIMIT

Lori Denomme 2003/04/03
LORI DENOMME

Maxxam Analytics Inc

REPORT DATE: 2003/04/03

PROJECT #: LOWER LAKES
MAXXAM JOB #: A310768

NITROSAMINES BY HRMS IN SOLID

Maxxam ID				
Sampling Date				
Parameter	Units	SPIKED BLANK DUP %REC	METHOD BLANK	RL
% Moisture				
N-Nitrosodimethylamine	ng/g	78	ND	5.00

Recovery of Surrogates (%)

Parameter		SPIKED BLANK DUP %REC	METHOD BLANK
D6-NDMA		82	77

ND = Not detected
RL = REPORTING LIMIT

Lori Denomme 2003/04/03
LORI DENOMME

FGL ENVIRONMENTAL

Case Narrative

May 19, 2003 Lab ID : SP 303106

Sota Environmental Tech.,Inc.
16835 W. Bernardo Dr. #212
San Diego, CA 92127

Laboratory Report

Introduction:
This report package contains data and QC for SDG SP 303106

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
Travel Blank	03/26/2003	03/27/2003	SP 303106-00	LBW
BG-SW-1	03/26/2003	03/27/2003	SP 303106-01	SWP
BG-SW-2	03/26/2003	03/27/2003	SP 303106-02	SWP
BG-SW-3	03/26/2003	03/27/2003	SP 303106-03	SWP
BG-SW-QC1	03/26/2003	03/27/2003	SP 303106-04	SWP

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding times. All samples arrived at 4 °C. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

504.1	03/31/2003:A237 All preparation quality controls are within established criteria.
	04/09/2003:A237 All preparation quality controls are within established criteria.
	03/31/2003:B - GC217 All analysis quality controls are within established criteria.
	04/09/2003:B - GC217 All analysis quality controls are within established criteria.

Preparation/Analysis Traffic Report

FGL Preparation	Batch ID	Matrix	FGL Analysis	Instrument	ARL	M	TR#
Organic Calibration	---	---	EPA 504.1M	GC217	02/25/2003-B	GC	A
504.1M	03/31/2003-A	WATER	EPA 504.1M	GC217	03/31/2003-B	GC	B
504.1M	04/09/2003-A	WATER	EPA 504.1M	GC217	04/09/2003-B	GC	C

M: CLP Method Qualifier.

The traffic report number (TR#) is used to organize the data into sections separated by analysis runlogs. Each analysis runlog is assigned a unique letter starting with A. If raw data is included in this package, the raw data for an analysis runlog is numbered using this letter (e.g. A-1 -> A-78). Forms containing the TR# field, may include a two digit number following the letter which identifies which CCV/CCB brackets the data shown within the analysis runlog.

Organic

Organic Analysis Data Sheet - EPA 504.1M

Date Sampled : 03/26/2003
Date Received : 03/27/2003
Matrix : WATER

Sample ID : Travel Blank
Lab Sample ID : SP 303106-00
File : G170331B(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	98.5		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.005	U	B02

Organic Analysis Data Sheet - EPA 504.1M

Date Sampled : 03/26/2003
Date Received : 03/27/2003
Matrix : WATER

Sample ID : BG-SW-1
Lab Sample ID : SP 303106-01
File : G170331B(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	83.3		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.005	U	B02

Organic Analysis Data Sheet - EPA 504.1M

Date Sampled : 03/26/2003
Date Received : 03/27/2003
Matrix : WATER

Sample ID : BG-SW-2
Lab Sample ID : SP 303106-02
File : G170331B(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	70		B03
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.005	U	B03

Organic Analysis Data Sheet - EPA 504.1M

Date Sampled : 03/26/2003
Date Received : 03/27/2003
Matrix : WATER

Sample ID : BG-SW-3
Lab Sample ID : SP 303106-03
File : G170409B(C)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	82.7		C01
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.005	U	C01

Organic Analysis Data Sheet - EPA 504.1M

Date Sampled : 03/26/2003
Date Received : 03/27/2003
Matrix : WATER

Sample ID : BG-SW-QC1
Lab Sample ID : SP 303106-04
File : G170331B(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	95.5		B03
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.005	U	B03

System Monitoring Compound Recovery

504.1M 03/31/2003-A

TR#	Type	Lab_Id	13BrP 70-130	Tot Out
B01	Blank	SP 03033137	110	0
B01	LCS	SP 03033137	93.9	0
B01	BS	SP 03033137	97.2	0
B01	BSD	SP 03033137	110	0
B02	Sampl	SP 30310600	98.5	0
B02	Sampl	SP 30310601	83.3	0
B03	Sampl	SP 30310602	70	0
B03	Sampl	SP 30310604	95.5	0

13BrP = 1,3-Dibromopropane

System Monitoring Compound Recovery

504.1M 04/09/2003-A

TR#	Type	Lab_Id	13BrP 70-130	Tot Out
C01	Blank	SP 03040937	111	0
C01	LCS	SP 03040937	108	0
C01	BS	SP 03040937	99.8	0
C01	BSD	SP 03040937	115	0
C01	Sampl	SP 30310603	82.7	0

13BrP = 1,3-Dibromopropane

Laboratory Control Sample

504.1M 03/31/2003-A

Parameter Name	Units	True	Found	C	%R	DQO	TR#
1,2,3-Trichloropropane	ug/L	0.05882	0.050588		86.0	70-130	B01

DQO: Data Quality Objective.

Laboratory Control Sample

504.1M 04/09/2003-A

Parameter Name	Units	True	Found	C	%R	DQO	TR#
1,2,3-Trichloropropane	ug/L	0.05882	0.057941		98.5	70-130	C01

DQO: Data Quality Objective.

Matrix Spike and Duplicate Analysis

504.1M 03/31/2003-A

Parameter Name	Type	Units	QC Result	C	QC Reference	C	True	QC	Q	DQO	TR#
1,2,3-Trichloropropane	BS	ug/L	0.053529		0.00000		0.05882	91.0%		70-130	B01
	BSD	ug/L	0.065294		0.00000		0.05882	111%		70-130	B01
	BSRPD	ug/L	0.053529		0.065294		0.05882	19.8%		30	B01

QC: % indicates percent comparison, otherwise values are presented in units shown.

Matrix Spike and Duplicate Analysis

504.1M 04/09/2003-A

Parameter Name	Type	Units	QC Result	C	QC Reference	C	True	QC	Q	DQO	TR#
1,2,3-Trichloropropane	BS	ug/L	0.049118		0.00000		0.05882	83.5%		70-130	C01
	BSD	ug/L	0.057941		0.00000		0.05882	98.5%		70-130	C01
	BSRPD	ug/L	0.049118		0.057941		0.05882	16.5%		30	C01

QC: % indicates percent comparison, otherwise values are presented in units shown.

Preparation Log

504.1M 03/31/2003-A

Type	Lab_Id	Date	Time	Who	Initial	Final	Dilution
Blank	SP 03033137	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
LCS	SP 03033137	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
BS	SP 03033137	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
BSD	SP 03033137	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
Sampl	SP 30310600	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
Sampl	SP 30310601	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
Sampl	SP 30310602	03/31/2003	09:00	FSY	34ml	1.0ml	1.0
Sampl	SP 30310604	03/31/2003	09:00	FSY	34ml	1.0ml	1.0

Equivalent to CLP Method Blank Summary (Form IV).

Preparation Log

504.1M 04/09/2003-A

Type	Lab_Id	Date	Time	Who	Initial	Final	Dilution
Blank	SP 03040937	04/09/2003	09:00	FSY	34ml	1.0ml	1.0
LCS	SP 03040937	04/09/2003	09:00	FSY	34ml	1.0ml	1.0
BS	SP 03040937	04/09/2003	09:00	FSY	34ml	1.0ml	1.0
BSD	SP 03040937	04/09/2003	09:00	FSY	34ml	1.0ml	1.0
Sampl	SP 30310603	04/09/2003	09:00	FSY	34ml	1.0ml	1.0

Equivalent to CLP Method Blank Summary (Form IV).

Organic Method Blank Data Sheet - EPA 504.1M

Date Prepped : 03/31/2003
Date Analyzed : 03/31/2003
Matrix : WATER

Sample ID : Method Blank
Lab Sample ID : SP 030331-37
File : G170331B(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	110		B01
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.00000	U	B01

Organic Method Blank Data Sheet - EPA 504.1M

Date Prepped : 04/09/2003
Date Analyzed : 04/09/2003
Matrix : WATER

Sample ID : Method Blank
Lab Sample ID : SP 030409-37
File : G170409B(C)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
109-64-8	1,3-Dibromopropane	%	1.00	111		C01
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/L	1.00	0.00000	U	C01

Initial and Continuing Calibration Verification

Organic EPA 504.1M GC217

Parameter Name		Conc	Data	Time
1,3-Dibromopropane		ug/L	Area	**02/25**
		1.250	121425	15:38
Quadradic = 27750.04+		2.500	206032	16:05
71140.74*Conc+		5.000	375547	16:33
176.6555*Conc²		7.500	579908	17:00
		10.00	757429	17:27
QC Pass 0.998992 ≥ 0.99		15.00	1134287	17:54
		20.00	1520801	18:22
	03/31/2003-B CCV-00	10.00	10.690	15:38
	CCV-01	10.00	10.670	20:36
	04/01/2003-B CCV-02	10.00	10.690	01:31
	CCV-03	10.00	10.550	04:37
	04/09/2003-B CCV-00	10.00	10.520	09:26
	CCV-01	10.00	10.930	12:10
1,2,3-Trichloropropane		ug/L	Area	**02/25**
		0.1700	3931	15:38
Quadradic = 353.9642+		0.3400	6823	16:05
19451.77*Conc+		1.000	17226	16:33
-137.0709*Conc²		2.000	42484	17:00
		5.000	92154	17:27
QC Pass 0.999698 ≥ 0.99		10.00	181752	17:54
		25.00	400946	18:22
	03/31/2003-B CCV-00	5.000	5.3900	15:38
	CCV-01	5.000	5.4300	20:36
	04/01/2003-B CCV-02	5.000	5.2500	01:31
	CCV-03	5.000	4.2800	04:37
	04/09/2003-B CCV-00	5.000	5.3700	09:26
	CCV-01	5.000	4.7600	12:10

Linear and Quadradic RRF's calulated using Area(s)/[Area(is)/Conc(is)] vs Conc(s)

Continuing Calibration Verification

Organic EPA 504.1M GC217 03/31/2003-B

Parameter Name	Type	Units	True	Found	%D	%R	DQO	TR#
1,2,3-Trichloropropane	CCV	ug/L	5.000	5.3900	8.0	108	70-130	00
	CCV	ug/L	5.000	5.4300	9.0	109	70-130	01
	CCV	ug/L	5.000	5.2500	5.0	105	70-130	02
	CCV	ug/L	5.000	4.2800	14.4	85.6	70-130	03

%D = % Difference %R = % Recovery DQO=Data Quality Objective

Continuing Calibration Verification

Organic EPA 504.1M GC217 04/09/2003-B

Parameter Name	Type	Units	True	Found	%D	%R	DQO	TR#
1,2,3-Trichloropropane	CCV	ug/L	5.000	5.3700	7.0	107	70-130	00
	CCV	ug/L	5.000	4.7600	4.8	95.2	70-130	01

%D = % Difference %R = % Recovery DQO=Data Quality Objective

Case Narrative

May 16, 2003 Lab ID : SP 303105

Sota Environmental Tech.,Inc.
16835 W. Bernardo Dr. #212
San Diego, CA 92127

Laboratory Report

Introduction:
This report package contains data and QC for SDG SP 303105

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
SD-1	03/25/2003	03/27/2003	SP 303105-01	S
SD-2	03/25/2003	03/27/2003	SP 303105-02	S
SD-3	03/25/2003	03/27/2003	SP 303105-03	S
SD-4	03/25/2003	03/27/2003	SP 303105-04	S
SD-QC-1	03/25/2003	03/27/2003	SP 303105-05	S

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding times. All samples arrived at 4 °C. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

5030B	03/28/2003:A233 All preparation quality controls are within established criteria, except: The following note applies to 4-Bromofluorobenzene: 560 Surrogate percent recoveries not within the Acceptance Range (AR) due to suspected matrix interferences.
8260B	03/28/2003:A - GM207 All analysis quality controls are within established criteria.
	04/04/2003:A - GM207 All analysis quality controls are within established criteria.

Preparation/Analysis Traffic Report

FGL Preparation	Batch ID	Matrix	FGL Analysis	Instrument	ARL	M	TR#
Organic Calibration	---	---	EPA 8260	GM207	12/30/2002-A	GM	A
8260	03/28/2003-A	SOIL	EPA 8260	GM207	03/28/2003-A	GM	B
			EPA 8260	GM207	04/04/2003-A	GM	C

M: CLP Method Qualifier.

The traffic report number (TR#) is used to organize the data into sections separated by analysis runlogs. Each analysis runlog is assigned a unique letter starting with A. If raw data is included in this package, the raw data for an analysis runlog is numbered using this letter (e.g. A-1 -> A-78). Forms containing the TR# field, may include a two digit number following the letter which identifies which CCV/CCB brackets the data shown within the analysis runlog.

Organic

Organic Analysis Data Sheet - EPA 8260

Date Sampled : 03/25/2003
Date Received : 03/27/2003
Matrix : SOIL

Sample ID : SD-1
Lab Sample ID : SP 303105-01
File : M7032806(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	83.2		B02
1868-53-7	Dibromofluoromethane	%	1.00	106		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	118		B02
2037-26-5	Toluene-d8	%	1.00	91		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	5	U	B02

Organic Analysis Data Sheet - EPA 8260

Date Sampled : 03/25/2003
Date Received : 03/27/2003
Matrix : SOIL

Sample ID : SD-2
Lab Sample ID : SP 303105-02
File : M7032809(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	78.9		B02
1868-53-7	Dibromofluoromethane	%	1.00	117		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	122		B02
2037-26-5	Toluene-d8	%	1.00	88		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	5	U	B02

Organic Analysis Data Sheet - EPA 8260

Date Sampled : 03/25/2003
Date Received : 03/27/2003
Matrix : SOIL

Sample ID : SD-3
Lab Sample ID : SP 303105-03
File : M7032810(B), M7040406(C)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	5.00	81.4	D	C02
1868-53-7	Dibromofluoromethane	%	1.00	123		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	131		B02
2037-26-5	Toluene-d8	%	1.00	86.2		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	5.00	25	UD	C02

Organic Analysis Data Sheet - EPA 8260

Date Sampled : 03/25/2003
Date Received : 03/27/2003
Matrix : SOIL

Sample ID : SD-4
Lab Sample ID : SP 303105-04
File : M7032811(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	84.6		B02
1868-53-7	Dibromofluoromethane	%	1.00	116		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	126		B02
2037-26-5	Toluene-d8	%	1.00	88.3		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	5	U	B02

Organic Analysis Data Sheet - EPA 8260

Date Sampled : 03/25/2003
Date Received : 03/27/2003
Matrix : SOIL

Sample ID : SD-QC-1
Lab Sample ID : SP 303105-05
File : M7032812(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	86.4		B02
1868-53-7	Dibromofluoromethane	%	1.00	121		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	127		B02
2037-26-5	Toluene-d8	%	1.00	86.6		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	5	U	B02

System Monitoring Compound Recovery

8260 03/28/2003-A

TR#	Type	Lab_Id	BFB 80-140	2BFMe 69-151	12ClE_d4 70-130	Tol_d8 81-120	Tot Out
B02	LCS	SP 03032833	81.2	98.5	108	90.5	0
B02	Blank	SP 03032833	77.0	108	117	90.5	1
B02	Sampl	SP 30310501	83.2	106	118	91	0
B02	MS	SP 30310501	84.6	99.6	110	91.8	0
B02	MSD	SP 30310501	83.2	105	113	88.6	0
B02	Sampl	SP 30310502	78.9	117	122	88	1
B02	Sampl	SP 30310503	---	123	131	86.2	2
B02	Sampl	SP 30310504	84.6	116	126	88.3	0
B02	Sampl	SP 30310505	86.4	121	127	86.6	0
C02	LCS	SP 03032833	78.8	85.8	94.7	89.7	1
C02	Blank	SP 03032833	78.4	92.3	100	88.9	1
C02	Sampl	SP 30310503	81.4	---	---	---	3

BFB = 4-Bromofluorobenzene
2BFMe = Dibromofluoromethane
12ClE_d4 = 1,2-Dichloroethane-d4
Tol_d8 = Toluene-d8

Laboratory Control Sample

8260 03/28/2003-A

Parameter Name	Units	True	Found	C	%R	DQO	TR#

DQO: Data Quality Objective.

Matrix Spike and Duplicate Analysis

8260 03/28/2003-A

Parameter Name	Type	Units	QC Result	C	QC Reference	C	True	QC	Q	DQO	TR#

QC: % indicates percent comparison, otherwise values are presented in units shown.

Preparation Log

8260 03/28/2003-A

Type	Lab_Id	Date	Time	Who	Initial	Final	Dilution
LCS	SP 03032833	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Blank	SP 03032833	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310501	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
MS	SP 30310501	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
MSD	SP 30310501	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310502	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310503	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310504	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310505	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
LCS	SP 03032833	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Blank	SP 03032833	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0
Sampl	SP 30310503	03/28/2003	09:00	FSY	5.0g	5.0ml	1.0

Equivalent to CLP Method Blank Summary (Form IV).

Organic Method Blank Data Sheet - EPA 8260

Date Prepped : 03/28/2003
Date Analyzed : 03/28/2003
Matrix : SOIL

Sample ID : Method Blank
Lab Sample ID : SP 030328-33
File : M7032805(B)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	77.0		B02
1868-53-7	Dibromofluoromethane	%	1.00	108		B02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	117		B02
2037-26-5	Toluene-d8	%	1.00	90.5		B02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	0.00000	U	B02

Organic Method Blank Data Sheet - EPA 8260

Date Prepped : 03/28/2003
Date Analyzed : 04/04/2003
Matrix : SOIL

Sample ID : Method Blank
Lab Sample ID : SP 030328-33
File : M7040405(C)

Parameter ID	Parameter Name	Units	Dilution	Results	Qualifier	TR#
Surrogates						
460-00-4	4-Bromofluorobenzene	%	1.00	78.4		C02
1868-53-7	Dibromofluoromethane	%	1.00	92.3		C02
17060-07-0	1,2-Dichloroethane-d4	%	1.00	100		C02
2037-26-5	Toluene-d8	%	1.00	88.9		C02
Target Analytes						
96-18-4	1,2,3-Trichloropropane	ug/kg	1.00	0.00000	U	C02

Instrument Performance Check

Organic EPA 8260 GM207 12/30/2002-A

m/e	Ref	Absolute	Relative	DQO	
50	95	25368	16.0	15-40	Pass
75	95	71491	45.1	30-60	Pass
95	95	158677	100.0	100-100	Pass
96	95	10988	6.9	5-9	Pass
173	174	665	0.5	0-2	Pass
174	95	144107	90.8	50-100	Pass
175	174	10118	7.0	5-9	Pass
176	174	139776	97.0	95-101	Pass
177	176	9342	6.7	5-9	Pass

Type	Lab_Id	D/F	Date	Time	Data File	TR#
Tune	SP 02123001	1.00	12/30/2002	11:25	M7123001.LIM	A00
Rinse	SP 02123001	1.00	12/30/2002	11:47	M7123002.LIM	A00
CALS	SP 02123001	1.00	12/30/2002	12:33	M7123003.LIM	A00
CALS	SP 02123002	1.00	12/30/2002	13:18	M7123004.LIM	A00
CALS	SP 02123003	1.00	12/30/2002	14:01	M7123005.LIM	A00
CALS	SP 02123004	1.00	12/30/2002	14:33	M7123006.LIM	A00
CALS	SP 02123005	1.00	12/30/2002	15:06	M7123007.LIM	A00
CALS	SP 02123006	1.00	12/30/2002	15:39	M7123008.LIM	A00
CALS	SP 02123007	1.00	12/30/2002	16:12	M7123009.LIM	A00
Rinse	SP 02123001	1.00	12/30/2002	16:45	M7123010.LIM	A00
CALS	SP 02123008	1.00	12/30/2002	17:18	M7123011.LIM	A00
CALS	SP 02123009	1.00	12/30/2002	17:51	M7123012.LIM	A00
CALS	SP 02123010	1.00	12/30/2002	18:25	M7123013.LIM	A00
CALS	SP 02123011	1.00	12/30/2002	18:53	M7123014.LIM	A00
CALS	SP 02123012	1.00	12/30/2002	19:25	M7123015.LIM	A00
CALS	SP 02123013	1.00	12/30/2002	19:58	M7123016.LIM	A00

D/F Dilution factor.

Instrument Performance Check

Organic EPA 8260 GM207 03/28/2003-A

m/e	Ref	Absolute	Relative	DQO	
50	95	16238	20.2	15-40	Pass
75	95	41780	51.9	30-60	Pass
95	95	80432	100.0	100-100	Pass
96	95	5733	7.1	5-9	Pass
173	174	0	0.0	0-2	Pass
174	95	76638	95.3	50-100	Pass
175	174	5677	7.4	5-9	Pass
176	174	75166	98.1	95-101	Pass
177	176	4934	6.6	5-9	Pass

Type	Lab_Id	D/F	Date	Time	Data File	TR#
Tune	SP 03032801	1.00	03/28/2003	12:28	M7032801.LIM	B00
CCV	SP 03032801	1.00	03/28/2003	13:39	M7032802.LIM	B00
CCV	SP 03032802	1.00	03/28/2003	14:29	M7032803.LIM	B01
LCS	SP 03032833	1.00	03/28/2003	15:01	M7032804.LIM	B02
Blank	SP 03032833	1.00	03/28/2003	15:35	M7032805.LIM	B02
Sampl	SP 30310501	1.00	03/28/2003	16:08	M7032806.LIM	B02
MS	SP 30310501	1.00	03/28/2003	16:41	M7032807.LIM	B02
MS	SP 30310502	1.00	03/28/2003	16:41	M7032807.LIM	B02
MSD	SP 30310501	1.00	03/28/2003	17:14	M7032808.LIM	B02
MSD	SP 30310502	1.00	03/28/2003	17:14	M7032808.LIM	B02
Sampl	SP 30310502	1.00	03/28/2003	17:47	M7032809.LIM	B02
Sampl	SP 30310503	1.00	03/28/2003	18:20	M7032810.LIM	B02
Sampl	SP 30310504	1.00	03/28/2003	18:53	M7032811.LIM	B02
Sampl	SP 30310505	1.00	03/28/2003	19:26	M7032812.LIM	B02

D/F Dilution factor.

Instrument Performance Check

Organic EPA 8260 GM207 04/04/2003-A

m/e	Ref	Absolute	Relative	DQO	
50	95	17107	18.5	15-40	Pass
75	95	45246	48.9	30-60	Pass
95	95	92462	100.0	100-100	Pass
96	95	6418	6.9	5-9	Pass
173	174	154	0.2	0-2	Pass
174	95	90370	97.7	50-100	Pass
175	174	6313	7.0	5-9	Pass
176	174	87302	96.6	95-101	Pass
177	176	5757	6.6	5-9	Pass

Type	Lab_Id	D/F	Date	Time	Data File	TR#
Tune	SP 03040401	1.00	04/04/2003	15:00	M7040401.LIM	C00
CCV	SP 03040401	1.00	04/04/2003	15:24	M7040402.LIM	C00
CCV	SP 03040402	1.00	04/04/2003	17:47	M7040403.LIM	C01
LCS	SP 03032833	1.00	04/04/2003	18:19	M7040404.LIM	C02
Blank	SP 03032833	1.00	04/04/2003	18:52	M7040405.LIM	C02
Sampl	SP 30310503	5.00	04/04/2003	19:59	M7040406.LIM	C02
Sampl	SP 30310504	5.00	04/04/2003	20:32	M7040407.LIM	C02
Sampl	SP 30310505	5.00	04/04/2003	21:05	M7040408.LIM	C02

D/F Dilution factor.

Initial and Continuing Calibration Verification

Organic EPA 8260 GM207

Parameter Name	Conc	Data	Time
4-Bromofluorobenzene	ug/L	RRF	**12/30**
	25.00	0.98280	12:33
Average = 0.9737±0.026958	25.00	0.97221	13:18
	25.00	0.97471	14:01
%RSD 2.77 ≤ 15	25.00	0.98295	14:33
	25.00	0.94733	15:06
	25.00	0.93732	15:39
	25.00	0.90936	16:12
	25.00	0.99624	17:18
	25.00	0.99888	17:51
	25.00	0.99867	18:25
	25.00	0.98427	18:53
	25.00	0.99617	19:25
	25.00	0.97664	19:58
03/28/2003-A CCV-00	25.00	0.73150	13:39
CCV-01	25.00	0.81599	14:29
04/04/2003-A CCV-00	25.00	0.75728	15:24
CCV-01	25.00	0.78847	17:47
Dibromofluoromethane	ug/L	RRF	**12/30**
	25.00	0.48886	12:33
Average = 0.5038±0.010074	25.00	0.50198	13:18
	25.00	0.50494	14:01
%RSD 2.00 ≤ 15	25.00	0.48514	14:33
	25.00	0.49826	15:06
	25.00	0.49239	15:39
	25.00	0.51268	16:12
	25.00	0.51501	17:18
	25.00	0.50681	17:51
	25.00	0.51421	18:25
	25.00	0.50965	18:53
	25.00	0.50501	19:25
	25.00	0.51491	19:58
03/28/2003-A CCV-00	25.00	0.47733	13:39
CCV-01	25.00	0.46586	14:29
1,2-Dichloroethane-d4	ug/L	RRF	**12/30**
	25.00	0.33810	12:33
Average = 0.3452±0.0083081	25.00	0.34963	13:18
	25.00	0.34703	14:01
%RSD 2.41 ≤ 15	25.00	0.33106	14:33
	25.00	0.33533	15:06
	25.00	0.33890	15:39
	25.00	0.35237	16:12
	25.00	0.35549	17:18
	25.00	0.35703	17:51
	25.00	0.35337	18:25
	25.00	0.34561	18:53
	25.00	0.34517	19:25
	25.00	0.33787	19:58
03/28/2003-A CCV-00	25.00	0.37019	13:39
CCV-01	25.00	0.37086	14:29
Toluene-d8	ug/L	RRF	**12/30**
	25.00	1.1860	12:33
Average = 1.191±0.0074435	25.00	1.1888	13:18
	25.00	1.1949	14:01

Parameter Name	Conc	Data	Time
Toluene-d8	ug/L	RRF	**12/30**
%RSD 0.63 ≤ 15	25.00	1.1904	14:33
	25.00	1.1864	15:06
	25.00	1.1966	15:39
	25.00	1.2028	16:12
	25.00	1.1955	17:18
	25.00	1.1871	17:51
	25.00	1.1962	18:25
	25.00	1.1872	18:53
	25.00	1.1962	19:25
	25.00	1.1730	19:58
03/28/2003-A CCV-00	25.00	1.0987	13:39
CCV-01	25.00	1.1360	14:29
1,2,3-Trichloropropane	ug/L	RRF	**12/30**
	0.5000	0.62687	13:18
Average = 0.6272±0.039264	1.000	0.70966	12:33
	5.000	0.58893	14:01
%RSD 6.26 ≤ 15	10.00	0.63172	14:33
	50.00	0.61682	15:06
	100.0	0.61663	15:39
	200.0	0.59989	16:12
03/28/2003-A CCV-00	50.00	0.48182	13:39
04/04/2003-A CCV-00	50.00	0.54873	15:24

Linear and Quadradic RRF's calulated using Area(s)/[Area(is)/Conc(is)] vs Conc(s)

Continuing Calibration Verification

Organic EPA 8260 GM207 03/28/2003-A

Parameter Name	Type	Units	True	Found	%D	%R	DQO	TR#
1,2,3-Trichloropropane	CCV	ug/L	50.00	38.4095	23.2	76.8	70-130	00

%D = % Difference %R = % Recovery DQO=Data Quality Objective

Continuing Calibration Verification

Organic EPA 8260 GM207 04/04/2003-A

Parameter Name	Type	Units	True	Found	%D	%R	DQO	TR#
1,2,3-Trichloropropane	CCV	ug/L	50.00	43.7432	12.5	87.5	70-130	00

%D = % Difference %R = % Recovery DQO=Data Quality Objective

Internal Standard Area and RT Summary

Organic EPA 8260 GM207 12/30/2002-A

TR#	Type	Lab_Id	D/F	Time	Pentafluorobenzene Area	Pentafluorobenzene RT	1,4-difluorobenzene Area	1,4-difluorobenzene RT	2-Bromo-1-Chloropropane Area	2-Bromo-1-Chloropropane RT
--	DQO	Upper Limit	---	---	1184838	12.60	1781106	13.71	791332	16.44
--	DQO	Lower Limit	---	---	296210	11.60	445277	12.71	197833	15.44
00	Rinse	SP 02123001	1.00	11:47	---	---	---	---	---	---
00	CALS	SP 02123001	1.00	12:33	527811	12.10	810753	13.21	371915	15.94
00	CALS	SP 02123002	1.00	13:18	486173	12.10	763323	13.21	354880	15.94
00	CALS	SP 02123003	1.00	14:01	466596	12.10	743048	13.21	352224	15.94
00	CALS	SP 02123004	1.00	14:33	483654	12.10	767183	13.21	359177	15.93
00	CALS	SP 02123005	1.00	15:06	482126	12.10	770203	13.21	369735	15.94
00	CALS	SP 02123006	1.00	15:39	485674	12.10	767505	13.21	376591	15.94
00	CALS	SP 02123007	1.00	16:12	498759	12.10	800391	13.21	412899	15.94
00	Rinse	SP 02123001	1.00	16:45	---	---	---	---	---	---
00	CALS	SP 02123008	1.00	17:18	478785	12.10	763572	13.21	362267	15.94
00	CALS	SP 02123009	1.00	17:51	487335	12.10	771794	13.21	366358	15.94
00	CALS	SP 02123010	1.00	18:25	478414	12.10	767944	13.21	365480	15.94
00	CALS	SP 02123011	1.00	18:53	481981	12.10	762242	13.21	356497	15.94
00	CALS	SP 02123012	1.00	19:25	478511	12.10	758808	13.21	356744	15.94
00	CALS	SP 02123013	1.00	19:58	480923	12.10	780907	13.21	360312	15.94

Organic EPA 8260 GM207 12/30/2002-A

TR#	Type	Lab_Id	D/F	Time	1,4-Dichlorobenzene-d4 Area	1,4-Dichlorobenzene-d4 RT
--	DQO	Upper Limit	---	---	764476	21.43
--	DQO	Lower Limit	---	---	191119	20.43
00	Rinse	SP 02123001	1.00	11:47	---	---
00	CALS	SP 02123001	1.00	12:33	346857	20.93
00	CALS	SP 02123002	1.00	13:18	331411	20.94
00	CALS	SP 02123003	1.00	14:01	331926	20.93
00	CALS	SP 02123004	1.00	14:33	328355	20.93
00	CALS	SP 02123005	1.00	15:06	347694	20.93
00	CALS	SP 02123006	1.00	15:39	354641	20.93
00	CALS	SP 02123007	1.00	16:12	391180	20.93
00	Rinse	SP 02123001	1.00	16:45	---	---
00	CALS	SP 02123008	1.00	17:18	327661	20.93
00	CALS	SP 02123009	1.00	17:51	326276	20.93
00	CALS	SP 02123010	1.00	18:25	331650	20.93

DQO Area 50-200% of the initial CCV value, RT ± 0.5 minutes.

Table continued on page 22

Internal Standard Area and RT Summary

Organic EPA 8260 GM207 12/30/2002-A

TR#	Type	Lab_Id	D/F	Time	1,4-Dichlorobenzene-d4 Area	RT
--	DQO	Upper Limit	---	---	764476	21.43
--	DQO	Lower Limit	---	---	191119	20.43
00	CALS	SP 02123011	1.00	18:53	325673	20.93
00	CALS	SP 02123012	1.00	19:25	326541	20.93
00	CALS	SP 02123013	1.00	19:58	334109	20.94

DQO Area 50-200% of the initial CCV value, RT ± 0.5 minutes.

Internal Standard Area and RT Summary

Organic EPA 8260 GM207 03/28/2003-A

TR#	Type	Lab_Id	D/F	Time	Pentafluorobenzene Area	Pentafluorobenzene RT	1,4-difluorobenzene Area	1,4-difluorobenzene RT	2-Bromo-1-Chloropropane Area	2-Bromo-1-Chloropropane RT
--	DQO	Upper Limit	---	---	667716	12.60	964322	13.71	444702	16.44
--	DQO	Lower Limit	---	---	166929	11.60	241081	12.71	111176	15.44
00	CCV	SP 03032801	1.00	13:39	333858	12.10	482161	13.21	222351	15.94
01	CCV	SP 03032802	1.00	14:29	369540	12.10	510733	13.21	235428	15.94
02	LCS	SP 03032833	1.00	15:01	339528	12.10	493290	13.21	216987	15.94
02	Blank	SP 03032833	1.00	15:35	283910	12.10	431429	13.21	192862	15.94
02	Sampl	SP 30310501	1.00	16:08	238245	12.10	354610	13.21	156205	15.94
02	MS	SP 30310501	1.00	16:41	282287	12.10	409023	13.21	177819	15.94
02	MSD	SP 30310501	1.00	17:14	264353	12.10	397897	13.21	177726	15.94
02	Sampl	SP 30310502	1.00	17:47	216584	12.10	340534	13.21	155346	15.94
02	Sampl	SP 30310503	1.00	18:20	181807	12.10	287088	13.21	131235	15.94
02	Sampl	SP 30310504	1.00	18:53	219395	12.10	332672	13.21	148723	15.94
02	Sampl	SP 30310505	1.00	19:26	207547	12.10	329788	13.21	149516	15.93
02	Sampl	XXXXXXXX	5.00	19:59	220904	12.10	346704	13.21	191403	15.94
02	Sampl	XXXXXXXX	20.00	20:31	411840	12.10	601810	13.21	281248	15.94
02	Sampl	XXXXXXXX	1.00	21:04	479770	12.10	689853	13.21	308173	15.94
02	Sampl	XXXXXXXX	5.00	21:37	177065	12.10	232967	13.21	86183	15.93

Organic EPA 8260 GM207 03/28/2003-A

TR#	Type	Lab_Id	D/F	Time	1,4-Dichlorobenzene-d4 Area	1,4-Dichlorobenzene-d4 RT
--	DQO	Upper Limit	---	---	554208	21.43
--	DQO	Lower Limit	---	---	138552	20.43
00	CCV	SP 03032801	1.00	13:39	277104	20.93
01	CCV	SP 03032802	1.00	14:29	246372	20.93
02	LCS	SP 03032833	1.00	15:01	222290	20.93
02	Blank	SP 03032833	1.00	15:35	197649	20.94
02	Sampl	SP 30310501	1.00	16:08	135333	20.93
02	MS	SP 30310501	1.00	16:41	166533	20.93
02	MSD	SP 30310501	1.00	17:14	164496	20.93
02	Sampl	SP 30310502	1.00	17:47	134158	20.93
02	Sampl	SP 30310503	1.00	18:20	77930	20.94
02	Sampl	SP 30310504	1.00	18:53	107905	20.93
02	Sampl	SP 30310505	1.00	19:26	96633	20.94
02	Sampl	XXXXXXXX	5.00	19:59	193048	20.93

DQO Area 50-200% of the initial CCV value, RT ± 0.5 minutes.

Table continued on page 24

Internal Standard Area and RT Summary

Organic EPA 8260 GM207 03/28/2003-A

TR#	Type	Lab_Id	D/F	Time	1,4-Dichlorobenzene-d4 Area	RT
--	DQO	Upper Limit	---	---	554208	21.43
--	DQO	Lower Limit	---	---	138552	20.43
02	Sampl	XXXXXXXX	20.00	20:31	285952	20.93
02	Sampl	XXXXXXXX	1.00	21:04	361439	20.93
02	Sampl	XXXXXXXX	5.00	21:37	41074	20.93

DQO Area 50-200% of the initial CCV value, RT ± 0.5 minutes.

Internal Standard Area and RT Summary

Organic EPA 8260 GM207 04/04/2003-A

TR#	Type	Lab_Id	D/F	Time	Pentafluorobenzene Area	Pentafluorobenzene RT	1,4-difluorobenzene Area	1,4-difluorobenzene RT	2-Bromo-1-Chloropropane Area	2-Bromo-1-Chloropropane RT
--	DQO	Upper Limit	---	---	1088622	12.60	1487780	13.71	638690	16.44
--	DQO	Lower Limit	---	---	272156	11.60	371945	12.71	159673	15.44
00	CCV	SP 03040401	1.00	15:24	544311	12.10	743890	13.21	319345	15.94
01	CCV	SP 03040402	1.00	17:47	548515	12.10	743405	13.21	319138	15.94
02	LCS	SP 03032833	1.00	18:19	498124	12.10	677199	13.21	284110	15.94
02	Blank	SP 03032833	1.00	18:52	493307	12.10	697960	13.21	297021	15.94
02	Sampl	SP 30310503	5.00	19:59	560608	12.11	785705	13.21	325427	15.94
02	Sampl	SP 30310504	5.00	20:32	472122	12.10	679839	13.21	286568	15.94
02	Sampl	SP 30310505	5.00	21:05	432588	12.10	630071	13.21	268337	15.94
02	Sampl	XXXXXXXX	10.00	21:38	378870	12.10	544331	13.21	231127	15.94
02	Sampl	XXXXXXXX	1.00	22:10	274222	12.10	432444	13.21	174252	15.94

Organic EPA 8260 GM207 04/04/2003-A

TR#	Type	Lab_Id	D/F	Time	1,4-Dichlorobenzene-d4 Area	1,4-Dichlorobenzene-d4 RT
--	DQO	Upper Limit	---	---	756582	21.43
--	DQO	Lower Limit	---	---	189146	20.43
00	CCV	SP 03040401	1.00	15:24	378291	20.93
01	CCV	SP 03040402	1.00	17:47	360203	20.93
02	LCS	SP 03032833	1.00	18:19	317585	20.93
02	Blank	SP 03032833	1.00	18:52	331053	20.93
02	Sampl	SP 30310503	5.00	19:59	347186	20.93
02	Sampl	SP 30310504	5.00	20:32	284656	20.93
02	Sampl	SP 30310505	5.00	21:05	257800	20.93
02	Sampl	XXXXXXXX	10.00	21:38	222820	20.93
02	Sampl	XXXXXXXX	1.00	22:10	155149	20.93

DQO Area 50-200% of the initial CCV value, RT ± 0.5 minutes.

Raw Data

EPA 8260 - GM207 20021230-A

«:DATA FILE:»O:\MAS_SPEC\MS7\MS71230.SEQ

Type	#	Freq	Requirement	Status	Note	Standard	Dilution	Expiration
Tune	1	8.6	1/ 12:Hours	PASS		20021016FSY-02	2500.0	04/25/2003
CCV	0	999?	1≈/ 12:Hours	FAIL >				
InStd	1	--	1/ 1:Sample	PASS		20021016FSY-02	1000.0	04/25/2003
CALS	13	1/1	5≈/365:Days	PASS		20021227FSY-01	25000	11/30/2003
						20021227FSY-01	50000	11/30/2003
						20021227FSY-01	5000	11/30/2003
						20021227FSY-01	2500.0	11/30/2003
						20021227FSY-01	500.0	11/30/2003
						20021227FSY-01	250.00	11/30/2003
						20021227FSY-01	125.00	11/30/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	5000 5000 5000	01/30/2003 05/24/2003 01/28/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	2500.0 2500.0 2500.0	01/30/2003 05/24/2003 01/28/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	1000.0 1000.0 1666.66	01/30/2003 05/24/2003 01/28/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	500.0 500.0 1250.00	01/30/2003 05/24/2003 01/28/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	250.00 250.00 1000.0	01/30/2003 05/24/2003 01/28/2003
						20021227FSY-04 20021227FSY-02 20021227FSY-03	125.00 125.00 833.33	01/30/2003 05/24/2003 01/28/2003

Table continued on page 2

EPA 8260 - GM207 20021230-A

```
Manual Rejections by SP :FSY    at 01/15/2003:14:35:22
SP 02123007 CALS A -16:12 00 Rerun-Bromomethane (Methyl Bromide),

Manual Rejections by SP :FSY    at 01/15/2003:14:35:52
SP 02123001 CALS A -12:33 00 Rerun-n-Butylbenzene,

Manual Rejections by SP :FSY    at 01/15/2003:14:36:29
SP 02123011 CALS A -18:53 00 Rerun-Ethanol,

Manual Rejections by SP :FSY    at 01/15/2003:14:37:30
SP 02123011 CALS A -18:53 00 Rerun-1,4-Dioxane,

«:NCR:»Analysis-Limits-20030115ORG-006
SP 02123011 CALS A -18:53 00

Manual Rejections by SP :FSY    at 01/15/2003:14:40:48
SP 02123002 CALS A -13:18 00 Rerun-tert-Butanol, Rerun-DBCP,

Manual Rejections by SP :FSY    at 01/15/2003:14:41:10
SP 02123001 CALS A -12:33 00 Rerun-DBCP,

«:NCR:»Analysis-Limits-20030115ORG-006
SP 02123001 CALS A -12:33 00
«:STORAGE:»S:\2002_12\RAW_DATA\MS71230A.PDF
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EPA 8260 - GM207 20021230-A

EPA 8260 - GM207 20030328-A

«:DATA FILE:»O:\MAS_SPEC\MS7\MS70328.SEQ

«:EDITED:»04/07/2003:16:25-FSY

SAMP_NAME	TYPE	CHANGE
SP 302967-01 A	DILUTION	1.00 » 5.00
SP 302967-01 A	DILUTION	1.00 » 20.00
SP 303113-01 A	DILUTION	1.00 » 5.00

Type	#	Freq	Requirement	Status	Note	Standard	Dilution	Expiration
Tune	1	9.2	1/ 12:Hours	PASS		20021223FSY-01	2500.0	04/25/2003
CCV	2	7.1	1≈/ 12:Hours	PASS				
						20021106DJP-01	1250.0	10/09/2003
						20021129DJP-01	1000.0	06/29/2003
						20021216DJP-02	1000.0	03/31/2005
						20030113FSY-02	3333.3	11/25/2003
						20030113FSY-01	1000.0	04/24/2003
						20021227FSY-02	1000.0	05/24/2003
InStd	1	--	1/ 1:Sample	PASS				
						20021223FSY-01	1000.0	04/25/2003
CALS	0	1/88	5≈/365:Days	PASS				

«:PREP MAP:»
8260 20030328A233
«:NCR:»Analysis-Limits-20030417ORG-005

«:STORAGE:»S:\2003_03\RAW_DATA\M70328.PDF

INSERT TR# RAW DATA FILE HERE

S:\2003_03\RAW_DATA\M70328.PDF

EPA 8260 - GM207 20030328-A

EPA 8260 - GM207 20030404-A

«:DATA FILE:»O:\MAS_SPEC\MS7\MS70404.SEQ

«:EDITED:»04/07/2003:17:22-FSY

SAMP_NAME	TYPE	CHANGE
SP 030404-33 A LCS	LAB_ID	SP 03040433A LCS » SP 03032833A1LCS
SP 030404-33 A BLANK	LAB_ID	SP 03040433A Blank » SP 03032833A1Blank
SP 303105-03 A	DILUTION	1.00 » 5.00
SP 303105-04 A	DILUTION	1.00 » 5.00
SP 303105-05 A	DILUTION	1.00 » 5.00
SP 303113-01 A	DILUTION	1.00 » 10.00
STK3311616-01 A	LAB_ID	STK331161-0 ASampl » STK33116101A Sampl

Type	#	Freq	Requirement	Status	Note	Standard	Dilution	Expiration
Tune	1	7.2	1/ 12:Hours	PASS		20021223FSY-01	2500.0	04/25/2003
CCV	2	4.4	1≈/ 12:Hours	PASS				
						20021106DJP-01	1250.0	10/09/2003
						20021129DJP-01	1000.0	06/29/2003
						20021216DJP-02	1000.0	03/31/2005
						20030113FSY-02	3333.3	11/25/2003
						20030113FSY-01	1000.0	04/24/2003
						20021227FSY-02	1000.0	05/24/2003
InStd	1	--	1/ 1:Sample	PASS				
						20021223FSY-01	1000.0	04/25/2003
CALS	0	1/95	5≈/365:Days	PASS				

«:NCR:»Analysis-Limits-20030417ORG-006

«:STORAGE:»S:\2003_04\RAW_DATA\M70404.PDF

«:PREP MAP:»
8260 20030328A233

INSERT TR# RAW DATA FILE HERE

S:\2003_04\RAW_DATA\M70404.PDF

EPA 8260 - GM207 20030404-A

APPENDIX B

PHOTO 1: Northeast of Small Lower Lake Stockpile Location

PHOTO 2: Small Lower Lake Stockpile Location

PHOTO 3: Small Lower Lake and Facing the Stockpile Material

PHOTO 4: Diver Sampling at Small Lower Lake

PHOTO 5: Diver Sampling at Small Lower Lake

PHOTO 6: Large Lower Lake, Facing the Stockpile Location

PHOTO 7: Large Lower Lake at the Stockpile Location

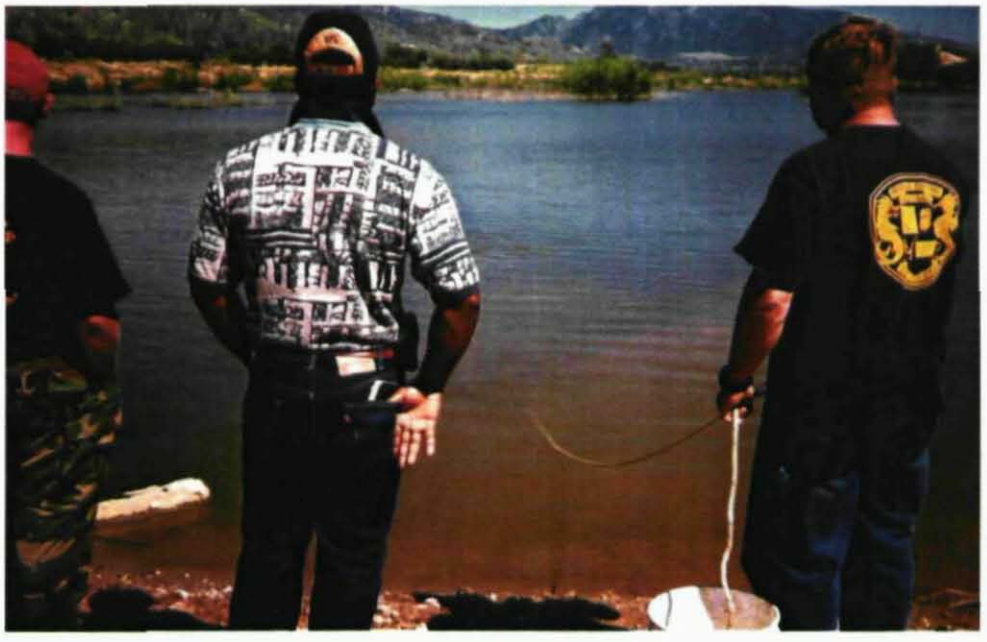


PHOTO 8: Diver Sampling at Large Lower Lake

PHOTO 9: Background Surface Water Sampling Location (1) at Haines Canyon Creek

PHOTO 10: Background Surface Water Sampling Location (2) at Haines Canyon Creek

APPENDIX C

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
HTRW CENTER OF EXPERTISE
12565 WEST CENTER ROAD
OMAHA, NEBRASKA 68144-3869

REPLY TO
ATTENTION OF:

October 8, 2002

Hazardous, Toxic and Radioactive Waste
Center of Expertise

Applied Physics & Chemistry Laboratory
ATTN: Kevin Xie
13760 Magnolia Avenue
Chino, CA 91710

Gentlemen:

This correspondence addresses the recent evaluation of Applied Physics & Chemistry Laboratory of Chino, CA by the U.S. Army Corps of Engineers (USACE) for chemical analysis in support of the USACE Hazardous, Toxic and Radioactive Waste Program.

Your laboratory is now validated for the parameters listed below:

METHOD	PARAMETERS	MATRIX[1]
9056/300.0	Anions[4]	Water[2]
9010B/9012A	Cyanide	Water[2]
9013/9012A	Cyanide	Solids[2]
8151A	Herbicides	Water[2]
8151A	Herbicides	Solids[2]
1664	Oil & Grease	Water[2]
8081A	Organochlorine Pesticides	Water[2]
8081A	Organochlorine Pesticides	Solids[2]
8082	Polychlorinated Biphenyls	Water[2]
8082	Polychlorinated Biphenyls	Solids[2]
8310	Polynuclear Aromatic Hydrocarbons	Water[2]
8310	Polynuclear Aromatic Hydrocarbons	Solids[2]
8270C	Semivolatile Organics	Water[2]
8270C	Semivolatile Organics	Solids[2]
6010B/7000A	TAL Metals[3]	Water[2]
6010B/7000A	TAL Metals[3]	Solids[2]
Mod 8015	TPH - GRO/DRO	Water[2]
Mod 8015	TPH - GRO/DRO	Solids[2]
8260B	Volatile Organics	Water[2]
8260B	Volatile Organics	Solids[2]

Remarks:

1) 'Solids' includes soils, sediments, and solid waste.

2) The laboratory has successfully analyzed a proficiency testing (PT) sample for this method/matrix.

3) TAL Metals: Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc.

4) Anions: Chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate

Based on the successful analysis of the proficiency testing (PT) samples and the outcome of the laboratory audit conducted by the Navy on October 23-25, 2001; your laboratory will be validated for sample analysis by the methods listed above. Note that any corrective action committed to by your laboratory as a result of the Navy inspection will also apply to this USACE validation. The period of validation is based on approval by the Navy and expires on January 8, 2004.

The USACE reserves the right to conduct additional laboratory inspection or to suspend validation status for any or all of the listed parameters if deemed necessary. It should be noted that your laboratory may not subcontract USACE analytical work to any other laboratory location without the approval of this office. This laboratory validation does not guarantee the delivery of any analytical samples from a USACE Contracting Officer Representative.

Any questions of comments can be directed to Richard Kissinger at (402) 697-2569. General questions regarding laboratory validation may be directed to the Laboratory Validation Coordinator at (402) 697-2574.

Sincerely,

for Marcia C. Davies, Ph.D.
Director, USACE Hazardous,
Toxic and Radioactive Waste
Center of Expertise

STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

ENVIRONMENTAL LABORATORY CERTIFICATION

Is hereby granted to

APPLIED P & CH LABORATORY

SOUTHERN CALIFORNIA

13760 MAGNOLIA AVENUE

CHINO, CA 91710

Scope of certification is limited to the
"Accredited Fields of Testing"
which accompanies this Certificate.

Continued certification status depends on successful completion of site visit, proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.

Certificate No: **1431**
Expiration Date: **01/31/2005**
Effective Date: **01/01/2003**

George C. Kulasingam

Berkeley, California
subject to forfeiture or revocation.

George C. Kulasingam, Ph.D.
Program Chief
Environmental Laboratory Accreditation Program

State of California—Health and Human Services Agency
Department of Health Services

California Department of Health Services
DIANA M. BONTÁ, R.N., Dr. P.H.
Director

GRAY DAVIS
Governor

May 1, 2002

Mr. Dominic Lau
Laboratory Director
Applied P & Ch Laboratory
13760 Magnolia Avenue
Chino, CA 91710

NELAP ON-SITE ASSESSMENT REPORT: February 20, 2002
APPLICATION REFERENCE NUMBER: NP0105-16 NEW
DATES OF ASSESSMENT: January 22-24, 2002

Dear Mr. Lau:

The Environmental Laboratory Accreditation Program (ELAP), acting as a primary accreditation authority has received and conducted a detailed review of your laboratory's Corrective Action Report (CAR).

Your CAR was submitted in a timely manner and we have found your plan of corrective actions as described in your CAR to be acceptable.

Your laboratory has completed the on-site assessment aspect of the NELAP accreditation process.

Please be advised that failure to implement the corrective actions as stated in your corrective action report may result in denial/revocation for fields of testing, specific methods, or analytes within those fields of testing (NELAC Standards 4.4.1 and 4/1/3 g).

For items that you specify an estimated date of completion at a future time, your laboratory is obligated to inform ELAP of actual completion and implementation and have documentation of corrective actions available for ELAP upon request.

Should you have any questions or require further assistance, please contact Nelson Lan.

Remarks: The evaluation of your corrective action response (CAR) for the aquatic toxicity bioassay has been completed and found satisfactory by Steve Boggs on April 24, 2002.

Sincerely,

George C. Kulasingam, Ph.D.
Program Chief
Environmental Laboratory Accreditation Program

Cc: Nelson Lan
Assessment Team Leader

BY CERTIFIED MAIL
ARTICLE NUMBER: 7000 0600 0023 8768 3497
RETURN RECEIPT REQUESTED

DEPARTMENT OF HEALTH SERVICES
2151 BERKELEY WAY
BERKELEY, CA 94704-1011

(510) 540-2800

February 2, 2000

Certificate No.: 1431

DOMINIC LAU
APPLIED P & CH LABORATORY
13760 MAGNOLIA AVENUE
CHINO, CA 91710-

Dear DOMINIC LAU:

This is to advise you that the laboratory named above has been certified as an environmental testing laboratory pursuant to the provisions of the California Environmental Laboratory Improvement Act of 1988 (Health and Safety Code (HSC), Division 101, Part 1, Chapter 4, commencing with Section 100825).

The Fields of Testing for which this laboratory has been certified under this Act are indicated in the enclosed "List of Approved Fields of Testing and Analytes." Certification shall remain in effect until **January 31, 2001** unless revoked. This certificate is subject to an annual fee as prescribed by Section 100860(a), HSC, due on January 31, 2000.
Your application for renewal must be received 90 days before the expiration of your certificate to remain in force according to the California Code of Regulations, Title 22, Division 4, Chapter 19, Section 64801 through 64827.

Please note that your laboratory is required to notify the Environmental Laboratory Accreditation Program of any major changes in the laboratory such as the transfer of ownership, change of laboratory director, change in location, or structural alterations which may affect adversely the quality of analyses (Section 100845(b) and (d), HSC).

Your continued cooperation is essential in order to maintain a reputation for the high quality of the data produced by environmental laboratories certified by the State of California.

If you have any questions, please contact Scott Nee at (213) 580-5731.

Sincerely,

George C. Kulasingam

George C. Kulasingam, Ph.D.
Program Chief
Environmental Laboratory Accreditation Program

Enclosure

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
List of Approved Fields of Testing and Analytes

APPLIED P & CH LABORATORY
13760 MAGNOLIA AVENUE
CHINO, CA

PHONE No. (909) 590-1828
COUNTY SAN BERNARDINO

Certificate No. **1431**
Expiration Date 01/31/2001

01 Microbiology of Drinking Water and Wastewater

01.01A	Total and Fecal Coliform in Drinking Water by Multiple Tube Fermentation
01.04A	Total and Fecal Coliform in Drinking Water by Clark's Presence/Absence
01.05	Heterotrophic Plate Count
01.06	Total Coliform in Wastewater by Multiple Tube Fermentation
01.07	Fecal Coliform in Wastewater by Multiple Tube Fermentation
01.12	Total Coliform in Source Water by Multiple Tube Fermentation
01.13	Fecal Coliform in Source Water by Multiple Tube Fermentation

02 Inorganic Chemistry and Physical Properties of Drinking Water

02.01	Alkalinity
02.02	Calcium
02.03	Chloride
02.04	Corrosivity
02.05	Fluoride
02.06	Hardness
02.07	Magnesium
02.08	MBAS
02.09	Nitrate
02.10	Nitrite
02.11	Sodium
02.12	Sulfate
02.13A	Total Dissolved Solids
02.13B	Conductivity
02.16	Phosphate, ortho
02.17	Silica
02.18	Cyanide
02.19	Potassium

03 Analysis of Toxic Chemical Elements in Drinking Water

03.01	Arsenic
03.02	Barium
03.03	Cadmium
03.04	Chromium, total
03.05	Copper
03.06	Iron
03.07	Lead
03.08	Manganese
03.09	Mercury
03.10	Selenium
03.11	Silver
03.12	Zinc
03.13	Aluminum
03.15	Antimony
03.16	Beryllium
03.17	Nickel
03.18	Thallium

04 Organic Chemistry of Drinking Water by GC/MS

04.02	EPA Method 524.2
04.03	EPA Method 525.2
04.06	EPA Method 548.1

05 Organic Chemistry of Drinking Water (excluding GC/MS)

05.06	EPA Method 504.1
05.07	EPA Method 505
05.08	EPA Method 506
05.09	EPA Method 507
05.10A	EPA Method 508
05.10B	EPA Method 508.1
05.13A	EPA Method 515.1
05.13B	EPA Method 515.2
05.14	EPA Method 531.1
05.15	EPA Method 547
05.17	EPA Method 549.1
05.18	EPA Method 550
05.20	EPA Method 551
05.23	EPA Method 551 Trihalomethanes only

08 Aquatic Toxicity Bioassays

08.01.01	Hazardous Waste Aquatic Bioassays (Title 22, CCR 66261.24) using fathead minnow
08.03.01	Wastewater Testing According to EPA/600/4-85/013 using fathead minnow

09 Physical Properties Testing of Hazardous Waste

09.01	Ignitability by Flashpoint Determination
09.02	Corrosivity - pH Determination
09.03	Corrosivity - towards steel
09.04	Reactivity

10 Inorganic Chemistry and Toxic Chemical Elements of Hazardous Waste

10.01	Antimony
10.02	Arsenic
10.03	Barium
10.04	Beryllium
10.05	Cadmium
10.06	Chromium, total
10.07	Cobalt
10.08	Copper
10.09	Lead
10.10	Mercury
10.11	Molybdenum
10.12	Nickel
10.13	Selenium
10.14	Silver
10.15	Thallium
10.16	Vanadium
10.17	Zinc
10.18	Chromium (VI)
10.19	Cyanide
10.20	Fluoride
10.21	Sulfide

11 Extraction Tests of Hazardous Waste

11.01	California Waste Extraction Test (WET)
11.02	Extraction Procedure Toxicity
11.03	Toxicity Characteristic Leaching Procedure (TCLP) All Classes

12 Organic Chemistry of Hazardous Waste by GC/MS

12.01	EPA Method 8240B
12.03	EPA Method 8270B
12.06	EPA Method 8260A

13 Organic Chemistry of Hazardous Waste (excluding GC/MS)

13.01	EPA Method 8010B
13.02	EPA Method 8015A
13.03	EPA Method 8020A
13.04	EPA Method 8030A
13.05	EPA Method 8040A
13.06A	EPA Method 8060
13.06B	EPA Method 8061
13.07A	EPA Method 8080A
13.07B	EPA Method 8081
13.08	EPA Method 8090
13.09	EPA Method 8100
13.10A	EPA Method 8120A
13.10B	EPA Method 8121
13.11A	EPA Method 8140
13.11B	EPA Method 8141A
13.12A	EPA Method 8150B
13.12B	EPA Method 8151
13.13	EPA Method 8310
13.14A	EPA Method 632
13.14B	EPA Method 8318
13.15	Total Petroleum Hydrocarbons - Gasoline
13.16	Total Petroleum Hydrocarbons - Diesel
13.17	TRPH - Screening by IR
13.18	EPA Method 8011
13.19	EPA Method 8021A
13.20	EPA Method 8070
13.21	EPA Method 8110
13.23	EPA Method 8330
13.24A	EPA Method 8080A PCBs only
13.24B	EPA Method 8081 PCBs only
13.25A	EPA Method 8080A Organochlorine Pesticides only
13.25B	EPA Method 8081 Organochlorine Pesticides only
13.26	EPA Method 8031
13.27	EPA Method 8032
13.30	EPA Method 8321

16 Wastewater Inorganic Chemistry, Nutrients and Demand

16.01	Acidity
16.02	Alkalinity
16.03	Ammonia
16.04	Biochemical Oxygen Demand

16.05 Boron
16.06 Bromide
16.07 Calcium
16.08 Carbonaceous Biological Oxygen Demand (cBOD)
16.09 Chemical Oxygen Demand
16.10 Chloride
16.11 Chlorine Residual, total
16.12 Cyanide
16.13 Cyanide amenable to Chlorination
16.14 Fluoride
16.15 Hardness
16.16 Kjeldahl Nitrogen
16.17 Magnesium
16.18 Nitrate
16.19 Nitrite
16.20 Oil and Grease
16.21 Organic Carbon
16.22 Oxygen, Dissolved
16.23 pH
16.24 Phenols
16.25 Phosphate, ortho
16.26 Phosphorus, total
16.27 Potassium
16.28 Residue, Total
16.29 Residue, Filterable (Total Dissolved Solids)
16.30 Residue, Nonfilterable (Total Suspended Solids)
16.31 Residue, Settleable (Settleable Solids)
16.32 Residue, Volatile
16.33 Silica
16.34 Sodium
16.35 Specific Conductance
16.36 Sulfate
16.37 Sulfide (includes total & soluble)
16.38 Sulfite
16.39 Surfactants (MBAS)
16.40 Tannin and Lignin
16.41 Turbidity
16.44 Total Recoverable Petroleum Hydrocarbons by IR
16.45 Total Organic Halides

17 **Toxic Chemical Elements in Wastewater**

17.01 Aluminum
17.02 Antimony
17.03 Arsenic
17.04 Barium
17.05 Beryllium
17.06 Cadmium
17.07 Chromium (VI)
17.08 Chromium, total
17.09 Cobalt
17.10 Copper
17.11 Gold

17.13	Iron
17.14	Lead
17.15	Manganese
17.16	Mercury
17.17	Molybdenum
17.18	Nickel
17.19	Osmium
17.24	Selenium
17.25	Silver
17.27	Thallium
17.28	Tin
17.29	Titanium
17.30	Vanadium
17.31	Zinc

18 Organic Chemistry of Wastewater by GC/MS

18.01	EPA Method 624
18.02	EPA Method 625
18.04	EPA Method 1625
18.06	EPA Method 1624

19 Organic Chemistry of Wastewater (excluding GC/MS)

19.01	EPA Method 601
19.02	EPA Method 602
19.03	EPA Method 603
19.04	EPA Method 604
19.06	EPA Method 606
19.07	EPA Method 607
19.08	EPA Method 608
19.09	EPA Method 609
19.10	EPA Method 610
19.11	EPA Method 611
19.12	EPA Method 632
19.14	EPA Method 612

STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES

ENVIRONMENTAL LABORATORY CERTIFICATION

is hereby granted to

FGL ENVIRONMENTAL

SANTA PAULA

853 CORPORATION STREET

SANTA PAULA, CALIFORNIA

to conduct analyses of environmental samples as specified in the "List of Approved Fields of Testing and Analytes" which accompanies this Certificate.

This Certificate is granted in accordance with provisions of Section 1010, et seq. (New Section 100825) of the Health and Safety Code.

Certificate No.: 1573

Expiration Date: 07/31/2003

Issued on: 07/01/2001

at Berkeley, California,
subject to forfeiture or revocation.

George C. Kulasingam

George C. Kulasingam, Ph.D.
Manager
Environmental Laboratory Accreditation Program

State of California—Health and Human Services Agency
Department of Health Services

California Department of Health Services

DIANA M. BONTÁ, R.N., Dr. P.H.
Director

GRAY DAVIS
Governor

December 2, 2002

Certificate No 1573

KELLY DUNNAHOO
FRUIT GROWERS LABORATORY, INC.
P.O. BOX 272
SANTA PAULA, CA 93061-0272

Dear KELLY DUNNAHOO:

Enclosed is an amended copy of your Accredited Fields of Testing list.

If you have any questions, please contact our office at (510) 540-2800.

Sincerely,

George C. Kulasingam

George C. Kulasingam, Ph.D.
Program Chief
Environmental Laboratory Accreditation Program

Enclosure

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
Accredited Fields of Testing

FRUIT GROWERS LABORATORY, INC.
FGL ENVIRONMENTAL - SANTA PAULA
853 CORPORATION STREET
SANTA PAULA, CA 93060

Lab Phone (805) 659-0910

Certificate No: 1573 **Renew Date: 7/31/2003**

Field of Testing: 01 - Microbiology of Drinking Water and Wastewater

01.01A	01	Total and Fecal Coliform	SM9221A,B,E
01.03	00	Total Coliform and E. coli	SM9223
01.05	01	Heterotrophic Plate Count	SM9215B
01.06	01	Total Coliform	SM9221B
01.07	01	Fecal Coliform	SM9221C,E
01.12	01	Total Coliform	SM9221A,B,C
01.13	00	Fecal Coliform	SM9221E
01.16	00	Total Coliform	SM9223

Field of Testing: 02 - Inorganic Chemistry and Physical Properties of Drinking Water

02.01	00	Alkalinity
02.02	00	Calcium
02.03	00	Chloride
02.04	00	Corrosivity
02.05	00	Fluoride
02.06	00	Hardness
02.07	00	Magnesium
02.08	00	MBAS
02.09	00	Nitrate
02.10	00	Nitrite
02.11	00	Sodium
02.12	00	Sulfate
02.13	00	Total Dissolved Solids and Conductivity
02.16	00	Phosphate, Ortho
02.17	00	Silica
02.18	00	Cyanide
02.19	00	Potassium

Field of Testing: 03 - Analysis of Toxic Chemical Elements in Drinking Water

03.01	00	Arsenic
03.02	00	Barium
03.03	00	Cadmium
03.04	00	Chromium, Total
03.05	00	Copper
03.06	00	Iron
03.07	00	Lead
03.08	00	Manganese
03.09	00	Mercury
03.10	00	Selenium
03.11	00	Silver
03.12	00	Zinc
03.13	00	Aluminum
03.15	00	Antimony
03.16	00	Beryllium
03.17	00	Nickel
03.18	00	Thallium

As of 12/2/2002 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

FRUIT GROWERS LABORATORY, INC.

Certificate No: 1573
Renew Date: 7/31/2003

03.19	00	Chromium (VI)
Field of Testing:	04 - Organic Chemistry of Drinking Water by GC/MS	
04.02	01	Volatile Organic Compounds — EPA 524.2
04.02	357	1,2,3-Trichloropropane — EPA 504.1
04.08	01	PAH/Adipates/Phthalates — EPA 524.2
Field of Testing:	05 - Organic Chemistry of Drinking Water (excluding GC/MS)	
05.04	01	Volatile Organic Compounds — EPA 502.2
05.06	01	EDB and DBCP — EPA 504.1
05.07	01	Pesticides — EPA 505
05.09	01	N-, P- Pesticides — EPA 507
05.13	01	Chlorophenoxy Herbicides — EPA 515.1
05.14	01	Carbamates — EPA 531.1
05.15	01	Glyphosate — EPA 547
05.16	01	Endothall — EPA 548.1
05.17	01	Diquat and Paraquat — EPA 549.1
05.21	01	Dalapon — EPA 552.1
05.23	01	Trihalomethanes — EPA 551
05.99	01	Crassostrea gigas — EPA 508
Field of Testing:	06 - Radiochemistry	
06.01	00	Gross Alpha and Beta Radiation
06.02	00	Total Alpha Radium
06.03	00	Radium-226
06.04	00	Uranium
06.05	00	Radon-222
06.08	00	Strontium-90
06.09	00	Tritium
06.10	00	Gamma and Photon Emitters
06.11	00	Gross Alpha by Coprecipitation
06.12	00	Radium-228
06.14	00	Gross Alpha and Beta in Hazardous Wastes
06.15	00	Alpha Emitting Radium Isotopes in Hazardous Waste
06.16	00	Radium 228 in Hazardous Wastes
Field of Testing:	09 - Physical Properties Testing of Hazardous Waste	
09.01	00	Ignitability
09.02	00	Corrosivity - pH Determination
Field of Testing:	10 - Inorganic Chemistry and Toxic Chemical Elements of Hazardous Waste	
10.01	00	Antimony
10.02	00	Arsenic
10.03	00	Barium
10.04	00	Beryllium
10.05	00	Cadmium
10.06	00	Chromium, Total
10.07	00	Cobalt
10.08	00	Copper
10.09	00	Lead
10.10	00	Mercury
10.11	00	Molybdenum
10.12	00	Nickel
10.13	00	Selenium
10.14	00	Silver
10.15	00	Thallium
10.16	00	Vanadium

As of 12/2/2002 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

FRUIT GROWERS LABORATORY, INC.

Certificate No: 1573
Renew Date: 7/31/2003

10.17	00	Zinc	
10.18	00	Chromium (VI)	
10.19	00	Cyanide	
10.20	00	Fluoride	
10.21	00	Sulfide	
Field of Testing:		11 - Extraction Tests of Hazardous Waste	
11.01	01	Waste Extraction Test (WET)	CCR Chapter11, Article 5, Appendix II
11.03	01	Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311
Field of Testing:		12 - Organic Chemistry of Hazardous Waste by GC/MS	
12.03	01	Semi-volatile Organics	EPA 8270C
12.06	01	Volatile Organic Compounds	EPA 8260B
Field of Testing:		13 - Organic Chemistry of Hazardous Waste (excluding GC/MS)	
13.01	01		EPA 8010B
13.03	01		EPA 8020A
13.11	01	Organophosphorus Pesticides	EPA 8141A
13.12	01	Chlorinated Herbicides	EPA 8151A
13.13	01	Polynuclear Aromatic Hydrocarbons	EPA 8310
13.14	01	Carbamates, N-methylcarbamates	EPA 8318
13.15	01	Total Petroleum Hydrocarbons - Gasoline	LUFT
13.16	01	Total Petroleum Hydrocarbons - Diesel	LUFT
13.17	01	TRPH Screening	EPA 418.1
13.18	01	EDB and DBCP	EPA 8011
13.19	01	Volatile Organic Compounds	EPA 8021B
13.23	01	Nitroaromatics and Nitramines	EPA 8330
Field of Testing:		16 - Wastewater Inorganic Chemistry, Nutrients and Demand	
16.01	00	Acidity	
16.02	00	Alkalinity	
16.03	00	Ammonia	
16.04	00	Biochemical Oxygen Demand	
16.05	00	Boron	
16.06	00	Bromide	
16.07	00	Calcium	
16.09	00	Chemical Oxygen Demand	
16.10	00	Chloride	
16.11	00	Chlorine Residual, Total	
16.12	00	Cyanide	
16.13	00	Cyanide, amenable	
16.14	00	Fluoride	
16.15	00	Hardness - Total as CaCO3	
16.16	00	Kjeldahl Nitrogen	
16.17	00	Magnesium	
16.18	00	Nitrate	
16.19	00	Nitrite	
16.20	00	Oil and Grease	
16.21	00	Total Organic Carbon	
16.22	00	Oxygen,dissolved	
16.23	00	pH	
16.24	00	Phenols	
16.25	00	Phosphate, Ortho	
16.26	00	Phosphorus, Total	
16.27	00	Potassium	
16.28	00	Residue, Total	

FRUIT GROWERS LABORATORY, INC.

Certificate No: 1573
Renew Date: 7/31/2003

16.29	00	Residue, Filterable	
16.30	00	Residue, Non-filterable	
16.31	00	Residue, Settleable	
16.32	00	Residue, Volatile	
16.33	00	Silica, Dissolved	
16.34	00	Sodium	
16.35	00	Conductivity	
16.36	00	Sulfate	
16.37	00	Sulfide	
16.38	00	Sulfite	
16.39	00	Surfactants	
16.40	00	Tannin and Lignin	
16.41	00	Turbidity	
16.44	00	Total Recoverable Petroleum Hydrocarbons	
16.45	00	Total Organic Halides	

Field of Testing: 17 - Toxic Chemical Elements in Wastewater

17.01	00	Aluminum	
17.02	00	Antimony	
17.03	00	Arsenic	
17.04	00	Barium	
17.05	00	Beryllium	
17.06	00	Cadmium	
17.07	00	Chromium (VI)	
17.08	00	Chromium, Total	
17.09	00	Cobalt	
17.10	00	Copper	
17.11	00	Gold	
17.13	00	Iron	
17.14	00	Lead	
17.15	00	Manganese	
17.16	00	Mercury	
17.17	00	Molybdenum	
17.18	00	Nickel	
17.24	00	Selenium	
17.25	00	Silver	
17.27	00	Thallium	
17.28	00	Tin	
17.29	00	Titanium	
17.30	00	Vanadium	
17.31	00	Zinc	

Field of Testing: 18 - Organic Chemistry of Wastewater by GC/MS

18.01	01	All Volatile Organics	EPA 624
18.02	01	All Acid/base/neutral Compounds	EPA 625

Field of Testing: 19 - Organic Chemistry of Wastewater (excluding GC/MS)

19.01	01	Halogenated Volatiles	EPA 601
19.02	01	Aromatic Volatiles	EPA 602
19.08	01	PCBs and Organochlorine Pesticides	EPA 608
19.10	01	Polynuclear Aromatics	EPA 610
19.12	01	Carbamates	EPA 632

As of 12/2/2002 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

NDMA Laboratory Analyses

Last Update: April 3, 2003

General Considerations
Acceptable Analytical Approaches
Laboratories Capable of Low-Level Analyses for NDMA

As mentioned **elsewhere**, N-nitrosodimethylamine (NDMA) is not regulated in drinking water—therefore, no approved method exists for measurement of NDMA at concentrations near a nanogram per liter (ng/L), or 1/1000 of a ppb. The Department of Health Services' (DHS') general and specific comments related to analyses of NDMA follow.

Additional information on laboratory methods for NDMA can be obtained from Dr. Kusum Perera of DHS' Sanitation and Radiation Laboratory, at (510) 540-2201.

General Considerations

- Due to the variety of methods available for NDMA analysis, DHS is providing the procedural guidelines for analysis, presented below.
- There will not be a formal approval process for NDMA-testing laboratories (as was the case with **perchlorate**).
- Performance evaluation samples are not available at this time for NDMA.
- The Drinking Water Program will determine data acceptability on a case by case basis. Generally, data meeting acceptability criteria listed below may be deemed reliable.
- Once approved method(s) and performance evaluation samples become available, it is anticipated that a formal accreditation process will be established through the ELAP.

Acceptable Analytical Approaches

- Several approaches are available for analysis of NDMA at levels at or below 2 ng/L (0.002 ppb).
- Continuous liquid-liquid extraction or similar techniques capable of reproducible recovery (<20%RSD precision) such that the GC/MS signal intensity is sufficient to achieve the level at or below 2 ng/L is required.
- Gas Chromatographic/Mass Spectrometric methods offer the most sensitive and definitive measurement systems for analysis of NDMA in the low ng/L range. High-resolution electron impact mass spectrometry, and low-resolution chemical ionization (using ammonia, methanol, etc.) or other mass spectrometric techniques with equivalent sensitivity are acceptable.
- NDMA-d_6 is used as an internal standard to correct for recovery and to ensure reliable results.
- Blanks must be free of NDMA contamination (<0.5 ng/L).

- Mass calibration must be performed in the usual manner (FC43, PFK, etc.). For greater sensitivity, ions in the critical low-mass range may be biased high but within specifications of the acceptable range.
- Extracts are analyzed either by low-resolution GC/MS with the mass spectrometer operating in the SIM or by high-resolution instruments for greater sensitivity and lower detection limits.
- For positive chemical ionization, the M+1 (75) and another adduct ion is used for confirmation and quantification. If NDMA is identified with a single ion, (High-Resolution instruments), it must have sufficient resolution for unique identification.
- A calibration curve consisting of at least five standards from approximately 1 ng/L to 100 ng/L range (to bracket the concentrations in the original sample) must be available. The Mean Response Factor (RF) and Standard Deviation (SD) are calculated from the calibration standards. RSD must be within 20%.
- A method detection limit (MDL) study using the EPA protocol (40CFR136 Appendix B) must be available.
- The Reporting Level should be no less than 3 times the MDL.
- Calibration curve must be verified on an ongoing basis using continuing calibration verification (CCV) standard at the mid-range of the calibration curve. The % Difference between the CCV standard Response Factor and the mean Response Factor in the initial calibration must be within 20%.
- Laboratory Fortified Blanks (LFB) must be run at the Reporting Level to demonstrate method performance.
- Both precision and accuracy of the analytical process must be demonstrated for each batch of samples by the analysis of matrix spike and matrix spike duplicates (MS/MSD) at the Reporting Level. However, if the sample matrix has analyte, it should be spiked at an equivalent concentration.
- The precision as measured by the RSD should be within 20%. Accuracy as measured by % Recovery should be 70-130% for MS/MSD and LFB.
- A written Standard Operating Procedure (SOP) following a typical EPA 500 series GC/MS method outline must be available. This SOP must include sufficient information to independently carry out the analytical method and facilitate data validation.

Laboratories Capable of Low-Level Analyses for NDMA*

- Maxxam Analytics, Inc.
  50 Bathurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5
  ATTN: Antony Bouquillon (416) 455-1158, or AnnMarie Wright (519) 747-2575
- MWH Labs
  750 Royal Oaks Drive #100
  Monrovia, CA 91016
  ATTN: Dr. Andrew Eaton phone 626-386-1100 or 800-566-5227
  fax 626-386-1101
- Ontario Ministry of Energy and the Environment
  Laboratory Services Branch
  125 Resources Road, Etobicoke, Ontario, Canada M9P 3V6
  ATTN: Vincent Taguchi (416) 235-5902
- Pacific Analytical, Inc.
  6349 Paseo del Labo, Carlsbad, California 92009
  ATTN: Steve Parson (760) 438-3100
- Southwest Research Institute
  6220 Culebra Road, San Antonio, Texas 78238-5166
  ATTN: Gang Sun (210) 522-3954
  fax (210) 522-3649
- Weck Laboratories, Inc.

14859 East Clark Avenue
Industry, California 91745-1396
ATTN: Alfredo Pierri (626) 336-2139

*DHS is aware that the following laboratories are capable of NDMA analysis in the low part per trillion range. Potential clients planning to use any of these laboratories for NDMA analyses for the Drinking Water Program should be aware that the laboratories must supply data according to the data package requirements described in the **Acceptable Analytical Approaches**, presented above. Laboratories often price their product based on specific client needs along with analytical results. There may be other laboratories in the US and Canada who also are able to supply data according to the data package requirements.

Return to NDMA Index

Home

APPENDIX D

2000 Annual Report

SECTION 8.0 - WATER QUALITY MONITORING PROGRAM

8.1 INTRODUCTION

In order to address both upstream and downstream water quality issues at the Big Tujunga Wash site, a water-quality monitoring program has been implemented. The monitoring program will specifically address water quality issues, such as pesticide/fertilizer percolation or runoff and subsequent groundwater contamination, which may occur due to upstream development. Monitoring for elevated levels of nitrogen and organophosphates in the flow entering the site will help determine whether nitrate-laden irrigation water or pesticide runoff from upstream developments are affecting the Big Tujunga Wash Mitigation Bank. The water quality monitoring program at Big Tujunga Wash shall complement the monitoring program that is a requirement of the upstream Red Tail Golf Course and Equestrian Project.

8.1.1 Purpose and Goals

The water quality program is specifically designed to look for changes in water quality that may potentially affect sensitive native fishes and amphibians in the aquatic environment. The LACDPW personnel have established baseline water quality conditions prior to the implementation of the MMP programs. The Public Works personnel conducted the baseline water quality sampling in accordance with accepted protocols and the analyses was conducted by a certified water quality laboratory. The water quality program at Big Tujunga Wash includes quarterly monitoring for the following water quality parameters:

Total Kjeldahl Nitrogen (TKN)
Nitrite (NO2)
Nitrate (NO3)
Ammonia (NH4)
Orthophosphate
Dissolved Oxygen (DO)
Total Fecal Coliform
Organochlorides
Total Phosphate
Organophosphate
Chlorine
Turbidity
Temperature (degrees Celsius)
pH (pH units)
Pesticides

8.2 METHODOLOGY/DATE OF IMPLEMENTATION

Water quality monitoring sites were permanently established with a Global Positioning System (GPS) at various locations along Haines Canyon Creek and Big Tujunga Wash. Three monitoring sites were located along Haines Canyon Creek. One site was located at the inflow to the Tujunga Ponds; a second site was located at the outflow of the Tujunga Ponds; and the third site was located in Haines Canyon Creek, just before it exits the Mitigation Bank. A water quality monitoring station was also established in Big Tujunga Wash and sampling was performed if flowing water is present during the quarterly sampling visits. Table 8-1 indicates the locations of the four sampling stations.

Table 8-1
Water Quality Sampling Locations

Sampling Locations	Latitude	Longitude
Haines Canyon Creek before exiting the site.	N 34 16' 2.9"	W 118 21' 22.2"
Haines Canyon Creek inflow to Tujunga Ponds.	N 34 16' 6.9"	W 118 20' 18.7"
Haines Canyon Creek outflow from Tujunga Ponds.	N 34 16' 7.1"	W 118 20' 28.3"
Big Tujunga Wash	N 34 16' 11.7"	W 118 21' 4.0"

An experienced Water Quality Specialist collected samples on December 12, 2000, and the samples were taken to a reputable laboratory to be analyzed immediately after sampling was completed. The results of the water quality analysis shall be summarized in a quarterly letter to LADPW, CDFG, RWQCB, and USFWS. It will be the responsibility of the CDFG, RWQCB, and USFWS to enforce the laws regarding water quality impacts on sensitive species from upstream development, and take necessary actions against the upstream sources. In addition, the Water Quality Specialist shall be responsible for providing the quarterly letter report to the Contractor responsible for preparing the Project Implementation and Annual Monitoring reports. This letter shall be submitted to these agencies and the Contractor within 30 days after the sampling date. Any notable discrepancies between the water quality and the baseline water quality established in the beginning of MMP implementation shall be brought to the attention of the resource agencies and Contractor within 7 days of receiving the water quality analysis. The Water Quality Specialist shall be responsible for sending quarterly letter reports directly to the aforementioned agencies and Contractor and for contacting the agencies directly when discrepancies are noted. In addition, the Water Quality Specialist shall be responsible for providing an annual summary report of the water quality monitoring program to the aforementioned agencies and Contractor within 60 days after the fourth sampling date. The water quality monitoring report for 2000 is included as Appendix E.

The Water Quality Monitoring Program will continue throughout the 5-year duration of the MMP Program. Continuation of this program beyond the 5 years shall be discussed during consultation with the USFWS if the Santa Ana sucker is federally listed under the Endangered Species Act.

8.2.1 Description of Analyses

The sampling parameters in the water quality monitoring program were analyzed by the following meters in the field:

- YSI Model 57 - dissolved oxygen and temperature
- HACH DR 700 - total residual chlorine
- Orion 230A - pH

All other analyses were performed in duplicate at Montgomery Watson Laboratories, Pasadena, California.

8.2.2 Sampling Dates

Samples were taken on December 14, 2000, by Montgomery Watson and the samples were taken to a Montgomery Watson Laboratories, Pasadena, California, to be analyzed immediately after sampling was completed.

8.3 RESULTS

- **pH:** The pH in Big Tujunga Wash is at the upper objective of 8.5. Other stations are within the 6.5 to 8.5 range.
- **Dissolved Oxygen:** The oxygen levels in the Tujunga Ponds are below the recommended minimum for warmwater species of 5.0 mg/L. Samples from Big Tujunga Wash and Haines Canyon Creek exiting the site are over the 5.0 mg/L standard.
- **Temperature:** Observed temperatures were below levels of concern for growth and survival of warm water fish species.
- **Fecal Coliform:** Coliform bacteria levels in Big Tujunga Wash are higher than Basin Plan objectives for water contact recreation and federal public health criteria for swimming.

- **Nitrate:** Nitrate in Haines Canyon Creek decreases as you move downstream, from over nine to less than 2mg/L. Concentrations in the ponds are high for natural waters but below the drinking water standard of 10mg/L.
- **Ammonia:** Ammonia levels were below the detection threshold at all sampling stations.
- **Turbidity:** Turbidity in waters leaving the site is slightly higher in Haines Canyon Creek than in Big Tujunga Ponds. Concentrations in big Tujunga Wash are similar to those in waters leaving the site. Levels are not high enough to negatively impact photosynthesis.
- **Phosphorus:** Most phosphorus in site waters is present as reactive orthophosphate. Overall levels are not indicative of excessive nutrient conditions.

The results of the analysis conducted in December of 2000 are presented in Table 8-2.

Table 8-2
Summary of Big Tujunga Wash Water Quality Results
4th Quarter 2000 (December 14, 2000)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Canyon Creek Exiting Site 1	Haines Canyon Creek Exiting Site 2 (duplicate)
Temperature	°C	16	--	15.5	--	12.5	--	9.5	--
Dissolved ygen	mg/L	2.8	--	3.1	--	5.4	--	7.0	--
	std units	6.9	--	7.0	--	8.5	--	8.2	--
Total residual chlorine	mg/L	<0.1	--	<0.1	--	<0.1	--	<0.1	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Kjeldahl Nitrogen	mg/L	ND	0.28	ND	0.43	0.70	0.62	0.72	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-Nitrogen	mg/L	9.65	9.40	7.29	7.17	ND	ND	1.59	1.56
Orthophospate -P	mg/L	0.065	0.064	0.040	0.040	0.014	0.014	0.016	0.016
Total phosphorus-P	mg/L	0.07	0.07	0.04	0.05	0.03	ND (<0.20)	0.02	ND (< 0.02)
Turbidity	NTU	0.90	0.60	0.90	1.0	1.6	2.2	1.8	1.4
Fecal Coliform Bacteria	MPN/100 ml	<2	2	13	13	300	500	80	110
Total Coliform Bacteria	MPN/100 ml	3000	9000	2200	3000	1400	2400	900	3000

NTU = nephelometric turbidity units.
MPN = most probable number.

8.3.1 Comparison of Results with Baseline Data

Water quality in December 2000 was similar to April 12, 2000 baseline conditions. The higher bacteria and turbidity that was observed in the April 18, 2000 samples are most likely due to a rain event. Nitrate levels followed a similar pattern in both months of decreasing concentrations through the Tujunga Ponds, complete or near depletion in Big Tujunga Wash, and low levels leaving the site in Haines Creek. Similarly, pH in samples from Haines Creek was generally lower than the more basic Big Tujunga Wash.

8.4 DISCUSSION OF RECOMMENDATIONS

There are no recommendations at this time.

2001 Annual Report

SECTION 10.0 – WATER QUALITY MONITORING PROGRAM

10.1 INTRODUCTION

In order to address both upstream and downstream water quality issues at the Big Tujunga Wash site, a water-quality monitoring program was implemented. The monitoring program addresses specific water quality issues, such as pesticide/fertilizer percolation or run-off and subsequent groundwater contamination, which may occur due to upstream development. Monitoring for elevated levels of nitrogen and organophosphates in the flow entering the site will help determine whether nitrate-laden irrigation water or pesticide run-off from upstream developments are affecting the Big Tujunga Wash Mitigation Bank. The water quality monitoring program at Big Tujunga Wash shall complement the monitoring program that is a requirement of the upstream Canyon Trails Golf Course.

10.2 PURPOSE/GOALS

The proposed water quality program is specifically designed to look for changes in water quality that may potentially affect sensitive native fishes and amphibians in the aquatic environment. The LACDPW personnel established baseline water quality conditions on April 12, 2000, prior to the implementation of the MMP programs. The LACDPW personnel conducted the baseline water quality sampling in accordance with accepted protocols and the analyses were conducted by a certified water quality laboratory. The water quality program at Big Tujunga Wash includes quarterly monitoring for the following water quality parameters:

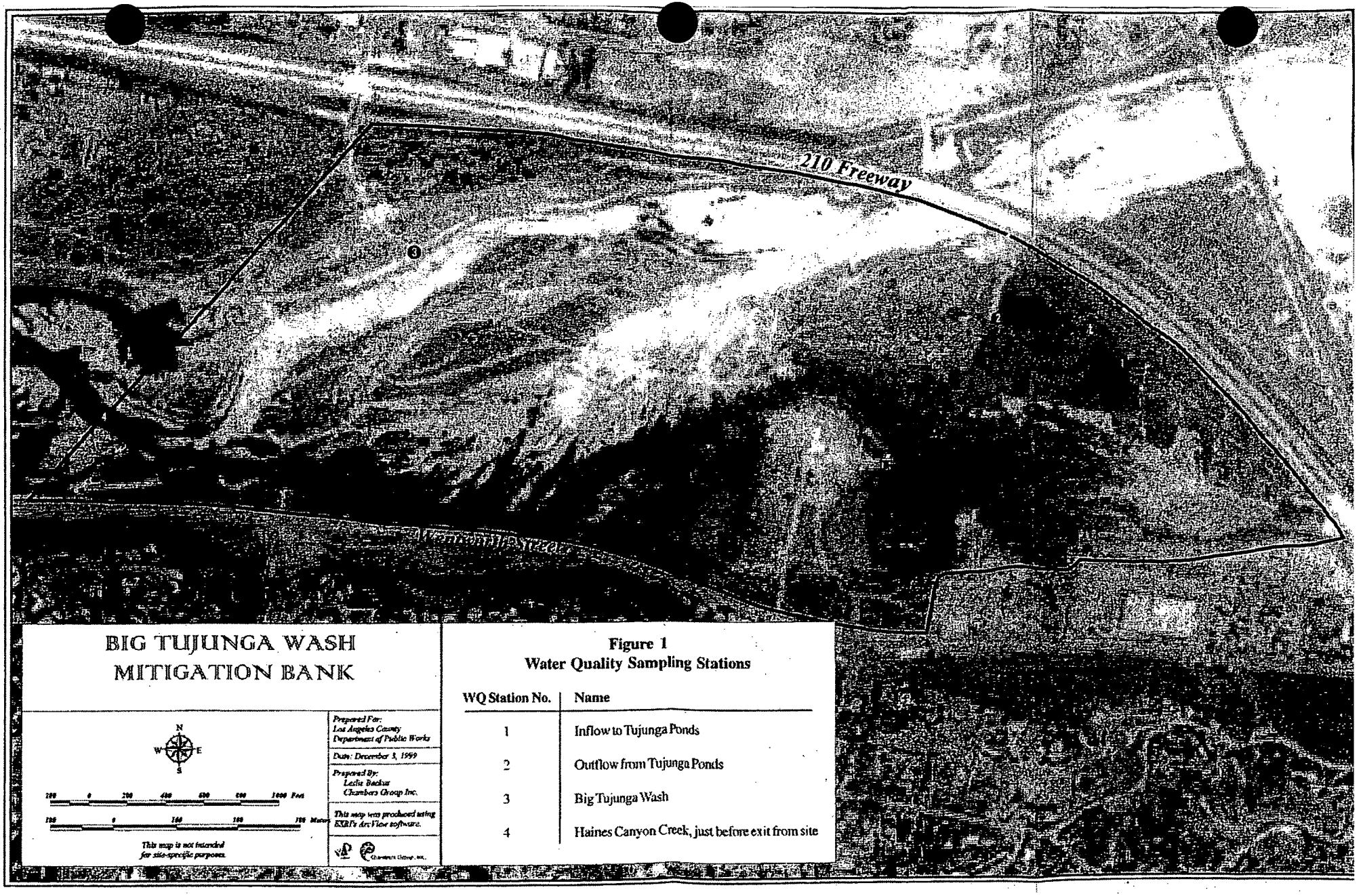
- Total Kjeldahl Nitrogen (TKN)
- Nitrite (NO2)
- Nitrate (NO3)
- Ammonia (NH4)
- Orthophosphate
- Dissolved Oxygen (DO)
- Total Fecal Coliform
- Organochlorides
- Total Phosphate
- Organophosphate
- Chlorine
- Turbidity
- Temperature (degrees Celsius)
- pH (pH units)
- Pesticides

10.3 METHODOLOGY

An experienced Water Quality Specialist sampled on March 12, June 19, September 11, and December 12, 2001 and the samples were taken to Montgomery Watson Laboratories, Pasadena, California, to be analyzed immediately after sampling was completed. The results of the water quality analyses were summarized in quarterly letters and an annual report distributed to LACDPW, CDFG, RWQCB, and USFWS. The Water Quality Monitoring Program will continue on a quarterly basis throughout the 5-year duration of the MMP Program. Table 10-1 lists the locations of the four water quality monitoring sites and the 2001 sampling dates.

10.3.1 Location of Sampling Sites

Water quality monitoring sites were permanently established with a Global Positioning System (GPS) at various locations along Haines Canyon Creek and Big Tujunga Wash. Three monitoring sites were located along Haines Canyon Creek. One site was located at the inflow to the Tujunga Ponds; a second site was located at the outflow of the Tujunga Ponds; and the third site was located in Haines Canyon Creek, just before it exits the Mitigation Bank. A fourth water quality monitoring station was also established in Big Tujunga Wash and sampling was performed if flowing water is present during the quarterly sampling visits. Figure 10-1 shows the locations of the four sampling locations.



BIG TUJUNGA WASH MITIGATION BANK

N
W E
S

200 0 200 400 600 800 1000 Feet

100 0 100 200 300 Meters

This map is not intended for site-specific purposes.

Prepared For:
Los Angeles County Department of Public Works

Date: December 3, 1999

Prepared By:
Leslie Backus
Chambers Group Inc.

This map was produced using ESRI's ArcView software.

Figure 1
Water Quality Sampling Stations

WQ Station No.	Name
1	Inflow to Tujunga Ponds
2	Outflow from Tujunga Ponds
3	Big Tujunga Wash
4	Haines Canyon Creek, just before exit from site

Table 10-1
Big Tujunga Wash
2001 Water Quality Sampling Locations and Dates

Sampling Locations	Latitude	Longitude	Date of Sample
Haines Canyon Creek, just before exit from site	N 34 16' 2.9"	W 118 21' 22.2"	March 12, June, 19, September 11, December 12
Haines Canyon Creek, inflow to Tujunga Ponds	N 34 16' 6.9"	W 118 20' 18.7"	March 12, June, 19, September 11, December 12
Haines Canyon Creek, outflow from Tujunga Ponds	N 34 16' 7.1"	W 118 20' 28.3"	March 12, June, 19, September 11, December 12
Big Tujunga Wash	N 34 16' 11.7"	W 118 21' 4.0"	March 12

10.3.2 Description of Analyses

A portion of the water quality parameters were analyzed in the field using the following field equipment:

- YSI Model 57 - dissolved oxygen and temperature
- HACH DR 700 - total residual chlorine
- Orion 230A - pH

All other analyses were performed in duplicate at Montgomery Watson Laboratories, Pasadena, California.

10.4 RESULTS

The following table summarizes the results from the 2001 sampling efforts. Detailed descriptions of the analyses are located in Appendix L. Figure 10-2 shows the checklist for the program tasks that have been completed thus far.

10.4.1 Comparison of Quarterly Monitoring

In general, the water quality on the site is relatively good. Sampling during 2001 did not detect any contamination of the waters due to pesticides or fertilizers. In general, pH levels varied by 0.2 units or less for waters flowing into and out of the ponds. Nitrate-nitrogen was consistently higher in the waters flowing into the ponds than from the outflow. Without flows from the Wash, nitrate in Haines Canyon Creek was similar or just slightly lower than values observed in the ponds. Water quality in 2001 was similar to the April 12, 2000 baseline conditions. The higher bacteria, phosphorus, and turbidity that was observed in the April 18, 2000 samples were most likely due to a rain event. Table 10-3 lists the baseline conditions. Results of analyses conducted by Montgomery Watson Laboratories for samples collected in 2001 are summarized in Tables 10-4 through 10-7. Where duplicate analyses were conducted, the average value is graphed. Note that the yields (percent recoveries) of samples were within acceptable limits (percentages) for all samples in 2001.

10.5 RECOMMENDATIONS

As previously stated, the water quality at the mitigation bank during 2001 was relatively good and there was no contamination of the waters due to pesticides or fertilizers. Therefore, there are no recommendations at this time.

Figure 10-2
Big Tujunga Wash Mitigation Bank
Water Quality Monitoring Program Checklist

- ☐ Notify resource agencies.
- ☐ Authorization from resource agencies.
- ☐ Site visit to identify water quality monitoring stations.
- ☐ Establish monitoring stations in Haines Canyon Creek and Big Tujunga Wash with GPS.
- ☐ March 1 – Conduct baseline water quality on the site prior to implementation of enhancement measures.
- ☐ Submit samples to laboratory for analysis.
- ☐ April 1 – Submit baseline monitoring report.
- ☐ June 1 – 1st Quarterly sampling.
- ☐ Submit samples to laboratory for analysis.
- ☐ July 1 – Submit first quarterly monitoring report including a summary of baseline data to resource agencies and consultant.
- ☐ September 1 – 2nd Quarterly sampling.
- ☐ Submit samples to laboratory for analysis.
- ☐ October 1 – Submit quarterly monitoring report to resource agencies and consultant.
- ☐ December 1 – 3rd Quarterly sampling.
- ☐ Submit samples to laboratory for analysis.
- ☐ January 1 – Submit quarterly monitoring report to resource agencies and consultant.
- ☐ March 1 – 4th Quarterly sampling.
- ☐ Submit samples to laboratory for analysis.
- ☐ April 1 – Submit to resource agencies and consultant first quarterly monitoring report.
- ☐ May 1 – Submit annual monitoring report to resource agencies and consultant.

*Note: If at any time notable discrepancies occur between baseline data and quarterly sampling results, the resource agencies and consultant shall be notified within 7 days of receiving water quality analysis.

Table 10-2
Big Tujunga Wash
Summary of 2001 Water Quality Sampling Results

Parameter	Summary
pH	Values observed in Haines Canyon Creek leaving the site (and the one data point for Big Tujunga Wash) were 1 unit higher than values observed in the ponds. The pH of water from all stations for all four sampling periods was within the 6.5 to 8.5 range identified in the Basin Plan.
Dissolved Oxygen	Dissolved oxygen (DO) levels in Haines Canyon Creek leaving the site correlated with temperature-higher DO values were observed on dates with lower temperature. DO concentrations in the ponds did not follow this pattern, but readings of inflow to and outflow from the ponds were similar. Seasonal fluctuations of up to 3.7 mg/L in DO were observed-highest overall readings were observed in December.
Temperature	Temperatures in Haines Canyon Creek leaving the site are generally 1-3 degrees cooler than temperatures in the Tujunga ponds. Seasonal fluctuations of up to 9 degrees Celcius were observed with the December readings being the lowest, and the June readings being the highest. Observed temperatures during all sample periods were below levels of concern for growth and survival of warm water fish species.
Fecal Coliform	Fecal coliform levels in 2001 ranged from <2 to 900 MPN/100ml. Total coliforms were higher (16,000 MPN/100ml) in one sample from the inflow to the ponds in September. Fecal coliform levels exceeded the water contact recreation standard of 200 MPN/100ml in September in one sample from the outflow from the ponds and one sample from Haines Canyon Creek leaving the site (although sufficient samples were not taken per the standard).
Nitrate	Ammonia-nitrogen was detected in only one sample. This was a very low reading in September at the Haines Canyon Creek sampling location leaving the site. Similarly, nitrite-nitrogen was only detected at one station on one date, at the inflow to the ponds in June. Kjeldahl nitrogen (organic plus ammonia) readings were consistently low (<1 mg/L) at all stations on all dates. Nitrate-nitrogen readings at all stations were below the drinking water standard of 10 mg/L.
Ammonia	Ammonia levels were below the detection threshold at all sampling stations.
Turbidity	Turbidity levels were low, except in March when flow was present in Big Tujunga Wash. Flows in the Wash and Haines Creek leaving the site were slightly turbid in March. Turbidity values in 2001 were not excessive for aquatic life. The drinking water standard was only exceeded in March in the Wash and in Haines Canyon Creek.
Phosphorus	Phosphorus levels were the lowest in September and generally similar in the other three quarters. Total phosphorus values at all stations for all four quarters were at or below the low end of EPA's recommendation for streams of <0.05-1.0 mg/L total phosphates.

Table 10-3
Big Tujunga Wash
Baseline Water Quality (2000)

Parameter	Units	Date	Haines Canyon Creek, Inflow to Tujunga Ponds	Haines Canyon Creek, Outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, Just Before Exit From Site
Total coliform	MPN/ 100 ml	4/12/00	3,000	5,000	170	1,700
		4/18/00	2,200	170,000	2,400	70,000
Fecal coliform	MPN/ 100 ml	4/12/00	500	300	40	80
		4/18/00	500	30,000	2,400	50,000
Ammonia-N	mg/L	4/12/00	0	0	0	0
		4/18/00	0	0	0	0
Nitrate-N	mg/L	4/12/00	8.38	5.19	0	3.73
		4/18/00	8.2	3.91	0.253	0.438
Nitrite-N	mg/L	4/12/00	0.061	0	0	0
		4/18/00	0.055	0	0	0
Kjeldahl-N	mg/L	4/12/00	0	0.1062	0.163	0
		4/18/00	0	0.848	0.42	0.428
Dissolved phosphorus	mg/L	4/12/00	0.078	0.056	0	0.063
		4/18/00	0.089	0.148	0.111	0.163
Total phosphorus	mg/L	4/12/00	0.086	0.062	0	0.066
		4/18/00	0.113	0.153	0.134	0.211
pH	std units	4/12/00	7.78	7.68	7.96	7.91
		4/18/00	7.18	7.47	7.45	7.06
Turbidity	NTU	4/12/00	1.83	0.38	1.75	0.6
		4/18/00	4.24	323	4,070	737

Table 10-4
Summary of Big Tujunga Wash Water Quality Results
1st Quarter 2001 (3/12/01)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (Duplicate)	Outflow From Tujunga Ponds 1	Outflow From Tujunga Ponds 2 (Duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (Duplicate)	Haines Canyon Creek Exiting Site 1	Haines Canyon Creek Exiting Site 2 (Duplicate)
Temperature	°C	17.5	--	16.7	--	13.5	--	14.3	--
Dissolved Oxygen	mg/L	4.9	--	5.4	--	10.2	--	9.7	--
pH	std units	7.0	--	7.0	--	8.3	--	8.2	--
Total residual chlorine	mg/L	0.03	--	0.02	--	0.05	--	0.03	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Kjeldahl Nitrogen	mg/L	0.28	0.41	0.51	0.48	0.49	0.57	0.47	0.43
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-Nitrogen	mg/L	8.19	8.10	4.48	4.41	0.12	0.12	0.45	0.43
Orthophospate-P	mg/L	0.035 (MRL 0.010)	0.037 (MRL 0.010)	0.039	0.039 (MRL 0.010)	0.012	0.012	0.016	0.016
Total phosphorus-P	mg/L	0.03 (MRL 0.020)	0.03 (MRL 0.020)	0.06	0.03 (MRL 0.020)	0.04	ND (<0.020)	0.05	0.05
Turbidity	NTU	0.60	0.50	0.75	0.80	9.6	9.1	9.4	12
Fecal Coliform Bacteria	MPN/100 ml	4	4	80	30	140	60	23	130
Total Coliform Bacteria	MPN/100 ml	2,200	1,600	2,800	7,000	3,000	800	350	280

NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 10-5
Summary of Big Tujunga Wash Water Quality Results
2nd Quarter 2001 (6/19/01)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (Duplicate)	Outflow From Tujunga Ponds 1	Outflow From Tujunga Ponds 2 (Duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (Duplicate)	Haines Canyon Creek Exiting Site 1	Haines Canyon Creek Exiting Site 2 (Duplicate)
Temperature	°C	22.3	--	22.7	--	*	--	21.5	--
Dissolved Oxygen	mg/L	5.8	--	5.1	--	*	--	7.3	--
pH	std units	6.9	--	6.9	--	*	--	7.9	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	ND	ND	0.31	0.36	*	*	ND	ND
Nitrite-Nitrogen	mg/L	0.1	0.1	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	7.6	7.5	4.7	4.8	*	*	9.6	4.8
Orthophospate-P	mg/L	0.022	0.023	0.021	0.023	*	*	0.027	0.027
Total phosphorus-P	mg/L	0.04	0.04	0.06	0.04	*	*	0.03	0.04
Turbidity	NTU	1.5	1.9	4.2	2.9	*	*	1.4	1.2
Fecal Coliform Bacteria	MPN/100 ml	4	8	17	7	*	*	23	40
Total Coliform Bacteria	MPN/100 ml	300	300	1,600	1,400	*	*	5,000	93

*No sample on this date - station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 10-6
Summary of Big Tujunga Wash Water Quality Results
3rd Quarter 2001 (9/11/01)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (Duplicate)	Outflow From Tujunga Ponds 1	Outflow From Tujunga Ponds 2 (Duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (Duplicate)	Haines Canyon Creek Exiting Site 1	Haines Canyon Creek Exiting Site 2 (Duplicate)
Temperature	°C	21.3	--	21.3	--	*	--	20.3	--
Dissolved Oxygen	mg/L	8.4	--	8.8	--	*	--	7.3	--
pH	std units	7.0	--	7.2	--	*	--	8.0	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	0.093	ND
Kjeldahl Nitrogen	mg/L	0.37	0.71	0.35	0.47	*	*	0.45	0.54
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	7.2	7.2	5.2	5.3	*	*	4.8	4.8
Orthophospate-P	mg/L	ND	ND	ND	ND	*	*	0.016	0.016
Total phosphorus-P	mg/L	0.02	ND	ND	ND	*	*	0.04	ND (MRL 0.02)
Turbidity	NTU	0.60	1.1	0.95	0.75	*	*	0.45	0.40
Fecal Coliform Bacteria	MPN/100 ml	11	17	900	130	*	*	240	110
Total Coliform Bacteria	MPN/100 ml	1,100	16,000	900	500	*	*	1,400	1,100

*No sample on this date - station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 10-7
Summary of Big Tujunga Wash Water Quality Results
4th Quarter 2001 (12/12/01)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (Duplicate)	Outflow From Tujunga Ponds 1	Outflow From Tujunga Ponds 2 (Duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (Duplicate)	Haines Canyon Creek Exiting Site 1	Haines Canyon Creek Exiting Site 2 (Duplicate)
Temperature	°C	15	--	14	--	*	--	12	--
Dissolved Oxygen	mg/L	6.9	--	7.1	--	*	--	10.0	--
pH	std units	7.5	--	7.7	--	*	--	8.4	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.31	0.43	ND	0.44	*	*	0.45	0.54
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	8.9	8.9	7.3	7.3	*	*	6.1	6.4
Orthophospate-P	mg/L	0.028	0.029	0.024	0.026	*	*	0.024	0.034
Total phosphorus-P	mg/L	0.04	0.05	0.04	0.03	*	*	0.03	0.04
Turbidity	NTU	0.50	0.45	0.40	0.50	*	*	0.25	0.40
Fecal Coliform Bacteria	MPN/100 ml	<2	4	4	14	*	*	30	17
Total Coliform Bacteria	MPN/100 ml	2,400	500	110	500	*	*	900	900

*No sample on this date - station dry
NTU nephelometric turbidity units
MPN most probable number
ND non-detect

Sampling Parameters

Table 3 summarizes the sampling parameters included in the water quality monitoring program. The following meters were used in the field:

- YSI Model 57 – dissolved oxygen and temperature
- HACH DR 700 – total residual chlorine
- Orion 230A – pH

All other analyses were performed in duplicate at MWH Laboratories, Monrovia, California. Samples were taken at mid-depth, along a transect perpendicular to the stream channel alignment. Note that sampling for pesticides and herbicides will begin after specific chemicals have been identified by the golf course owners. Quality assurance/quality control (QA/QC) procedures in the laboratory followed the methods described in the MWH Laboratories *Quality Assurance Manual*.

Table 3
Big Tujunga Wash
Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
total Kjeldahl nitrogen (TKN)	laboratory	EPA 351.2
nitrate (NO_2)	laboratory	EPA 300.0 by IC
nitrate (NO_3)	laboratory	EPA 300.0 by IC
ammonia (NH_4)	laboratory	EPA 350.1
orthophosphorus	laboratory	EPA 365.1
total coliform	laboratory	Standard Methods 9221
fecal coliform	laboratory	Standard Methods 9221
total organic halogens (organochlorides)	not sampled in 2002	--
total phosphorus	laboratory	EPA 365.4
organophosphate (total P minus ortho-P)	calculation	--
turbidity	laboratory	EPA 180.1
glyphosate (Roundup)	not sampled in 2002	--
1 golf course herbicide (if not Roundup)	not sampled in 2002	--
1 golf course insecticide	not sampled in 2002	--
1 golf course fungicide	not sampled in 2002	--

Table 3 (Continued)
Big Tujunga Wash
Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	field	Standard Methods 4500-Cl D
temperature	field	Standard Methods 2550
pH	field	Standard Methods 4500-H+

Source for analytical methods:
EPA. Method and Guidance for Analysis of Water.
American Public Health Association, American Waterworks Association, and Water Environment Federation. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington D.C.

Discharge Measurements. In addition to the water quality monitoring conducted in December 2002, flows in the outlet of Big Tujunga Ponds and in Haines Canyon Creek leaving the site were estimated using a simple field procedure. The technique uses a float (an object such as an orange, ping-pong ball, pine cone, etc.) to measure stream velocity.

Calculating flow then involves solving the following equation:

$$\text{Flow} = A L C / T$$

Where:
A = Average cross-sectional area of the stream (stream width multiplied by average water depth)
L = Length of the stream reach measured (usually 20 ft)
C = A coefficient or correction factor (0.8 for rocky-bottom streams or 0.9 for muddy-bottom streams). This allows you to correct for the fact that water at the surface travels faster than near the stream bottom due to resistance from gravel, cobble, etc. Multiplying the surface velocity by a correction coefficient decreases the value and gives a better measure of the stream's overall velocity.
T = Time, in seconds, for the float to travel the length of L

RESULTS

Baseline Water Quality

Sampling and analysis conducted by LADPW prior to implementation of the MMP is considered the baseline for water quality conditions at the site. The results of analyses conducted in April 2000 are presented in **Table 4**.

Table 5
Summary of Big Tujunga Wash Water Quality Results
1st Quarter 2002 (3/26/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	18.5	--	18.0	--	*	--	17.0	--
Dissolved Oxygen	mg/L	9.3	--	9.2	--	*	--	8.9	--
pH	std units	7.3	--	7.7	--	*	--	8.3	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.28	0.30	ND	ND	*	*	ND	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	9.1	8.9	7.3	7.0	*	*	6.4	6.4
Orthophospate-P	mg/L	ND	ND	ND	ND	*	*	0.015	0.014
Total phosphorus-P	mg/L	ND	ND	ND	ND	*	*	ND (MRL 0.02)	ND (MRL 0.02)
Turbidity	NTU	1.2	1.1	0.70	0.70	*	*	0.35	0.30
Fecal Coliform Bacteria	MPN/100ml	4	<2	4	8	*	*	50	50
Total Coliform Bacteria	MPN/100ml	500	900	130	220	*	*	900	900

* No sample on this date – station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 6
Summary of Big Tujunga Wash Water Quality Results
2nd Quarter 2002 (6/25/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	22.5	--	22.5	--	*	--	20.5	--
Dissolved Oxygen	mg/L	8.3	--	8.4	--	*	--	8.6	--
pH	std units	7.5	--	7.6	--	*	--	8.2	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.56	0.37	0.32	0.60	*	*	0.26	0.28
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	8.9	8.9	7.1	6.7	*	*	5.6	5.9
Orthophospate-P	mg/L	ND	ND	0.05	0.02	*	*	0.02	0.02
Total phosphorus-P	mg/L	ND	ND	ND	ND	*	*	ND (MRL 0.02)	0.37 (MRL 0.02)
Turbidity	NTU	0.70	0.70	1.0	1.5	*	*	1.4	1.6
Fecal Coliform Bacteria	MPN/100ml	8	7	11	13	*	*	170	60
Total Coliform Bacteria	MPN/100ml	1300	1400	300	300	*	*	2300	3000

* No sample on this date – station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 7
Summary of Big Tujunga Wash Water Quality Results
3rd Quarter 2002 (9/12/02)

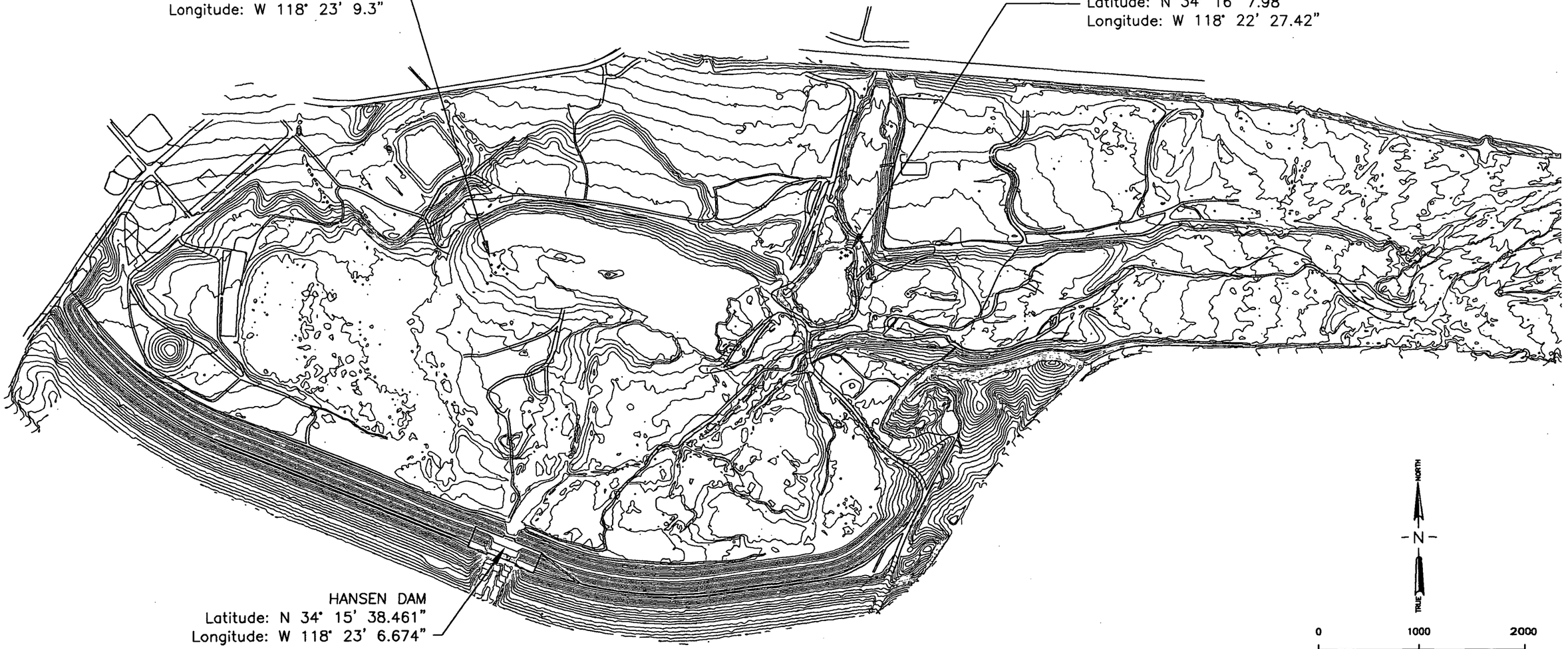
Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	21.4	--	22.0	--	*	--	21.0	--
Dissolved Oxygen	mg/L	8.5	--	8.3	--	*	--	8.3	--
pH	std units	7.1	--	7.3	--	*	--	8.3	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.20	0.47	ND	ND	*	*	0.23	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	9.1	9.0	6.8	6.8	*	*	6.1	6.1
Orthophospate-P	mg/L	0.014	0.016	ND	ND	*	*	0.011	0.011
Total phosphorus-P	mg/L	0.03	0.05	ND	ND	*	*	0.02 (MRL 0.02)	ND (MRL 0.02)
Turbidity	NTU	2.4	2.7	0.75	0.70	*	*	2.6	4.5
Fecal Coliform Bacteria	MPN/100ml	7	2	4	2	*	*	<2	<2
Total Coliform Bacteria	MPN/100ml	2400	3000	5000	500	*	*	500	3000

* No sample on this date – station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect

Table 8
Summary of Big Tujunga Wash Water Quality Results
4th Quarter 2002 (12/19/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	15.8	--	14.7	--	*	--	11.7	--
Dissolved Oxygen	mg/L	6.98	--	6.31	--	*	--	9.75	--
pH	std units	7.06	--	7.12	--	*	--	8.19	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	ND	0.2	0.51	0.24	*	*	0.29	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	10	9.8	7.8	7.9	*	*	4.9	5.0
Orthophospate-P	mg/L	0.043	0.046	0.029	0.028	*	*	0.035	0.032
Total phosphorus-P	mg/L	0.03	0.04	0.03	0.03	*	*	0.06	0.021
Turbidity	NTU	0.65	0.60	0.60	0.65	*	*	4.8	2.8
Fecal Coliform Bacteria	MPN/100ml	30	13	94	80	*	*	300	30
Total Coliform Bacteria	MPN/100ml	1400	2800	300	1700	*	*	5000	3000

* No sample on this date – station dry
NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number
ND non-detect



Base Map Source: USACE LOS ANGELES, 1997 SURVEY DATA

STOCKPILE LOCATIONS
HANSEN DAM FLOOD CONTROL BASIN
LARGE AND SMALL LOWER LAKES
LOS ANGELES, CALIFORNIA

SOTA Environmental Technology, Inc.

FIGURE 2

PROJECT NO. 02HW013

MAY 2003

REPLY TO
ATTENTION OF:

Office of the Chief
Operations Branch

May 22, 2003

MEMORANDUM FOR Nonpoint Source Unit,
Los Angeles Regional Water Quality Control Board,
ATTN: Ms. Julie Clark

SUBJECT: Draft Site Assessment Report for the Lower Lakes at Hansen Dam Flood Control Basin

1. Two copies of the Draft Site Assessment (SA) Report for the Lower Lakes at Hansen Dam Flood Control Basin are enclosed for your review. Please complete the review of the Draft SA Report and provide your written review comments to this office as soon as possible, but no later than June 24, 2003.

2. Questions regarding the Draft SA Report should be directed to Jeffery Armentrout, Environmental Compliance Coordinator, at (213) 452-3415.

Charles S. Dwyer
for George L. Beams, P.E.
Chief, Construction-
Operations Division

Enclosures