

Kerr-McGee Chemical Corporation

**Phase II Environmental
Conditions Assessment
Located at Kerr-McGee
Chemical Corporation,
Henderson, Nevada**

The logo for ENSR, consisting of the letters 'ENSR' in a bold, sans-serif font. The 'E' and 'S' are connected, and the 'R' has a registered trademark symbol (®) to its upper right.

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August 1997

Document Number 4020-004-250

Kerr-McGee Chemical Corporation

Phase II Environmental
Compliance
Location
Chemical
Henderson, Nevada

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Prepared for
Kerr-McGee Chemical Corporation
Henderson, Nevada

ENSR
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CERTIFICATION PAGE

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state, and local statutes, regulations and ordinances.

Date: 8/7/97Name: David L. GerrySignature: Certificate No.: EM 1524Expiration Date: August 7, 1998

1.0 INTRODUCTION

1.1 Objectives

ENSR was authorized by Kerr McGee Chemical Corporation (KMCC) to assist KMCC in performing a Phase II investigation at the Henderson, Nevada facility. The location of the subject site is shown in Figure 1-1.

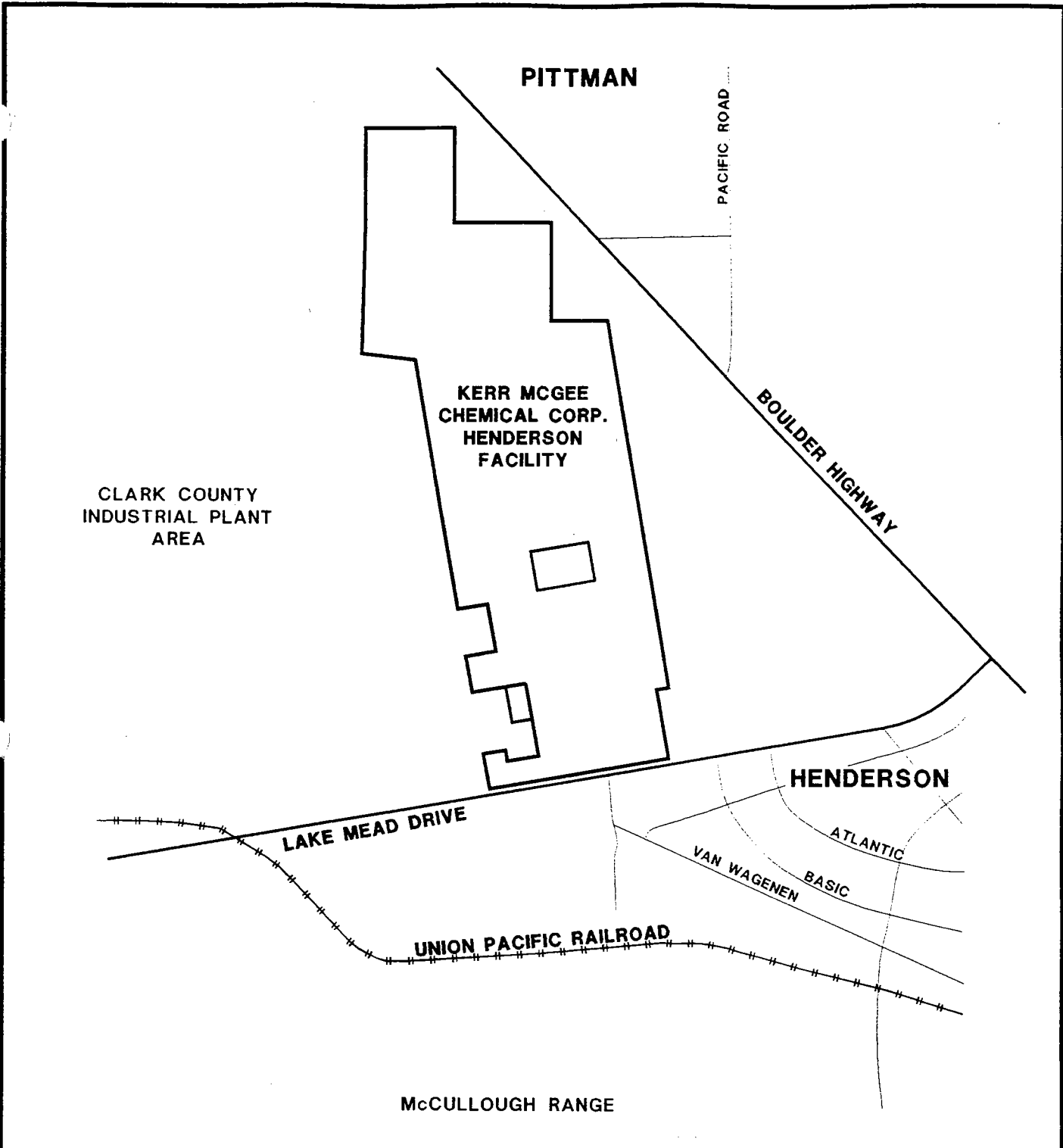
The objective of the Phase II activities conducted at the KMCC facility was to determine the potential for soil and groundwater impacts related to various past and present operations. The KMCC site occupies part of an industrial area known as the Basic Management Incorporated (BMI) complex.

In April 1993, KMCC submitted a Phase I Environmental Conditions Assessment report prepared by Kleinfelder, Inc. on behalf of KMCC to the Nevada Department of Environmental Protection (NDEP). In June 1993 and again in August 1993, representatives of NDEP and KMCC met to discuss additional information and data needs identified by NDEP based on their review of the Phase I report. A Letter of Understanding (LOU) summarizes the agreements reached at those meetings. A copy of the LOU is included in Appendix A.

Three types of action items are included in the LOU:

1. Items that could be addressed by KMCC by providing additional existing information in a written response; or
2. Items requiring further field work by KMCC; or
3. Items requiring further field work by the Henderson Industrial Site Steering Committee (HISSC).

The objective of this Phase II report is to address action item two, "items requiring further field work by KMCC." Action items one and three have been addressed in separate documents.



CLARK COUNTY
INDUSTRIAL PLANT
AREA

KERR MCGEE
CHEMICAL CORP.
HENDERSON
FACILITY

PITTMAN

PACIFIC ROAD

BOULDER HIGHWAY

HENDERSON

LAKE MEAD DRIVE

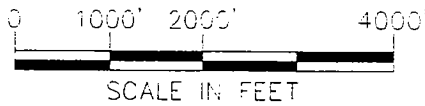
UNION PACIFIC RAILROAD

VAN WAGENEN

ATLANTIC

BASIC

McCULLOUGH RANGE



ENSR

FIGURE 1-1
SITE LOCATION MAP

Kerr McGee Chemical Corporation
Henderson, Nevada

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FILE NO. 4020004N	CHK BY: <i>DS</i>		

1.2 Scope of Work

The Phase II scope of work incorporated the following tasks:

- Review previous investigations and KMCC work plan;
- Acquire and mobilize field equipment and subcontractors;
- Drill and sample thirteen soil borings;
- Install one monitoring well;
- Advance 21 hand-augured borings to collect surface and near-surface soil samples;
- Excavate and sample two areas with stained soil;
- Purge and sample five monitoring wells; and
- Survey locations of all sampling points.

This report presents the results of the Phase II work.

1.3 Report Format

Section 1.0 of this report presents the overall objective of this phase of the site characterization and outlines the scope of work. Section 2.0 discusses and reviews the project site location and history, previous investigations, and the physical site characteristics. The field work completed during Phase II is detailed in Section 3.0, and the laboratory results are presented and discussed in Section 4.0. Section 5.0 includes a discussion of the data validation performed on analytical laboratory data, and Section 6.0 lists the references used from this report.

2.0 PROJECT BACKGROUND

2.1 Site Location and History

The KMCC property, which is part of the BMI complex, is located approximately 13 miles southeast of Las Vegas in an unincorporated section of Clark County, Nevada, and is completely surrounded by the incorporated area comprising the City of Henderson (Figure 1-1). Originally sited and operated by the U.S. government as a magnesium production facility, the BMI complex operated from August 1942 to November 1944 in support of the war effort.

When the magnesium operations ceased, a portion of the BMI complex was leased from the government by Western Electrochemical Company (WECCO) in 1945. Western Electrochemical Company was the first company to produce inorganic chemicals, such as chlorates, perchlorates, and manganese dioxide, at this location. By 1952, WECCO had purchased various portions of the complex. In 1955, WECCO merged with American Potash and Chemical Company (AP&CC) and continued to produce similar chemicals. In 1962, AP&CC purchased the current ammonium perchlorate plant, sodium perchlorate plant, and half of the sodium chlorate plant from the U.S. government. KMCC acquired AP&CC by merger in 1967. Subsequently, KMCC acquired the remainder of the sodium chlorate plant. In addition to the production of chemical oxidizers, the facility also began production of manganese dioxide and boron-based products.

2.2 Previous Investigations

KMCC agreed to perform an Environmental Conditions Assessment (ECA) on the KMCC portion of the BMI Complex to address potential environmental concerns. This agreement was documented in a consent agreement with the NDEP on April 25, 1991. The ECA report was submitted to NDEP on April 1993. Based upon the findings in this report and two subsequent meetings between KMCC and the NDEP, the NDEP issued a LOU on August 15, 1994.

The LOU listed 69 items of concern on the KMCC portion of the complex. A copy of the LOU is presented in Appendix A. Of these items, 20 did not require further action. Two items originally associated with KMCC areas were added to the common area investigation, 10 areas required further investigation by KMCC, and the remaining items required additional information to be supplied by KMCC. One of the areas requiring additional information regarding the former Hardesty Chemical lease was added to the group of areas requiring additional work making the total 11 areas for additional work. The Phase II activities outlined in the KMCC Work Plan, dated

May 1996 and subsequently revised and then approved by NDEP in April 1997, addressed the required additional work for the 11 identified areas.

2.3 Physical Site Characteristics

2.3.1 Geology

The BMI complex is located in the south-central portion of the Las Vegas Valley. The Las Vegas Valley lies within the Basin and Range physiographic province which consists of desert basins with interior drainage flanked by sparsely vegetated mountains. The valley is wide, flat, and slopes southeasterly from an altitude of about 2,000 feet above mean sea level (msl) at Las Vegas to about 1,200 feet at Lake Mead. Mountains composed of igneous and sedimentary rocks rise steeply along the borders of the valley and coalescing alluvial fans slope gently from the mountains toward the valley floor.

The Las Vegas Wash, a shallow, narrow stream that flows southeasterly across Clark County, drains into Lake Mead. The KMCC property is approximately three miles south of the Las Vegas Wash.

The elevations on the KMCC property range between 1,600 and 1,800 feet above msl. The site rests on top of alluvial deposits, originating from the McCullough Range, that slope gently to the north toward the Las Vegas Wash.

Sediments beneath the site consist of alluvial deposits which include a reddish-brown, heterogeneous, well-graded mixture of sand and gravel with lesser amounts of silt, clay, and caliche. Boulders and cobbles are common. Due to their mode of deposition, no distinct beds or units are continuous over the area. Distinct layers are only present in the form of gravel beds cemented with caliche in the northwest corner of the site (Jacobs Engineering, October 1987).

Generally, the alluvial deposits thicken from south to north beneath the facility. These deposits are of greater thickness over the erosional channels and are thinner over intervening interfluvial areas. The thickness of the alluvial deposits ranges from approximately 19 to 62 feet beneath the KMCC facility (Kleinfelder, 1993).

A major feature of these alluvial deposits is the stream-deposited sands and gravels that were laid down within the old channels developed on the surface of the Muddy Creek formation during infrequent flood runoff periods. These deposits conform to the old channel boundaries, which were characteristically linear and narrow in configuration. These channel fill deposits are typically uniform sands and gravels and show higher permeability than the adjacent well-graded alluvial

deposits. The importance of these channel fill deposits is that they control the occurrence and movement of groundwater in this portion of the Las Vegas Valley (Hydrologic Investigation, KMCC, July 1985).

No distinct lithologic contrast exists between the Muddy Creek formation and overlying alluvial sediments; however, a 5-foot thick transitional zone has been reported to occur above the Muddy Creek formation where small white clayey silt lenses are interbedded with sand and gravel (Jacobs Engineering, October 1987).

2.3.2 Hydrogeology

The Las Vegas Wash is a tributary of Lake Mead. Lake Mead is a major reservoir on the Colorado River which supplies about 52 percent of the total water used in the Las Vegas Valley. The remaining 42 percent of Las Vegas valley water is from groundwater resources, and about 6 percent is from recycled treated sewage effluent used for agricultural and golf-course irrigation and for cooling water (Nevada Department of Water Resources).

2.3.2.1 Surface Waters

Surface water drainage in the Henderson and BMI area flows to the north toward the Las Vegas Wash. Flow occurs as infrequent storm runoff which drains across the alluvial apron in shallow washes. Drainage and diversion structures have been constructed around the perimeters of the BMI complex to channel surface water flow.

2.3.2.2 Groundwater

The KMCC facility resides within the Las Vegas Valley. Groundwater in the Las Vegas Valley occurs mainly in the unconsolidated sediments of the valley fill. The upper alluvial fan deposits and the underlying Muddy Creek Formation store and yield different quantities of water. The upper alluvial, although well graded, is able to store and transmit relatively large quantities of groundwater. The hydraulic properties of this unit vary due to its lithologic heterogeneities. The hydrologic characteristics of the near-surface alluvial aquifer vary due to the presence of high permeability zones. These zones are paleo-channels of unconsolidated gravels and streambed deposits. The zones trend north-south reflecting past regional drainage patterns. The transmissivity of these buried channels is much greater than the values determined for the overall alluvial material and is due to their high energy nature of deposition. The transmissivity of the remaining alluvial deposits is low due to their poorly sorted nature and their limited saturated thickness.

Three artesian or confined aquifers that make up the lower confined aquifers are identified in the Las Vegas Valley. These aquifers are coarse-grained facies within the Muddy Creek Formation and are separated from each other by thick, massive layers of clay. The shallow artesian aquifer is located from depths of 200 to 450 feet, and consists of sand and gravel interbedded with clay and silt. At the base of the shallow artesian aquifer, a persistent layer of blue clay, which overlies the highly productive middle aquifer, is present. The middle aquifer is the principal source of groundwater pumped in the valley. A deep aquifer exists in the western half of the valley at depths of 700 feet and has been developed in recent years (1978). It is reported that the deeper confined sand zones in the Muddy Creek Formation have higher piezometric or artesian heads than the shallower confined zones.

The depth to the upper alluvial aquifer varies over the KMCC site from 20 feet below ground surface (bgs) in the northern portion, to 90 feet bgs in the southern portion. The water quality of the upper aquifer is poor and the groundwater is not used. There are no wells within a 4-mile radius on record that draw water from the upper aquifer. Water is of poor quality due to natural conditions.

2.3.3 Climate

The climate of the Las Vegas Valley is semi-arid, consisting of mild winters and dry hot summers. Low humidity, low precipitation, strong winds, and wide extremes in daily temperatures create high evaporation rates. The mean annual precipitation for Las Vegas is 3.76 inches and the average annual evapotranspiration rate has been estimated at 82 inches (Jacobs 1989).

3.0 PHASE II SCOPE OF WORK

The Phase II investigation was implemented to address the concerns of the NDEP regarding 11 areas identified as requiring further investigation in the NDEP LOU dated August 15, 1994. The 11 areas identified are subdivided into eight areas requiring soil sampling and three areas requiring a groundwater investigation.

The 11 areas of investigation are described in this section along with the associated concerns listed in the LOU, and a description of the field work conducted. A base map showing the areas of investigation and sampling locations is presented as Plate 1.

All field measurements and sample collection methods were performed according to the NDEP approved work plan (KMCC document, revision date April 1997).

Eight areas were identified as requiring surface and subsurface soil investigations. A review of the requirements as stated in the LOU, the location and background, and sample location and method for the eight soil investigation areas are described in the following section. Drilling was conducted between April 7 and 11, 1997. The boring logs are included in Appendix B.

Three areas requiring additional groundwater data were identified. Groundwater sampling was required to define potential impacts to groundwater quality resulting from facility operations.

3.1 Trade Effluent Settling Ponds

The portions of LOU items Number 1 and Number 2 relating to the investigation of the "Trade Effluent" (TE) Settling Ponds required the following:

Number 1 - the characterization of potential contamination in the western portion of the KMCC TE pond area which lies west of Ponds WC-1 and WC-2 and east of the earthen berm which defines the eastern margin of the On-site Hazardous Waste Landfill. Historical usage and waste disposal practices are to be used to establish the list of analytes to be evaluated.

Number 2 - Open area due south of TE ponds to further delineate this poorly defined historic disposal area and to establish the nature of materials deposited therein.

3.1.1 Background

The TE settling pond area is located north of the ammonium perchlorate storage area and west of the existing ponds, East WC and West WC (See Plate 1). The TE ponds were operated by the U.S. government from the Fall of 1942 to November 1944 as unlined storage impoundments for acid waste neutralized with caustic liquor. The waste was apparently evenly distributed in the ponds with no segregation of materials in different areas. Each TE pond was approximately 20 acres and the average liquid depth was 7.5 feet.

Portions of the TE pond area have been utilized for other activities. KMCC constructed and operated a hazardous waste landfill in the western portion of the TE pond area between 1980 and 1983. The landfill was closed and capped in 1985 in accordance with Resource Conservation and Recovery Act (RCRA) interim status requirements and is currently under a post-closure monitoring program. In October 1988, lined surface impoundments East WC and West WC were constructed in the northeastern portion of the TE pond area. East WC and West WC are permitted by the NDEP and are currently in operation.

3.1.2 Sampling Locations and Method

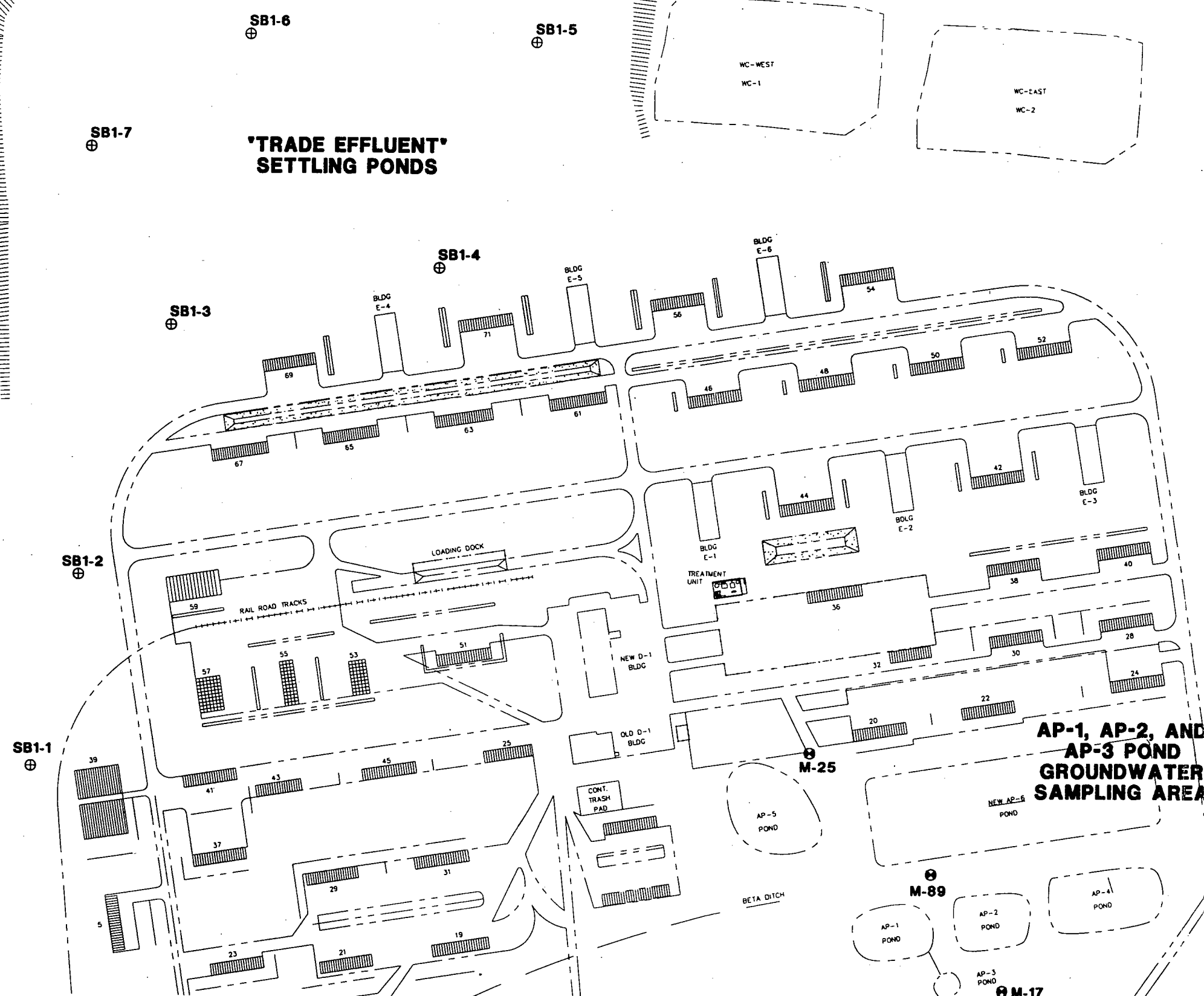
Five soil borings, SB1-3 through SB1-7, were advanced in the area between the closed landfill and surface impoundments. Soil borings SB1-1 and SB1-2 are located in the area of concern due south of the TE ponds. The limits of the area of investigation and the boring locations are shown in Figure 3-1.

Boring locations were selected by a random generation grid placed over the area of historical use which is shown on Plate 1. The borings were advanced to a total depth of 10 feet bgs. In order to characterize the potential remnants of the neutralized aqueous waste historically conveyed to the ponds, soil samples were collected at the following intervals:

0-1 foot bgs	designated as SB1-1-1
4-5 feet bgs	designated as SB1-1-5
9-10 feet bgs	designated as SB1-1-10

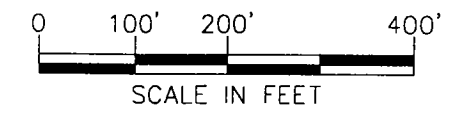
Soil samples collected from the TE settling ponds were analyzed for total RCRA eight metals by U.S. Environmental Protection Agency (EPA) Method 6010 and for soil pH by SW-846 Method 9045.

APPROXIMATE LOCATION
OF HAZARDOUS WASTE
LANDFILL (CLOSED) KMCC-013



LEGEND

- ⊕ SOIL SAMPLING LOCATION
- ⊗ MONITORING WELL LOCATION
- ▨ ESTIMATED LOCATION OF EARTH BERM



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FIGURE 3-1
**TRADE EFFLUENT SETTLING PONDS
SAMPLING LOCATIONS**
Kerr McGee Chemical Corp
Henderson, Nevada

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FILE NO. 4020004L	CHK BY: [Signature]		

3.2 Old P-2 and Old P-3 Ponds

LOU items Number 7 and Number 8 concern the area of the Old P-2 and Old P-3 ponds as stated below:

Number 7 - Old P-2 Pond and Associated Conveyance Facilities required sampling of subsurface soils in the area of the former pond to confirm that residual material concentrations are below state and federal action levels.

Number 8 - Old P-3 Pond and Associated Conveyance Facilities required sampling of subsurface soils in the area of the former pond to confirm that residual material concentrations are below state and federal action levels.

3.2.1 Background

Surface impoundments were used to collect and concentrate dilute sodium chlorate solutions as part of the sodium chlorate production process. The concentrated solutions were recycled from the ponds back into the process. Old P-2 and Old P-3 were lined ponds historically used for this process from 1978 to 1986. Old P-2 encompassed approximately 0.1 acre (4,400 square feet [sq. ft.]) and Old P-3 encompassed approximately 0.3 acre (13,000 sq.ft.). The ponds were constructed with single-layer synthetic liners. The ponds were taken out of service prior to 1987 and the remaining solids, liner, and underlying soils were removed and disposed of at U.S.Ecology.

3.2.2 Sampling Locations and Method

The locations of the Old P-2 and Old P-3 ponds are shown on Plate 1.

Eight shallow soil borings, SB2-1 through SB2-8, were advanced in Old P-3 pond and five shallow borings, SB2-9 through SB2-13, were advanced in Old P-2 pond with shallow (-S) samples collected at depths of 0 to 12 inches bgs, and deep (-D) samples collected at depths of 24 to 36 inches bgs. Sample locations are shown in Figure 3-3. Soil boring and sampling locations were selected using a random generation grid superimposed over the area of investigation.

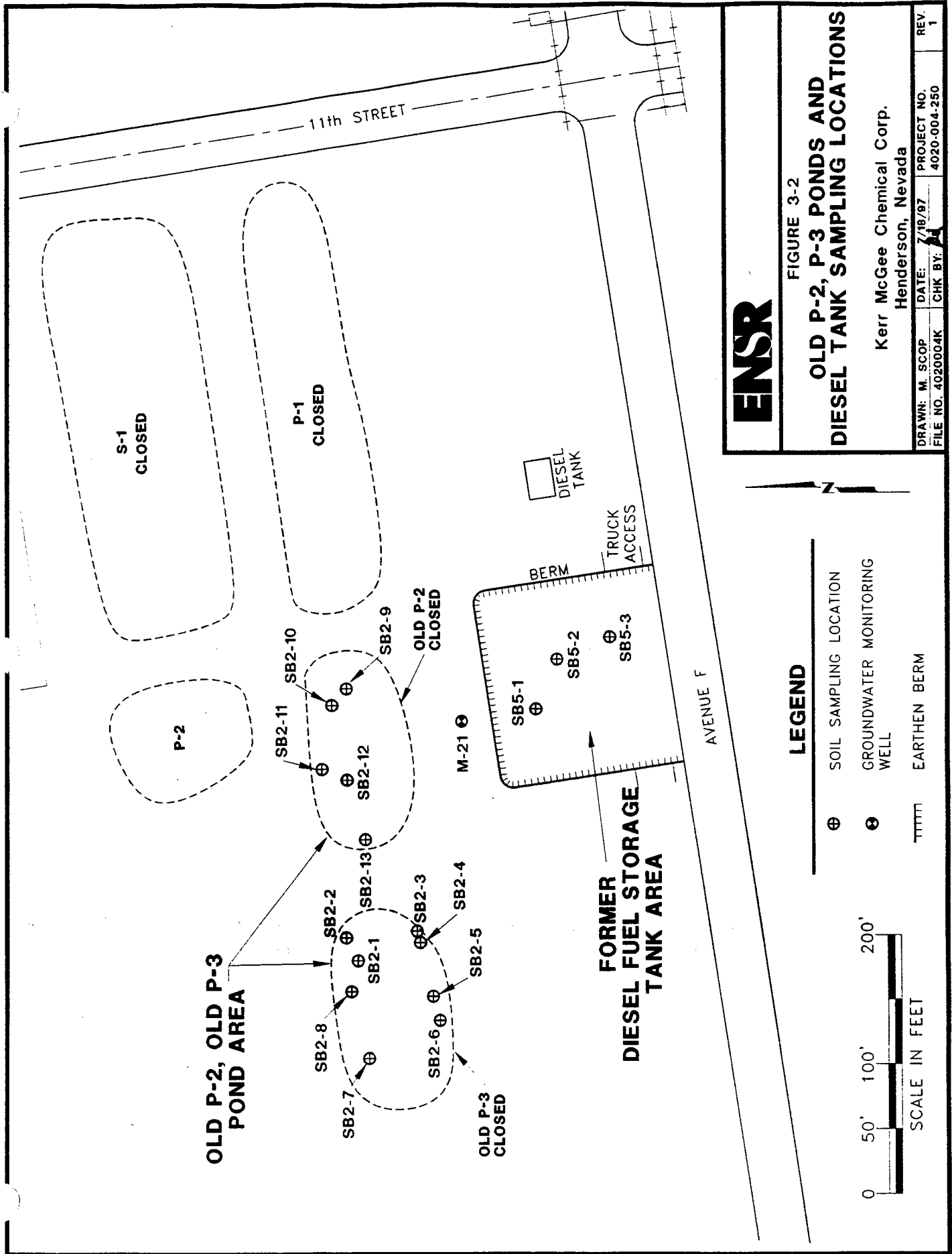


FIGURE 3-2

OLD P-2, P-3 PONDS AND DIESEL TANK SAMPLING LOCATIONS

Kerr McGee Chemical Corp.
Henderson, Nevada

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FILE NO. 4020004K	CHK BY: [Signature]		

Based on the historical records of the constituents in the aqueous stream conveyed to the ponds, the 0- to 12-inch soil sample was analyzed for total chromium by EPA Method 6010 and soil pH by SW-846 Method 9045. A single, randomly selected deep soil sample collected at 24 to 36 inches bgs from each of the two ponds (SB2-1-D from Old P-2 and SB2-12-D from Old P-3 pond) was analyzed for total chromium and soil pH. Additionally, when any of the 0- to 12-inch soil samples indicated a level of chromium exceeding 100 parts per million (ppm), the deeper 24- to 36-inch sample for that boring was also analyzed for total chromium and soil pH. Organics reportedly were not discharged into the ponds and, therefore, no analysis for organic compounds was conducted.

3.3 Truck Unloading Area

The truck emptying/dump site, referred to herein as the truck unloading area, was identified as requiring additional investigation in LOU item Number 35 as follows:

Number 35 - sampling for the assessment/characterization of "unknown" waste materials disposed in this area.

3.3.1 Background

The truck unloading area, as shown on Plate 1, is an open area where truckers reportedly periodically discarded remnants of various substances, such as soda ash and lime. To prevent further use, earth berms have been placed on the east, west, and south sides of the area to prevent truck access. The area is 160 feet wide north-south by 315 feet long east-west and encompasses approximately 1.15 acres.

3.3.2 Sample Locations and Method

Eight shallow soil borings, SB4-1 through SB4-8, were advanced and shallow samples (-S) were collected from depths of 0 to 12 inches bgs, and deep samples (-D) were collected from depths of 24 to 36 inches bgs. The sampling locations were chosen using a random generation sampling grid superimposed over the investigation area.

Based on information provided by a previous terminal manager, the truck unloading area was used for the unloading of inorganic materials. Sample analysis was conducted for total metals by EPA Method 6010/7000 and pH by SW-846 Method 9045. In addition, in order to assess whether degreasing or truck washing material remained at the site, the samples were analyzed for total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) by EPA Methods 8015M-d and 8240, respectively. All samples collected were analyzed.

3.4 Diesel Fuel Storage Tank

LOU item Number 45 required:

Number 45 - a work plan designed to address visible and potential hydrocarbon contamination of soil and/or groundwater in this area (i.e., diesel storage tank area).

The assessment in this area included both soil and groundwater investigations. The soil investigation was focused in the area of a former diesel aboveground storage tank (AST) located within an earthen berm area.

3.4.1 Background

The former diesel fuel storage AST located south of Old P-2 pond was removed by KMCC in 1994. The groundwater portion of the diesel fuel storage area investigation concerned the former use of the AST located south of Old P-2 pond.

3.4.2 Sample Location and Method

The location of the diesel fuel storage tank area and the boring locations advanced during this investigation are shown on Plate 1.

Three soil borings, SB5-1, SB5-2, and SB5-3, were advanced to 10 feet bgs and samples collected from depths 0-1 feet (-1), 4 to 5 feet (-5), and 9 to 10 feet (-10) bgs were submitted for analysis. To determine the vertical extent of possible contamination, the boring locations were selected in the field based on visual observations of soil staining. Only minor staining was observed. Figure 3-2 presents an enlargement of the diesel fuel storage tank area illustrating the boring locations and the approximate location of the earthen berms surrounding the former diesel fuel storage tank.

The AST historically contained diesel fuel and the soil samples were analyzed for diesel components by EPA Method 8015M-diesel. Groundwater samples were collected from existing monitoring wells M-21, and M-10 shown on Plate 1. The wells were purged and sampled according to the work plan protocol. Well M-21 is located in the northern portion of the KMCC property and in the downgradient flow direction. Well M-10 is located south and upgradient of the diesel fuel storage area. The groundwater samples were analyzed for diesel constituents by EPA Method 8015M-diesel.

3.5 Ammonium Perchlorate (AP) Plant Area Change House/Lab Septic Tank

The AP plant area change house and lab septic tank area was addressed in LOU item Number 54:

Number 54 - required an assessment/characterization of potential contamination related to waste chemical disposal via the laboratory septic system.

3.5.1 Background

The AP plant change house and laboratory is located in the west central portion of the KMCC facility. The change house was constructed in the early 1950s and the chemistry laboratory was added in 1980. Wastewater effluent from the change house showers, restrooms, and laboratory sinks discharged to a septic system with an associated leachfield.

Laboratory operations included rinsing laboratory equipment, preparing standards, analyzing inorganic samples, preparing analytical solutions, and preparing dilute titrants. Hazardous solutions were collected and shipped to an appropriate disposal facility. Rinse water from the laboratory entered the septic system until August 1992. In August 1992, the use of the septic system was discontinued. The change house showers, restrooms, and laboratory sinks now discharge to a pump station, which transfers the water to the City of Henderson sanitary drains.

3.5.2 Sample Locations and Method

The location of the septic system and sample locations are shown on Plate 1.

Two soil borings, SB6-1 and SB6-2, were advanced in the area of the former septic system. Locations were selected near the outfall of the septic system in order to assess potential impacts to soil from the tank and leach lines. Based on field observations, the boring locations were adjusted from those designated in the Work Plan and placed in the outfall area below the tank outlet. Soil samples were collected at 4 to 5 feet (-5), 9 to 10 feet (-10), and 14 to 15 feet (-15) bgs, for a total of six samples. Based on the substances utilized in the quality control laboratory, the samples were analyzed for total metals by EPA Method 6010/7000, soil pH by SW-846 Method 9045, VOCs by EPA Method 8240, and semi-volatile organics compounds (SVOCs) by EPA Method 8270.

3.6 J.B. Kelley, Inc. Trucking Site

LOU item Number 63 included two tasks for the J.B. Kelley, Inc. Trucking Site:

Number 63 - first a documentation request and the second required characterization of areas potentially impacted by truck washing rinsate and liquids and sludges present in the concrete vaults.

This investigation addresses the second task.

3.6.1 Background

J.B. Kelley, Inc. leased property from KMCC immediately south and east of the truck unloading area and operated a trucking operation onsite. The company hauled commodities such as lime and soda ash. The area of interest at the J.B. Kelley, Inc. site included the open concrete vaults which formerly served as foundations for storage buildings.

3.6.2 Sample Location and Method

The location of the J.B. Kelley, Inc. Trucking Site and the sampling point are shown on Plate 1.

Because materials could potentially migrate through cracks in the concrete vault floor, one shallow boring, S7-1-1, was advanced through a crack in a concrete vault floor. The boring location was chosen in the field and a soil sample was collected immediately beneath the concrete floor. Additionally, samples of sand that had accumulated within the vaults were collected from each of the eight vaults and composited into a single "soil" sample, S7-1-S.

Based on the inorganic materials hauled by the trucking operation, the samples from this location, were analyzed for total metals by EPA Method 6010/7000 and soil pH by SW-846 Method 9045. In addition, the samples were analyzed for TPH by EPA Method 8015M-diesel and VOCs by EPA Method 8240 to determine if degreasing or truck washing material had impacted the soils.

3.7 A.P. Satellite Accumulation Point - AP Maintenance Shop

LOU item Number 39 requested:

Number 39 - documentation of remediation of a minor spill noted in the Phase I Report including information regarding the association between the spill and the 1,1,1-trichloroethane (TCA) stored in the area. Additional information was requested regarding improvements in the area operating procedures for the purpose of minimizing or eliminating spillage of waste materials.

3.7.1 Background

The AP maintenance shop is located at the KMCC facility to provide for repair of equipment in the north portion of the site. Associated with activities at the maintenance shop is the storage of new lubricating oils and greases, used oil, and parts washer fluids.

Staining near the storage area for the above-mentioned material was observed during the Phase I field investigation which was subsequently found to be the result of minor spillage from a used oil drum. Visibly stained soil was picked up and disposed of at Environmental Technology's soil/oil treatment farm. Subsequent tests indicated that TPH was still present.

3.7.2 Sample Location and Method

The location of the A.P. Satellite Accumulation Point-AP Maintenance Shop investigation area is shown on Plate 1.

Visibly affected soil in an area of approximately 3-by 3-by 0.5-feet was excavated using a shovel and placed in a Department of Transportation (DOT)-approved drum. A single surface soil sample, S8-1S, was collected from the bottom of the excavation and analyzed for TPH by EPA Method 8015M-diesel to confirm that the TPH affected soil had been removed. Laboratory results indicated that TPH remained in the soil and, as a consequence, an additional 6 inches of soil were removed. Another sample, S8-1RE, was collected from the bottom of the excavation and reanalyzed as stated above.

3.8 Unit 1 Tenant Stains

LOU item Number 41 required the following:

Number 41 - to provide documentation of remediation of hydrocarbon impacted soil in this area.

Adequate documentation was not available regarding the prior remedial efforts in the area of Unit 1; therefore, KMCC planned to remove remaining visibly stained soil, if any, and resample to confirm removal of impacted soils.

3.8.1 Background

As part of an earlier effort, visibly stained soil immediately north of Unit 1 was removed and disposed of at Environmental Technology's soil/oil treatment farm. Subsequent analysis indicated soils remaining in place were still impacted with TPH.

3.8.2 Sample Location and Method

The Unit 1 Tenant Stain investigation area is shown on Plate 1.

The area was excavated with a shovel and potentially impacted soils were placed in a DOT-approved drum. The excavated area was approximately 6-by 8-by 0.2-feet. A soil sample, S9-1S, was collected from a randomly selected location in the bottom of the excavation, as shown on Plate 1, to confirm the complete removal of the TPH-impacted soil. The sample was analyzed for TPH by EPA Method 8015M-diesel on a 24-hour turnaround time to determine if further soil removal was required. The analysis indicated TPH remained in the soil above 100 milligrams per kilogram (mg/kg) and the area was further excavated by scraping the surface with a backhoe. A second confirmatory soil sample, S9-1RE, was collected and analyzed.

3.9 AP-1, AP-2, and AP-3 Ponds

Several issues regarding Ponds AP-1 and AP-2 and associated transfer lines and Pond AP-3 and associated transfer lines were outlined in LOU item Numbers 16 and 17 as follows:

Numbers 16 and 17 - the remaining issues relates to ammonium perchlorate high solubility in water, and due to the fact that the ammonium ion (NH_4^+) may be rapidly transformed to nitrate by the action of indigenous microbes in the soil through the process of nitrification.

Therefore, the AP pond area was to be evaluated for potential groundwater impacts by nitrates.

3.9.1 Background

Five synthetically lined surface impoundments, designated AP-1, AP-3, AP-4, AP-5, and AP-6 are part of the AP process. The AP area and the existing well locations are shown on Plate 1.

3.9.2 Sample Locations and Method

Samples were collected from three existing monitoring wells as shown on Plate 1. Well M-17 is located immediately upgradient of the ponds, and M-89 and M-25 are situated in the downgradient groundwater flow direction. The wells are screened in the shallow upper aquifer. The wells were purged and sampled according to the work plan specifications. The samples were analyzed for nitrates by EPA Method 300.

3.10 Hardesty Chemical Site

LOU item Number 4 required:

Number 4 - additional information regarding the past operation of Hardesty Chemical Company at the KMCC facility. The additional investigatory work was based on the information obtained regarding the Hardesty facility.

3.10.1 Background

Hardesty Chemical Company (Hardesty) began operations in September 1946 and occupied eight buildings including Unit 2. In early 1948, Hardesty was purchased by AMECCO Chemicals, Inc. Products listed for proposed production included muriatic acid, synthetic hydrochloric acid, monochlorobenzene, paradicychlorobenzene, orthodichlorobenzene, DDT, and soda arsenite solution.

Drawings of the facility indicate that there were two underground storage tanks (USTs) located to the north of Unit 2, one for kerosene and one for benzene. A tank farm was also located north of Unit 2 on the north side of the railroad tracks. None of these tanks are present today.

3.10.2 Sample Locations and Method

One groundwater monitoring well (M-97) was installed downgradient from the tank farm and former USTs. The former location of the Hardesty Chemical Company and associated tanks and the location of M-97 are shown on Plate 1. The lithologic log of the well boring and the monitoring well completion diagram is presented in Appendix B with boring logs.

The borehole was advanced to a total depth of 50 feet bgs and samples were collected every 5 feet for lithologic logging and control. The borehole was converted to a well, which was constructed according to the work plan specifications.

Based upon the substances historically used at the Hardesty site, the groundwater sample was collected and analyzed for VOCs, SVOCs, specific conductance, TPH, pH, and arsenic by EPA Methods 8240, 8270, 8015M-diesel, 9045, and 6010/7000 and SW-846 9045, respectively.

4.0 ANALYTICAL RESULTS AND SUMMARY OF FINDINGS

Soil and groundwater samples were obtained during the field work performed between April 7, and 11, 1997. The laboratory analytical results are included in Appendix C.

This section includes a summary of the soil and groundwater sample analytical results obtained during this investigation. Eight areas required surface and subsurface soil sampling. Three areas were investigated for groundwater quality during this investigation. The LOU identified two areas: AP Ponds and the diesel storage tank area for further characterization and information regarding the Hardesty Chemical site. KMCC voluntarily added the Hardesty Chemical site to the work plan for additional groundwater characterization.

4.1 Trade Effluent Settling Ponds

Soil samples collected from the TE settling ponds were analyzed for total RCRA eight metals and for soil pH. The results of the analysis are presented in Table 4-1.

TABLE 4-1

**Trade Effluent Settling Ponds
Analytical Results**

Boring Number	Sample Depth (bgs)	Metals EPA Method 6010 (mg/Kg)								pH Method 9045
		Arsenic	Barium	Cadmium	Total Chromium	Lead	Selenium	Silver	Mercury	
SB1-1	-1	3.2 ¹	173 ¹	<0.4	11.4	8	<0.8	<0.4	<0.1	8.9
	-5	4.4 ¹	131 ¹	<0.4	9.9	5.1	<0.8	<0.4	<0.1	8.6
	-10	5.1 ¹	183	<0.4	13.6	8.7	<0.8	<0.4	<0.1	8.2
	-10 DUP	5.16	193	<0.4	14.2	8.23	<0.8	<0.4	<0.1	ND
SB1-2	-1	3.9	180	<0.4	11	9.7	<0.9	<0.4	<0.1	8.2
	-5	4.1	286	<0.4	12.8	9	<0.9	<0.4	<0.1	8.3
	-10	5	198	<0.4	11.8	8	<0.8	<0.4	<0.1	8.7
SB1-3	-1	3.5	182	<0.5	10.2	8.4	<0.9	<0.5	<0.1	9.6
	-5	3.4	96.8	<0.5	9.9	6	<0.9	<0.5	<0.1	9.5
	-10	5.2	213	<0.4	13.4	8.4	<0.8	<0.4	<0.1	9.7

TABLE 4-1 (cont'd)

**Trade Effluent Settling Ponds
Analytical Results**

Boring Number	Sample Depth (bgs)	Metals EPA Method 6010 (mg/Kg)								pH Method 9045
		Arsenic	Barium	Cadmium	Total Chromium/	Lead	Selenium	Silver	Mercury	
SB1-4	-1	5.6	72.3	<0.4	5.70 (B)	8.33	<0.8	<0.4	<0.1	9.6
	-5	5	328	<0.4	12.6	8.5	<0.8	<0.4	<0.1	8.7
	-10	6.3	75.2	<0.4	18	7.8	<0.9	<0.4	<0.4	8.6
SB1-5	-1	8.6	237	<0.5	23.8	65.8	<5	<0.5	0.1	9.6
	-5	17.4	397	2.6	43.5	158	<5	<0.5	<0.4	9
	-10	4.3	212	<0.4	16.1	10.3	<0.8	<0.4	<0.5	9.5
SB1-6	-1	4.1	245	<0.5	15.9	16	<1	<0.5	<0.1	9.8
	-5	4.2 ¹	164 ¹	<0.4	15.8	8.9	<0.8	<0.4	<0.1	8.4
	-10	6.7 ¹	197 ¹	<0.4	13.8	7	<0.8	<0.4	<0.1	8.6
SB1-7	-1	6.6 ¹	168 ¹	<0.4	31.3	184	<0.9	<0.4	<0.1	9.2
	-5	18.3 ¹	812 ¹	0.428 (B)	37.7	60.6	<9	0.6 (B)	<0.1	8.4
	-10	5.1 ¹	178 ¹	<0.4	14.6	8.9	<0.8	<0.4	<0.1	8.9
	-10D	4.7	134	<0.4	14.3	6.9	<0.9	<0.4	<0.4	8.8

< = not detected above the designated method detection limit with qualifier U-constituent was analyzed for but not detected.
 B = Reported value is less than the contract-required detection limit but greater than or equal to the instrument detection limit.
 1 = Relative percent difference (RPD) exceeded acceptable quality control limits.
 Dup = Duplicate
 ND = Not Determined

Analytical results of soil samples collected from the TE ponds indicate that metal concentrations in soil samples were within the range of the average concentration of these constituents in soils. The average concentration and/or natural range of metals in soil is presented in Appendix D (ASTM 1995).

The range of soil pH within the samples is from 8.2-9.8. The expected range of pH for soils in a desert environment is 8 to 9, but it is not unusual for pH to range 7 to 11 (Boul,S.W.,1973).

Based on the results of low to non-detected levels of metals in samples and the average pH of soils, the former waste disposal practices in the TE ponds has area not adversely affected the soils in this area and the project objectives for this area have been met.

4.2 Old P-2, Old P-3 Ponds

Surface soil samples were collected and analyzed for total chromium and soil pH. The surface soil samples and one deep sample from each pond, SB2-1-D from Old P-2 pond and SB2-12-D from P-3 pond, were submitted for analysis and the remaining deep samples were placed on hold. If the level of total chromium exceeded 100 ppm, the 24- to 36-inch sample for that boring was analyzed for total chromium and soil pH.

The analytical results of soil samples collected from the Old P-2 and Old P-3 ponds are presented in Table 4-2.

TABLE 4-2

**Old P-2 and Old P-3 Ponds
Analytical Results**

Boring Number	Sample Depth (feet bgs)	Total Chromium EPA Method 6010 (mg/Kg)	pH Method 9045
Old P-2 Pond			
SB2-1	-S	1,030	9.72
SB2-1S	Lab Dup	1,030 ¹	9.72
SB2-1	-D	131	9.9
SB2-2	-S	108 ¹	9.6
SB2-2 ²	-D	2,130	9.6*
SB2-2D ²	Lab Dup	1,770	9.60*
SB2-3	-S	92.6 ¹	10.3
SB2-3	-D	NA	NA
SB2-4	-S	261 ¹	10.4
SB2-4 ²	-D	78.7	10.4*
SB2-5	-S	13 ¹	9.7
SB2-5	-D	NA	NA
SB2-6	-S	24.8 ¹	9.1

TABLE 4-2 (cont'd)

**Old P-2 and Old P-3 Ponds
Analytical Results**

Boring Number	Sample Depth (feet bgs)	Total Chromium EPA Method 6010 (mg/Kg)	pH Method 9045
SB2-6	-D	NA	NA
SB2-7	-S	224 ¹	9.7
SB2-7 ²	-D	181	10.5*
SB2-8	-S	1,890 ¹	10
SB2-8	-S-DUP	1,680 ¹	9.9
SB2-8 ²	-D	1,780	9.86*
Old P-3 Pond			
SB2-9	-S	493 ¹	9.5
SB2-9 ²	-D	141	9.71*
SB2-10	-S	1,560 ¹	9.8
SB2-10 ²	-D	679	10*
SB2-11	-S	1,130 ¹	9.6
SB2-11 ²	-D	107	10*
SB2-12	-S	884 ¹	9.5
SB2-12	-D	86 ¹	9.4
SB2-13	-S	532 ¹	9.9
SB2-13	-S-DUP	481 ¹	9.9
SB2-13 ²	-D	23.5	10.2*
<p>-S = shallow sample collected from 0 to 12 inches bgs -D = deep sample collected from 24 to 36 inches bgs NA = not analyzed * = Holding time for soil pH had expired 1 = Relative percent difference (RPD) exceeded acceptable quality control limits. 2 = Sample removed from hold status and analyzed after receiving preliminary shallow sample results. Holding time for pH had already expired.</p>			

With the exception of SB2-3, SB2-5, and SB2-6, the surface samples in the boreholes contained total chromium above 100 mg/kg. Consequently, all deep samples with the exception of these

locations were analyzed for total chromium. In several areas (SB2-1, SB2-2, SB2-8, SB2-10, and SB2-11), the levels were above 1,000 mg/kg.

Generally, the subsequent analysis of the deep sample indicated a decrease in the concentration of total chromium with the exception of SB2-2 and SB2-8 in Old P-2 pond. The concentration of total chromium in all samples from Old P-3 decreased with depth.

Additional work is required to determine if further actions are warranted. KMCC is developing a plan for further work and will be prepared to submit this to NDEP subsequent to approval of this Phase II report.

4.3 Truck Unloading Area

Two samples from each borehole (a total of 16 samples) were analyzed for total metals, pH, TPH, and VOC. Table 4-3 presents the results of the metal, pH, and TPH analysis in the truck unloading area. VOC results are discussed below.

Analytical results of soil samples collected from the truck unloading area indicate that metal concentrations in the soil samples were not elevated compared to the range of the average background concentration of these constituents in Western U.S. soils (Appendix D).

The soil samples from the truck unloading area contained TPH at concentrations below the NDEP established criteria of 100 mg/kg for petroleum-impacted soils. The pH for soils ranged from 8 to 10.

In addition to the above analyses, the samples collected from the truck unloading area were analyzed for VOC by EPA Method 8240 to determine if truck washing practices have impacted soils. With the exception of samples SB4-2-D, SB4-5-D, SB4-6-D, and SB4-8-S, the remaining samples did not contain detectable VOC concentrations above the laboratory practical quantitation limit (PQL). Samples SB4-2-D, SB4-5-D, SB4-6-D, and SB4-8-S contained acetone at concentrations of 11, 6.8, 70, and 8.7 micrograms per kilogram ($\mu\text{g}/\text{kg}$), respectively. However, acetone was also detected in a laboratory method blank at 4.4 micrograms per Liter ($\mu\text{g}/\text{L}$). Samples SB4-6-D, SB4-5-D, and SB4-8-S were qualified as estimated values detected at a level less than the laboratory PQL. Analytical results of soil sample SB4-8-S indicated that the surface soil sample contained 2.4 $\mu\text{g}/\text{kg}$ of TCA, which was also an estimated value detected at a level less than the laboratory PQL.

Based on the analytical results of sampling conducted to address the unknown waste material possibly disposed at the truck unloading area, as discussed in LOU item Number 35, this area has not been adversely impacted.

TABLE 4-3

**Truck Unloading Area
Analytical Results**

Boring Number	Sample Depth	Metals EPA Method 6010 (mg/Kg)								pH Method 9045	TPH EPA Method 8015M-d mg/Kg
		As	Ba	Cd	Total Cr	Pb	Se	Ag	Hg		
SB4-1	-S	11.4 ¹	1010 ¹	<0.4	21.4	56.4	<4	<0.4	<0.1	9.52	<30
	-SDup	24.5	1450	<0.4	19.1	52.0	<4	<0.4	<0.1	ND	ND
	-D	5.3 ¹	246 ¹	<0.4	15.7	18.4	<0.8	<0.4	<0.1	10.3	<30
SB4-2	-S	10 ¹	558 ¹	<0.4	18.5	51.8	<0.8	<0.4	<0.1	8.32	<90
	-D	3.5 ¹	179 ¹	<0.4	14.1	9.8	<0.8	<0.4	<0.1	8.63	<30
SB4-3	-S	17.4 ¹	1360 ¹	<0.4	23	141	<4.0	0.6	<0.1	8.64	41 (X)
	-D	3.9 ¹	161 ¹	<0.4	13	7.9	<0.8	<0.4	<0.1	9.14	<30
SB4-4	-S	5.3 ¹	175 ¹	<0.4	13.1	23	<0.8	<0.4	<0.1	8.92	37 (X)
	-D	4.2	199 ¹	<0.3	20.7	9.4	<0.7	<0.3	<0.1	9.27	<30
	-D-DUP	9.3	207 ¹	<0.4	24.2	29.2	<0.8	<0.4	<0.09	9.25	<30
SB4-5	-S	6.6	190 ¹	<0.3	20.1	15.3	<3	<0.3	0.1	8.14	<89
	-D	4.4	196	<0.4	15.9	10.9	<0.8	<0.4	<0.1	8.24	<30
SB4-6	-S	4.3	200 ¹	<0.4	17.4	9.4	<4	<0.4	<0.1	9.65	<30
	-D	5.3	202 ¹	<0.4	18.1	12.9	<0.8	<0.4	<0.09	9.07	<30
SB4-7	-S	16.6	329 ¹	<0.4	21.8	59.9	<4	<0.4	<0.1	9.94	<30
	-D	4.9	245 ¹	<0.4	17.4	14.3	<0.7	<0.4	<0.1	8.67	<30
SB4-8	-S	14.6 ¹	360 ¹	<0.4	15.5	83	<0.8	<0.4	<0.1	9.18	79 (X)
	-D	4.4	227 ¹	<0.4	14.3	11.5	<0.8	<0.4	<0.1	7.85	<89

-S = Shallow sample collected from 0 to 12 inches bgs
-D = Deep sample collected from 24 to 36 inches bgs
< = Not detected above the designated PQL.
(X) = TPH heavier than diesel present. The concentration result was based on the area of the peaks within the retention time window of diesel-range organics.
1 = Relative percent difference (RPD) for duplicate analysis exceeded acceptable quality control limits.
ND = Not Determined
Ar - Arsenic Cr - Chromium Ag - Silver
Ba - Barium Pb - Lead Hg - Mercury
Cd - Cadmium Se - Selenium

4.4 Diesel Fuel Storage Tank

The soils investigation in the diesel fuel storage tank area was conducted to determine whether a former AST has impacted soils. A groundwater investigation was also conducted and is discussed in Section 4.2.2.

Three soil borings were advanced within a bermed area that displayed minimal surface staining. The samples were analyzed for TPH diesel. The results are presented in Table 4-4.

TABLE 4-4

**Diesel Fuel Storage Tank Area
Analytical Results**

Boring Number	Sample Depth (feet bgs)	TPH EPA Method 8015M-d mg/kg
SB5-1	-1	16,000
	-5	(<34)
	-10	(<34)
SB5-2	-1	7,500
	-5	9,100
	-10	6,700
SB5-3	-1	4,500
	-5	1,300
	-10	520
	-10D	800

The NDEP has published cleanup standards for hydrocarbon-contaminated soil. The NDEP cleanup level established for diesel analyzed by EPA Method 8015M is 100 mg/kg. The near-surface soils in the three boreholes contained TPH above this cleanup level. Subsurface soils at depths of 5 and 10 feet bgs in boring SB5-1 contained non-detectable levels of TPH, indicating that only the near-surface soils are impacted in this area. Soil samples collected at

5 and 10 feet bgs in soil borings SB5-2 and SB5-3 contained TPH above the NDEP cleanup level of 100 mg/kg. Additional work is required to determine if further actions are warranted. KMCC is developing a plan for further work and will be prepared to submit this to NDEP subsequent to approval of this Phase II report.

The groundwater investigation in the diesel storage tank area was in response to concerns relating to the former use of a diesel AST.

Two existing monitoring wells were sampled and analyzed for diesel constituents. Well M-21 is located in the regional downgradient direction and M-10 is located upgradient. Analytical results indicated that TPH concentrations in both samples were less than the PQL of 1.0 mg/L.

The results of the sample analysis indicates that groundwater has not been impacted by the former and/or existing diesel ASTs.

4.5 AP Plant Area Change House/Lab Septic Tank

Two soil borings were advanced and three soil samples collected from each boring in the area of the former septic system leachfield. Based on the substances utilized in the quality control laboratory, the samples were analyzed for total metals, soil pH, VOCs, and SVOCs. The total metals and pH results are presented in Table 4-6 below. The samples were also analyzed for VOCs and SVOCs, and the results are discussed below.

TABLE 4-5

**AP Plant Area Change House/Lab Septic Tank
Analytical Results**

Boring Number	Sample Depth (feet bgs)	Metals EPA Method 6010 (mg/Kg)								pH Method 9045
		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	
SB6-1	-5	3.7	175 ¹	<0.4	15.8	8	<0.7	<0.4	<0.1	8.87
	-5-DUP	4.09	238 ¹	<0.4	14.0	8.82	<0.7	<0.4	<0.1	9
	-10	6	327 ¹	<0.4	16.1	8.4	<0.8	<0.4	<0.1	9.14
	-15	5.6	150 ¹	<0.4	15.2	7.2	<0.8	<0.4	<0.1	10.0
SB6-2	-5	4	150 ¹	<0.4	13.9	7.9	<4	1.2	0.1	8.47
	-10	5.8	170 ¹	<0.4	17.6	10.1	<4	<0.4	<0.1	8.37
	-15	5.1	173 ¹	<0.4	16.4	8.5	<4	<0.4	<0.1	8.73

¹ = Relative percent difference (RPD) for duplicate analysis exceeded acceptable quality control limits.

Analytical results of soil samples collected from the AP plant area change house/lab septic tank area indicate that total metal concentrations in the soil samples were not elevated above the range of the average concentration of these constituents in Western U.S. (Appendix D)

The soils pH ranged between 8 and 10, which is in the normal range for arid soils.

All soil samples contained non-detectable levels of VOCs and SVOCs with the exception of sample SB6-1-5 which contained acetone (9.8 µg/kg) at an estimated concentration below the laboratory PQL.

Based on the results of the sample analysis, the waste chemical disposal via the laboratory septic system has not affected soils in the area of the AP plant change house/lab septic tank former leachfield, and the project objectives for this area have been met.

4.6 J.B. Kelley, Inc. Trucking Site

Two soil samples were collected at the J.B. Kelley, Inc. Trucking site. One sample (S7-1-1) was collected from a boring drilled through the bottom of a concrete vault, and the other sample was a composite sand sample, S7-1-S, of materials in the vaults.

Based on the inorganic materials hauled by the trucking operation, both samples were analyzed for total metals, soil pH, and TPH. The results of the analysis are presented in Table 4-6 below. Additionally, the samples were analyzed for VOCs and the results are discussed below.

TABLE 4-6

**J.B. Kelly Trucking
Analytical Results**

Sample Number	Metals EPA Method 6010 (mg/Kg)								Method 8015-d TPH	pH Method 9045
	Arsenic	Barium	Cadmium	Total Chromium	Lead	Selenium	Silver	Mercury		
S7-1-S	10.5	516 ¹	0.8	42.9	257	<4	<0.4	<0.1	<90	9.09
S7-1-1	4.9 ¹	187 ¹	<0.4	19.3	9.9	<0.8	<0.4	<0.09	<30	8.50

-S = surface soil sample
 -1 = soil sample collected at one foot bgs
 < = not detected above the respective PQL.
 1 = Relative Percent Difference (RPD) for duplicate analysis exceeded acceptable quality control limits.

Both samples collected from the J.B.Kelley Trucking area were also analyzed for VOCs. Toluene was detected at 1.1 $\mu\text{g}/\text{kg}$ in sample S7-1-S. Sample S7-1-1 contained 1.6 $\mu\text{g}/\text{kg}$ of TCA and 13 $\mu\text{g}/\text{kg}$ of acetone. These analyses were qualified by the laboratory. The concentrations of toluene and TCA were estimated since they were below the laboratory PQL. Acetone was detected in a method blank.

The results of total metal analyses indicate that all constituents were detected at concentrations within the range of average background concentrations in Western U.S. soils. Total chromium concentration in the surface soil sample collected by compositing remnant sands from the bottom of each vault was 42.9 mg/kg. While this concentration is slightly elevated, it is still below the range of average background concentrations indicating that chromium is not at concentrations likely to represent an environmental concern.

Both samples were non-detect for TPH at the designated laboratory PQL.

VOCs detected in soil samples collected from the J.B. Kelly Trucking area were reported at concentrations below the laboratory PQL or were detected in the laboratory method blank. As a result, VOCs are not estimated to be present at significant concentrations in soils.

Based on the analytical results of the soil samples collected, the former J.B. Kelley Trucking operation has not affected surface and subsurface soil.

4.7 A.P. Satellite Accumulation Point - AP Maintenance Shop

Visibly stained soil resulting from a minor spill from a used oil drum was observed in the AP satellite accumulation point-AP maintenance shop during a Phase I investigation.

Visibly affected soil was removed and a surface soil sample, S8-1S was collected and analyzed by TPH fuel fingerprint method. The sample was submitted for 24-hour turn around to verify whether the TPH affected soil had been successfully removed. The sample results indicated that 180 mg/kg diesel and 1,500 mg/kg motor oil constituents remained in the soil. TPH as gasoline was not detected above the laboratory PQL of 29 mg/kg.

The area was revisited and additional soil was removed and containerized in a DOT-drum. A second confirmation sample (S8-1RE) was collected from the bottom of the excavated area and submitted for analysis. The sample result was non-detect for TPH in the diesel-range organics at the respective quantification limits (<31 mg/kg).

The removal of soil from the A.P. Satellite Accumulation Point-AP Maintenance area effectively remediated the area and the subsequent sampling analysis confirmed that no diesel-range organics above laboratory detection limits remain in this area, and the project objectives for this area have been met.

4.8 Unit 1 Tenant Stains

As part of this Phase II effort, visibly stained soils were removed and placed in a DOT drum and a surface soil sample, S9-1S, was collected and submitted for 24-hour turnaround by TPH fuel fingerprint analysis. Analytical results indicated that TPH in the range of motor oil, was detected at a concentration of 250 mg/kg. TPH in the diesel range was quantified at 73 mg/kg and TPH in the gasoline range was not detected above the PQL of 29 mg/kg.

Additional soils were removed from the area with the use of a backhoe. The soils were placed in DOT drums and the area was resampled. A confirmation soil sample (S9-1RE) from the bottom of the excavation contained 100 mg/Kg of TPH heavier than diesel.

The analysis of soil sample SD-1RE indicates that the TPH remaining in soils in the Unit 1 area has been reduced to the action level established by NDEP. The TPH affected soil in the Unit 1 area has been successfully removed, and the project objectives have been met.

4.9 AP-1, AP-2, and AP-3 Ponds

The LOU requested that the AP pond area be evaluated for potential groundwater impacts resulting from nitrates.

Three existing monitoring wells, M-17, M-89, and M-25, were sampled and analyzed for nitrates. The results are presented below:

Well Number	Nitrate-Nitrite-Nitrogen in milligrams per liter (mg/L)
M-17	509
M-89	1,130
M-25	624

The nitrate analysis was conducted by ion chromatography and the laboratory results were presented in terms of elemental nitrogen. At ENSR's request, the chromatograph was reexamined and the retention time peaks separated for nitrate/nitrite. Virtually no nitrite was present in the samples; the sample results are presented in terms of equivalent concentration of elemental nitrogen (NO₃-N/l).

Additional work is required to determine if further actions are warranted. KMCC is developing a plan for further work and will be prepared to submit this to NDEP subsequent to approval of this Phase II report.

4.10 Hardesty Chemical Site

A groundwater monitoring well, M-97, was installed in a downgradient groundwater direction from former USTs associated with the Hardesty Chemical site.

The analysis was based on the documented former use of the site by Hardesty and the former use of USTs. The groundwater sample was analyzed for VOCs, SVOCs, pH, specific conductance, TPH, and arsenic.

The results of the groundwater sample indicate that TPH was not detected at the PQL. Arsenic was detected at 0.124 mg/L, which is within the expected range. Sample analysis indicates that 7.8 µg/L of Di-n-butylphthalate is an estimated concentration below the laboratory PQL. The VOC analytical results indicated the presence of chloroform (18 µg/L) and acetone (3.1 µg/L). The analysis for acetone was an estimated concentration below laboratory PQL and was also detected in the laboratory method blank.

The constituents of concern were either not detected, were detected at low levels as a result of laboratory procedures, or were not representative of adverse environmental conditions, indicating that the former USTs at the Hardesty Chemical site have not impacted groundwater.

5.0 DATA VALIDATION AND REVIEW

5.1 Procedural Summary

This section includes a summary of efforts and results to evaluate and validate laboratory data generated by LAS Laboratories, Inc. (LAS) of Las Vegas, Nevada for the Phase II work at the KMCC site in Henderson, Nevada. Data validation work activities were based on general guidelines presented in documents prepared by the U.S. EPA Hazardous Site Evaluation Division. Analytical results reported for samples were provided to ENSR as five report packages. Several features of the laboratory reports were evaluated. Analytical methods provided in each package were evaluated according to pertinent guidelines for the following features:

- Actual holding times were checked against holding time requirements.
- Sample preservation methods and temperature upon delivery to the laboratory were reviewed to confirm that they were in compliance with generally accepted standards.
- Method blanks were evaluated to determine if contamination was detected or reported.
- Laboratory control samples, duplicate control sample spikes, and interference check samples, where appropriate, were checked to confirm that instrument performance complied with generally accepted performance standards.
- Field duplicates were examined to determine the magnitude of sample heterogeneity.

The report packages did not include laboratory instrument calibration records or handwritten calculational results as these records are not included in the Level II report which was requested by KMCC and approved by NDEP.

5.2 Validation Findings

This section includes a summary of data validation findings for each laboratory package reviewed.

5.2.1 Report Package Number L9133

Report Package Number L9133 contained the results of soil and water samples collected from Unit 1 and the AP maintenance area. These samples were analyzed for TPH, modified for diesel, via EPA Method 8015 M.

All samples were analyzed within the method-specific holding times.

According to the chains of custody, appropriate preservation methods were implemented by the field personnel. The temperature of the cooler containing the samples was 4 degrees Celsius, upon laboratory receipt.

The concentration of the requested analytes in the method blank were below laboratory PQL. Matrix spike samples, matrix spike duplicate, and laboratory control samples were reported by the laboratory to be within accepted ranges.

The analysis for diesel-range TPH samples indicated hydrocarbons heavier than diesel in the sample. These samples are identified with an X in the laboratory results. Quantification of diesel-range TPH was based on the chromatogram peaks which were within the retention time marker of the diesel standard.

5.2.2 Report Package Number L9145

Report Package Number L9145 contained the results of soil samples collected in Areas 4, 6, and 7. These samples were analyzed for conductivity via EPA Method 120.1; pH via EPA Methods 9045 and 150.1; RCRA metals via EPA Method 6010 (with the exception of mercury which was analyzed via EPA Method 7471); TPH modified for diesel via EPA Method 8015 M, VOCs via EPA Method 8240; and semivolatile organic compounds via EPA Method 8270.

All samples were analyzed within the method-specific holding times with the following exception: LAS reported that the method-specific holding time for pH analysis is one week. However, it is generally accepted that the holding time for pH analysis is 24 hours. Therefore, pH results should be qualified.

According to the chains of custody, appropriate preservation methods were implemented by the field personnel. The temperature of the cooler containing the samples was 4 degrees Celsius upon laboratory receipt.

Total barium and chromium were detected in the method blank. Method blank results for other metals and TPH were below laboratory PQLs. One of the five method blanks analyzed for VOCs contained a detectable concentration of acetone. No VOCs were detected above laboratory PQLs in the trip blank. Therefore, associated acetone, barium, and chromium results in the samples should be qualified.

RPD between the sample and the sample duplicate, when applicable, was below 20 percent with the exception of total barium which was 30.7 percent (reference Sample Number SB6-1-5). The RPD between matrix and matrix spike duplicate analysis of Sample Number SB6-2-15 also exceeded the quality control limits for semi-volatile organics.

The remaining matrix spike, matrix spike duplicate, surrogates, and laboratory control samples were reported by the laboratory to be within accepted ranges.

The analysis for diesel-range TPH in Samples SB4-1S, SB4-3S, and SB4-8S indicated hydrocarbons heavier than diesel in the samples. These samples are identified with an "X" in the laboratory results. Sample SB4-1S did not contain diesel-range TPH but contained small amounts of heavy hydrocarbons. Quantification of diesel-range TPH in Samples SB4-3S and SB4-8S was based on the chromatogram peaks which were within the retention time of the diesel standard.

5.2.3 Report Package Number L9157

Report Package Number L9157 contained the results of soil samples collected in Areas 1, 2, 5, 8, and 9. These samples were analyzed for pH via EPA Method 9045; RCRA metals via EPA Method 6010 (with the exception of mercury which was analyzed via EPA Method 7471; TPH, modified for diesel via EPA Method 8015 M; and percent solids.

All samples were analyzed within the method-specific holding times with the following exception: LAS reported that the method-specific holding time for pH analysis is one week. However, it is generally accepted that the holding time for pH analysis is 24 hours. Therefore, pH results should be qualified.

According to the chains of custody, appropriate preservation methods were implemented by the field personnel. The temperature of the cooler containing the samples was 2 degrees Celsius upon laboratory receipt. Two samples, SB5-2-1 and SB5-2-3, were delivered to the laboratory without a chain of custody. However, the samples were recorded on a subsequent chain of custody.

With the exception of total chromium, the concentration of metals and diesel-range TPH in the method blank were below laboratory PQLs. Total chromium was detected at a concentration of 0.5 and 0.6 mg/kg in two laboratory method blanks.

RPD between the sample and the sample duplicate, when applicable, was below 20 percent, with the following exceptions:

- Arsenic, 72.6 percent (reference Sample Number SB4-1S)
- Barium, 35.6 percent and 30.7 percent (reference Sample Nos. SB4-1S and SB6-1-5, respectively)
- Chromium, 29.7 percent (reference Sample Number SB2-1S)

Two samples, SB1-7-10 for pH and SB5-3-10 for TPH, were split to create duplicates. The original and duplicate results for SB1-7-10 were comparable with a RPD of 1.1 percent. The original and duplicate results for sample SB5-3-10 were not comparable with a RPD of 42.4 percent because the sample was not homogeneous and had a high degree of sample heterogeneity within the sample sleeve.

In one instance (reference Sample Number SB2-1S), the matrix spike recovery (MSR) for total chromium exceeded the 75 to 125 percent acceptance limit. Additionally, because the sample concentration is greater than four times the spiked concentration, the data was not qualified.

The surrogate for the TPH matrix spike duplicate was greater than the acceptance limit. The remaining matrix spike, matrix spike duplicate, surrogates, and laboratory control samples were reported by the laboratory to be within accepted ranges.

The analysis for diesel-range TPH samples indicated hydrocarbons heavier than diesel in the sample. These samples are identified with an X in the laboratory results. Quantification of diesel-range TPH was based on the chromatogram peaks which were within the retention time marker of the diesel standard.

5.2.4 Report Package Number L9166

Report Package Number L9166 contained the results of water samples collected from the monitoring well. These samples were analyzed for TPH modified for diesel via EPA Method 8015 M, and nitrates and nitrite-nitrogen via EPA Method 300.

All samples were analyzed within the method-specific holding times.

According to the chain of custodies, appropriate preservation methods were implemented by the field personnel. The temperature of the cooler containing the samples was 4 degrees Celsius upon laboratory receipt.

The concentration of nitrate and nitrates-nitrogen, and diesel-range TPH in the method blanks were below laboratory PQLs.

RPD between the sample and the sample duplicate, when applicable, was within 20 percent. The RPD between the laboratory control sample and duplicate exceeded the quality control limit for TPH analysis.

The spike recovery and RPD for matrix spike and matrix spike duplicates for nitrates and nitrite-nitrogen could not be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration. However, because the sample concentration is greater than four times the spiking level, the data were not qualified. The remaining surrogates and laboratory control samples for all analytes were reported by the laboratory to be within accepted ranges.

5.2.5 Report Package Number L9170

Report Package Number L9170 contained the results of water samples collected in Areas ER 1 through 4. These samples were analyzed for nitrates and nitrite-nitrogen via EPA Method 300, conductivity via EPA Method 120.1, pH via EPA Method 150.1, total dissolved solids (TDS) via EPA Method 160.1, RCRA metals via EPA Method 6010 (with the exception of mercury which was analyzed via EPA Method 7470), and TPH modified for diesel via EPA Method 8015 M.

All samples were analyzed within the method-specific holding times with the following exceptions: LAS reported that the method-specific holding time for pH analysis is one week. However, it is generally accepted that the holding time for pH analysis is 24 hours. Therefore, pH results should be qualified.

According to the laboratory report, appropriate preservation methods were not implemented by the field personnel. The temperature of the cooler containing the samples was 15 degrees Celsius, above the required 4 degrees Celsius, upon laboratory receipt. Therefore, all results in this sample group should be qualified. The sample collection date and delivery date (April 11, 1997) listed on the chain of custody was mislabelled as April 12, 1997. The error was documented by laboratory personnel.

The concentration of the requested analytes in the method blank for nitrates and nitrite-nitrogen, metals were below laboratory PQLs. TDS were reported at a concentration of 13 mg/L in the method blank.

RPD between the sample and the sample duplicate, when applicable, was below 20 percent.

The spike recovery and RPD for matrix spike and matrix spike duplicates for nitrates and nitrite-nitrogen could not be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration. However, because the sample concentration is greater than four times the spiking level, the data were not qualified.

The MSR for lead exceeded the acceptance limit. However, the recovery based on the laboratory control sample was within acceptable limits indicating that the analytical system was operating within control limits.

The remaining matrix spike, matrix spike duplicate, surrogates, and laboratory control samples were reported by the laboratory to be within accepted ranges.

5.2.6 Report Package Number L9647

Report Package Number L9647 contained the results of soil samples that were analyzed for pH via EPA Method 9045 and total chromium via EPA Method 6010. All samples were analyzed within the method specific holding time except pH. According to the laboratory report, appropriate preservation methods were not implemented by the field personnel. The temperature of the cooler containing the samples was 5 degrees celsius, above the require 4 degrees celsius, upon laboratory receipt. Therefore, all results in this sample group should be qualified.

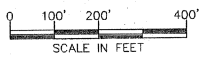
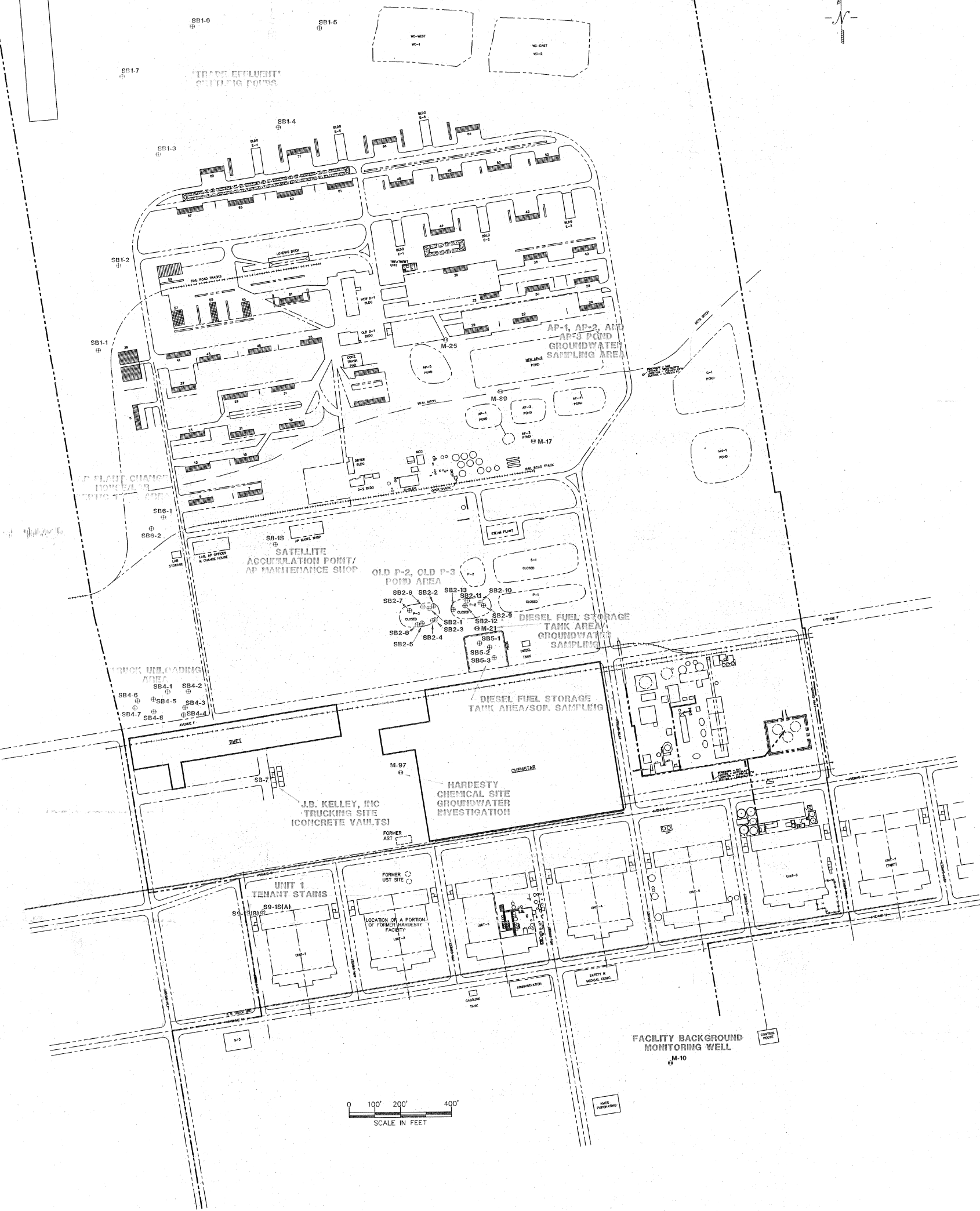
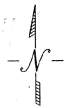
Total chromium was not detected above the laboratory PQL in the method blank. The method blank was not analyzed for pH.

RPD between the sample and the sample duplicate was below 20 percent. The MSR and RPD for matrix spike and matrix spike duplicate analysis of total chromium could not be evaluated due to insufficient spikes concentration compared to the elevated concentration of total chromium in the sample. The percent recovery for total chromium in the laboratory control sample was within acceptable limits.

6.0 REFERENCES

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APPROXIMATE LOCATION
OF HAZARDOUS WASTE
LANDFILL (CLOSED) KMCC-013



LEGEND

- ⊕ SOIL SAMPLING LOCATION
- ⊙ MONITORING WELL LOCATION
- KMCC PROPERTY BOUNDARY

NO.	DATE	REVISIONS	BY	CHKD	APPROV
ENSR					
SITE INVESTIGATION BASE MAP					
Kerr McGee Chemical Corp Henderson, Nevada					
DESIGNED DJ POEHLIS	DATE 7/18/97	DRAWING NUMBER PLATE 1			
CHECKED M. Scop	SCALE 1"=200'	PROJECT NO. 4020-004-250			
APPROVED	FILE NAME 4020004J	REV. NO. 1			

APPENDIX A

**Letter of Understanding from
Nevada Department of Environmental Protection**

STATE OF NEVADA
BOB MILLER
Governor

PETER C. MORROS
Director

H. DODGION
Administrator

Registration:
(702) 687-4670
Fax 687-5856



Fax (702) 885-0868
TDD 687-4678

Waste Management
Corrective Actions
Federal Facilities

Air Quality
Mining Regulation and Reclamation
Water Quality Planning
Water Pollution Control

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

Capitol Complex
333 W. Nye Lane
Carson City, Nevada 89710

August 15, 1994

Susan Crowley
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89009-7000

Subject: Phase II Letter of Understanding Between NDEP and Kerr-McGee Chemical Corporation (KMCC)

Dear Ms. Crowley:

It is the understanding of the Nevada Division of Environmental Protection that, based upon our meetings, discussions, and correspondence with yourself and other representatives of Kerr-McGee Chemical Corporation, Kerr-McGee agrees to perform the following environmental assessment and information gathering activities at or pertaining to the KMCC's Henderson, Nevada facilities. The numbering of the particular items to be addressed follows the system used in NDEP's recommendations (dated December 16, 1992) based upon the Phase I ECA report.

- 1) On-Site Portions of "Trade Effluent" Settling Ponds and Associated Vitrified Clay Piping, SWMU KMCC-014:

Provide the results of soil sampling performed by Datachem (KMCC Final Phase I Report Reference K353 "Analytical reports of soil samples taken in the vicinity of proposed SIs WC-1 and WC-2").

Provide a work plan for characterization of potential contamination in the western portion of the KMCC "Trade Effluent" pond area (that area which lies west of Ponds WC-1 and WC-2 and east of the earthen berm which defines the eastern margin of the On-site Hazardous Waste Landfill. Historical usage and waste disposal practices are to be used to establish the list of analytes to be evaluated.

- 2) Open Area Due South of "Trade Effluent Disposal Ponds:

KMCC will attempt to further delineate this poorly defined historic disposal area and to establish the nature of materials deposited therein. KMCC will incorporate characterization of this area in the work plan for #1 above ("Trade Effluent" Settling Ponds).

- 3) Air Pollutant Emissions Associated with Industrial Processes:

Provide specific references to those passages in KMCC's Final Phase I report (and any other sources of information) which describe the nature (vapor, particulate, etc.) of historical and current air emissions at the KMCC facility. For those emissions which are determined to have been or which are presently depositional in nature, KMCC will provide information regarding patterns of dispersion and probable deposition.

- 4) Hardesty Chemical Company Site:

Provide analytical data obtained from sampling of the ground water monitoring wells installed on the J.B. Kelley lease site. Although these wells were installed for the evaluation of potential hydrocarbon contamination from the underground storage tanks formerly located at the J.B. Kelley site, they are in the area where Hardesty is believed to have carried out its operations. NDEP may request additional sampling of these wells with an expanded list of analytes.

KMCC will provide NDEP with any additional information regarding the past operation of Hardesty Chemical Company at the KMCC facility which may be reasonably available, including facility locations, products, waste streams, and waste disposal. KMCC and NDEP will then determine what additional investigatory work is necessary based upon the identified information concerning the activities of Hardesty at the KMCC site.

- 5) On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1:

Identify segments or tributaries of these conveyances (if any) which received waste streams from KMCC or its predecessors/tenants exclusively. Those portions of the conveyances which historically received waste streams

from two or more of the BMI companies, will be addressed as BMI Common Areas Issues. For those segments or tributaries identified as having been utilized by KMCC or its tenants exclusively, KMCC will prepare a work plan to characterize residual contamination by contaminants of concern which may exist therein.

6) Unnamed Drainage Ditch Segment:

Based upon KMCC's assertion that this ditch is in fact the Northwest Drainage Ditch which received waste streams from more than one BMI company, this area will be addressed as a BMI Common Areas issue.

7) Old P-2 Pond and Associated Conveyance Facilities:

Provide a work plan for sampling of subsurface soils in the area of the former pond to confirm that residual material concentrations are below State and Federal action levels.

8) P-3 Pond and Associated Conveyance Facilities:

KMCC will provide a work plan for sampling of subsurface soils in the area of the former pond to confirm that residual material concentrations are below State and Federal action levels. As a necessary component of this work plan, KMCC will provide additional information on the location, regulatory/closure status, and release history of this impoundment. KMCC will also provide information on the disposition of contaminated material removed from this pond.

9) New P-2 Pond and Associated Piping:

Provide engineering specifications of the impoundment including leak detection systems (e.g. double lined with leachate collection) and the location and configuration of monitor wells intended for this purpose. Provide information regarding the operational and regulatory status of this impoundment and release history (if applicable).

Issues exclusively concerning Total Dissolved Solids impacts to ground or surface water will continue to be addressed by NDEP's Bureau of Water Pollution Control.

- 10) On-Site Hazardous Waste Landfill, SWMU KMCC-013:

Provide the Division with copies of correspondence relating to the closure and post closure status of the landfill. This information should include the post-closure plan.

- 11) SWMU KMCC-005:

Provide specific information (i.e. volume of material, depth of excavation, criteria used to determine extent of contamination, etc.) relating to the removal of the "old drying pad" and underlying fill material and native soils. Provide an evaluation of the feasibility of collecting confirmatory samples of soil from beneath the area of the old pad.

- 12) Hazardous Waste Storage Area, SWMU KMCC-006:

No further action is required at this time.

- 13) Pond S-1:

No further action is required at this time. A review of the RCRA permit status of this SI may be required pending the outcome of Phase II investigations.

- 14) Pond P-1, and Associated Conveyance Piping:

KMCC will provide Closure documentation for this impoundment. A review of the RCRA permit status of this SI may be required pending the outcome of Phase II investigations. No further action is anticipated at this time.

- 15) Platinum Drying Unit, SWMU KMCC-007:

KMCC will provide either analytical data or a technically based argument supporting their contention that minor staining of the soil surrounding this unit is not a threat to either human health or the environment and is not a violation of State or Federal regulations. Included in this information shall be a discussion of how KMCC has revised housekeeping practices so as to eliminate or minimize further releases of material from this unit.

- 16 & 17) Ponds AP-1 and AP-2, and Associated Transfer Lines and Ponds AP-3 and Associated Transfer Lines:

Provide a technical evaluation of the appropriateness of the placement and design criteria for wells used to monitor potential contaminant migration from these impoundments. Include a list of the analytes which are currently monitored for and the latest data. Reference to the facility wide hydrologic evaluation conducted in July of 1993 may be used to provide some or all of the requested information.

Because ammonium perchlorate is highly soluble in water, and due to the fact that the ammonium ion (NH_4^+) may be rapidly transformed to nitrate by the action of indigenous microbes in the soil through the process of nitrification, the AP pond area should be evaluated for potential ground water impacts by nitrates.

Provide an evaluation of the potential reactivity of ammonium perchlorate in the ponds and in site soils.

Provide chromium concentration data for pond contents.

Provide a summary diagram/facility map which more accurately identifies the location of the AP impoundments and the other waste management units/areas of concern at the KMCC facility. Modification of Plate 3-2 of the KMCC final Phase I report would be acceptable for this purpose.

Issues exclusively concerning Total Dissolved Solids impacts to ground or surface water will continue to be addressed by NDEP's Bureau of Water Pollution Control.

18) Pond AP-4:

Reference items 16 & 17 above. The issue of potential chromium contamination is not applicable to this impoundment.

19) Pond AP-5:

Reference items 16 & 17 above. The issue of potential chromium contamination is not applicable to this impoundment.

20) Pond C-1 and Associated Piping, SWMU KMCC-011:

This impoundment has the potential to impact ground water with elevated levels of total dissolved solids. With the

exception of manganese which has a secondary MCL of 50 ug/L, no other compounds of concern appear to have been disposed here. The potential presence of manganese in site ground water should be evaluated (reference to the KMCC hydrologic evaluation of the site performed in July of 1993 is acceptable).

Issues exclusively concerning Total Dissolved Solids impacts to ground or surface water will continue to be addressed by NDEP's Bureau of Water Pollution control. The planned closure of this impoundment should be coordinated with the BWPC as well.

21) Pond Mn-1 and Associated Piping:

Reference item 20 above. It is understood that closure of this impoundment is not anticipated by KMCC at this time.

22) Pond WC-1 and Associated Piping, SWMU KMCC-015:

No further action is required at this time.

23) Pond WC-2 and Associated Piping:

Provide information regarding the clean up of apparently contaminated soil referred to in the KMCC Final Phase I Report.

24) Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area, SWMU KMCC-009:

Provide a technically based argument (which may include existing TCLP and EP Toxicity data) to demonstrate that pre-1975 disposal of slurried and solid waste to these areas will not have the potential to impact ground water with manganese.

Provide a technical evaluation of the appropriateness of the placement and design criteria for wells used to monitor potential contaminant migration from these waste management units. Include a list of the analytes which are currently monitored for and the latest monitoring data. Reference to the facility wide hydrologic evaluation conducted in July of 1993 may be used to provide some or all of the requested information.

25) Process Hardware Storage Area, SWMU KMCC-001:

No further action is required at this time.

26) Trash Storage Area:

No further action is required at this time.

27) PCB Storage Area, SWMU KMCC-003:

No further action is required at this time.

28) Hazardous Waste Storage Area, SWMU KMCC-004

Provide documentation of the remediation of hydrocarbon contaminated soil observed during Kleinfelder's site reconnaissance. This documentation should include confirmatory sampling and analysis using EPA Method 8015 modified for petroleum hydrocarbons.

29) Solid Waste Dumpsters, SWMU KMCC-008

No further action is required at this time.

30) Ammonium Perchlorate Area - Pad 35, SWMU KMCC-0017:

No further action is required at this time.

31) Drum Crushing and Recycling Area, SWMU KMCC-018:

Provide documentation of the remediation of minor soil staining in this area.

Provide information regarding improvements in area operating procedures for the removal of residual materials from drums prior to storage and crushing so as to minimize or eliminate spillage of waste materials to the ground.

32) Ground Water Remediation Unit, SWMU KMCC-019:

Provide information regarding improvements in area operating procedures for the purpose of minimizing or eliminating spillage of waste materials to the ground. Document any modifications made to the remediation unit for this purpose.

33) Sodium Perchlorate Platinum By-Product filter, SWMU KMCC-021

KMCC will provide a written statement describing the repair of floor cracks in this unit. Beyond this, no further action is required at this time.

Susan Crowley
Kerr-McGee Chemical Corporation
August 16, 1994
Page 8

34) Former Manganese Tailings Area, SWMU KMCC-022:

Reference item 24 above.

35) Truck Emptying/Dump Site, SWMU KMCC-025:

Provide a sampling plan for assessment/characterization of "unknown" waste materials disposed in this area.

36-38) Former Satellite Accumulation Points:

No further action is required at this time.

39) Satellite Accumulation Point - AP Maintenance Shop, SWMU KMCC-29:

Provide documentation of remediation of minor spill noted in the Phase I Report. This should include information regarding the association between the spill and the 1,1,1-trichloroethane stored in this area.

Provide information regarding improvements in area operating procedures for the purpose of minimizing or eliminating spillage of waste materials.

40) PCB Transformer Spill:

No further action is required at this time.

41) Unit 1 Tenant Stains:

Provide documentation of remediation of hydrocarbon impacted soil in this area.

42) Unit 2 Salt Redler:

No further action is required at this time.

43) Unit 4 and 5 Basements:

Provide a discussion concerning the feasibility of characterization and removal and/or stabilization of residual chromium contamination in the unsaturated zone beneath these units.

Provide, as a stand alone document, a full re-evaluation of the effectiveness of the chromium recovery system. Included should be such items as aquifer properties and characteristics, ground water flow patterns, capture and

reinjection zones, influent concentration trends, etc. A discussion of the transport and fate of chromium within the shallow aquifer and within the vadose zone beneath units 4 & 5 should also be included in this document.

44) Unit 6 Basement:

Provide a technically based discussion of the potential impacts to ground water from manganese bearing solutions and from residual high/low pH contamination in the vadose zone which may have resulted from leakage of the basement of this unit. A discussion is required of the engineering features, leak detection system(s), and periodic maintenance of the basement liner and any other appropriate method of addressing the issue of potential on-going releases. Ground water monitoring data should be used to document impacts (or lack thereof) from residual contamination beneath the unit.

45) Diesel Storage Tank:

Within 180 days of receipt of this letter of understanding, KMCC will provide the Division with a work plan designed to address visible and potential hydrocarbon contamination of soil and/or ground water in this area. If KMCC decides to renovate the tank, integrity testing (including some form of non-destructive testing of the tank bottom) will be performed. If KMCC decides to discontinue tank use, the tank will be removed and the area assessed for contamination.

46) Former Old Main Cooling Tower and Recirculation Lines:

No further action is required at this time.

47) Leach Plant Area Manganese Ore Piles:

Provide data/documentation from industrial hygiene studies to on-site workers and off-site residents from exposure to manganese ore and or manganese compounds.

48) Leach Plant Analyte Tanks:

Provide a technical evaluation of the appropriateness of the placement and design criteria for wells used to monitor potential manganese and pH contaminant migration from this area. Include a list of the analytes which are currently monitored for and the latest data. Reference to the facility wide hydrologic evaluation conducted in July of 1993 may be used to provide some or all of the requested information.

- 49) Leach Plant Area Sulfuric Acid Storage Tank:

Reference item 48 above.

- 50) Leach Plant Area Leach Tanks:

Reference item 48 above.

- 51) Leach Plant Area Transfer Lines:

Reference item 48 above.

- 52) AP plant Area Screening Building, Dryer Building and Associated Sump:

Provide documentation of remediation of "minor white staining" from ammonium perchlorate wash downs and modifications to area procedures to mitigate or eliminate further releases of waste materials.

- 53) AP Plant Area Tank Farm:

Provide documentation of remediation of small visible staining and repair or replacement of the concrete pad.

Provide a discussion of procedural changes intended to mitigate or eliminate further releases of waste materials.

- 54) AP Plant Area Change House/Laboratory Septic Tank:

Provide a work plan for assessment/characterization of potential contamination related to waste chemical disposal via the laboratory septic system.

- 55) Area Affected by July 1990 Fire:

Provide documentation of the remediation of the impacted area including specific data (e.g. waste volume, etc.) regarding material disposal at U.S. Ecology.

- 56) AP Plant Area Old Building D-1 -- Washdown:

Provide a technically based discussion concerning the environmental fate of ammonium perchlorate in site soils (see also the requirements of item # 52 above).

- 57 & 58) AP Plant Area New Building D-1 -- Washdown and AP Plant Transfer Lines to Sodium Chlorate Process:

No further action is required at this time.

59) Storm Sewer System:

Provide documentation of system flow/integrity investigations as part of a technical evaluation concerning the potential for soil and/or ground water contamination resulting from waste disposal and storm water discharges through the storm sewer system.

Provide a technical evaluation of the appropriateness of the placement and design criteria for wells used to monitor potential contaminant migration from the storm sewer system. Include a list of the analytes which are currently monitored for and the latest data. Reference to the facility wide hydrologic evaluation conducted in July of 1993 may be used to provide some or all of the requested information.

60) Acid Drain System:

Provide a technically based evaluation of the potential for soil and/or ground water contamination resulting from historic waste disposal through the acid drain system.

Provide a technical evaluation of the appropriateness of the placement and design criteria for wells used to monitor potential contaminant migration from the acid system. Include a list of the analytes which are currently monitored for and the latest data. Reference to the facility wide hydrologic evaluation conducted in July of 1993 may be used to provide some or all of the requested information.

61) Old Sodium Chlorate Plant Decommissioning:

No further action is required at this time.

62) State Industries, Inc. Site, Including Impoundments and Catch Basin:

Provide a work plan for the complete assessment/characterization of the State Industries surface impoundments. Analytes should be selected based upon known or suspected waste streams disposed to these ponds and should include TCLP metals, volatile organic compounds (if applicable), TPH (if applicable), and pH.

63) J.B. Kelley, Inc. Trucking Site:

Provide closure and/or remediation documentation for the underground storage tanks formerly located at this site. Include data from the ground water monitor wells installed by KMCC to evaluate potential hydrocarbon contamination.

Provide an assessment plan to characterize areas potentially impacted by truck washing rinsate and liquids and sludges present in the concrete vaults at this site.

64) Koch Materials Company Site:

Provide documentation of KMCC's efforts, in conjunction with those of Koch Materials Co., to remediate hydrocarbon contamination and to develop operating procedures and/or containment structures to prevent further releases of petroleum hydrocarbons and other wastes.

65) Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company, and Ebony Construction Sites:

Determine whether soil staining identified in this area is coincident with the staining referred to in item 41 above. If the staining is not coincident with this item, provide documentation of KMCC's efforts to work with these tenants for the purpose of remediating hydrocarbon contamination and developing operating procedures and/or containment structures to prevent further releases of hydrocarbon compounds and other waste materials.

66) Above-Ground Diesel Storage Tank Leased by Flintkote Co.

No further action is required at this time.

67) Delbert Madsen and Estate of Delbert Madsen Site:

Provide documentation of KMCC's efforts to work with the tenant to further assess and characterize contamination which may be present at this location.

68) Southern Nevada Auto Parts Site:

Provide documentation of KMCC's efforts to work with the tenant to further assess and characterize contamination which may be present at this location.

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69) Dillon Potter Site:

No further action is required at this time.

The tasks outlined above will be incorporated (as an attachment) into the forthcoming Phase II Consent Agreement to be negotiated with KMCC. That document will provide the specific framework wherein these tasks shall be accomplished.

Should you have any questions or comments regarding any of the items, please contact either Allen Biaggi or myself at (702) 687-4670, extensions 3021 and 3017, respectively.

Sincerely,



Edward L. Basham
Environmental Management Specialist
Remediation Branch
Bureau of Corrective Actions

ELB:kmf

cc: Russell Jones, Staff Environmental Engineer, Kerr-McGee Chemical Corporation, Kerr-McGee Center, P.O. Box 25861, Oklahoma City, Oklahoma 73125

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APPENDIX B

**Boring Logs and Monitoring Well
Completion Diagrams**



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB1-1

CLIENT: Kerr McGee Chemical Corporation

GEOLOGIST: DJ Poehis

TOTAL DEPTH: 10 Feet

JOB NUMBER: 4020-004-250

DATE DRILLED: 4/9/97

DRILLING METHOD: HSA

LOCATION: Henderson, NV

DRILLING COMPANY: Gregg Drilling & Testing

SAMPLE METHOD: SS

BORING LOCATION: Trade Effluent Settling Ponds

NORTHING: 19471.568

EASTING: 26316.777

FEET	SAMPLES	SAMPLE NUMBER	TIME	PIU (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
0					7					
1		SB1-1-1	1705	0	15	70	<u>SILTY SAND</u> -grayish black with white powdery inclusions, very poorly graded, fine-grain sand, mildly reacts with HCL, no odor.			
2					15					
3					5					
4					7					
5		SB1-1-2	1710	0	10	60	<u>SILTY SAND</u> -very poorly graded, 85% fine grain sand, trace gravel to 2cm, dry, non-consolidated, no staining, no odor.	SM		5
6					6					
7					5					
8					5		Same as above - no staining, no odor			
9		SB1-1-10	1715	0	5	80				10
10			1720				Soil boring terminated by field geologist at 10 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with hydrated bentonite chips.			

SAMPLER TYPE

BORING METHOD

SS - SPLIT SPOON
 ST - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB1-3

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Trade Effluent Settling Ponds

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 20241.750

TOTAL DEPTH: 10 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 26555.432

DEPTH feet	SAMPLE NUMBER	TIME	PTD (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
6				6					
9	SB1-3-1	1750	C	9	100	GRAVELLY SILT-light brown, dry, soft, fine grain gravel < 8%. non-consolidated, no staining, no odor.	ML		
12				12					
17	SB1-3-2	1755	C	17	90	SILTY SAND-moderate brown, dry, loose, very fine to medium grain sand (60%), no staining, no odor.	SM		5
20				20					
17				17					
18	SB1-3-3	1800	C	18	80	SILTY SAND-moderate brown, dry, loose, very fine to medium grain sand (60%), trace fine grain gravel, subrounded, no staining, no odor.			10
18:10						Soil boring terminated by field geologist at 10 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with hydrated bentonite chips.			

SAMPLER TYPE

SS - SPIT SPOON
 ST - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB1-5

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Trade Effluent Settling Ponds

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/10/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 20733.155

TOTAL DEPTH: 10 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 27193.819

DEPTH feet	SAMPLES	SAMPLE NUMBER	TIME	PTD (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
0					7					
12		SS1-5-1 0943		0	12	75	<u>SILT</u> -dark blackish gray, dry, parts well indurated, non plastic, musty odor.	ML		
17					17					
14					14		<u>SILT</u> -dark blackish gray, dry, parts well indurated, non plastic, musty odor, small inclusions of white powder material, HCL reactive color change yellow to blue, non-cohesive, slight musty odor.			5
20		SS1-5-2 0949		0	20	65	<u>SILTY SAND</u> -medium to light brown, obseerved from soil cuttings.	SM		
7					7					
7					7		<u>SILTY SAND / SANDY SILT</u> -light brown, dry, dense, very poorly graded fine grain sand, non-consolidated, no staining, no odor.			10
23		SS1-5-10 10955		0	23	50				
1000							Soil boring terminated by field geologist at 10 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with hydrated bentonite chips.			

SAMPLER TYPE

BORING METHOD

SS - SPLIT SPOON
 ST - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB1-7

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Trade Effluent Settling Ponds

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/10/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 20549.135

TOTAL DEPTH: 10 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 26416.037

DEPTH feet	SAMPLER	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0					7		<u>SILT</u> -blackish gray with white inclusions, no staining, no odor.	ML		0
1		SB1-7-1	1120	0	8	60	<u>SILTY SAND</u> -medium brown, dry, some gravel, very fine to fine grain sand, no staining, no odor.	SM		1
2					7					2
3					6					3
4					9		<u>SILT</u> -blackish gray with white inclusions.	ML		4
5		SB1-7-2	1121	0	10	70	<u>SILTY SAND</u> -medium brown, dry, some gravel, very fine to fine grain sand, no staining, no odor.	SM		5
6										6
7					16		<u>GRAVELLY SILTY SAND</u> -light brown, dry, dense, poorly graded, very fine grain sand, subangular gravel, no staining, no odor.			7
8					17					8
9					15	70				9
10		SB1-7-10	1126	0			Soil boring terminated by field geologist at 10 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with hydrated bentonite chips.			10

SAMPLER TYPE

SS - SEPTER SPOON
 ST - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB2-2

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P3 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18447.975

TOTAL DEPTH: 2.33 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27633.717

DEPTH feet	SAMPLER	SAMPLE NUMBER	TIME	PIID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB2-09	1636	NA	NA	NA	<u>SILTY SAND</u> - medium brown, dry, moderately loose, fine to medium grain, no staining, earthy odor.	SM		1
1		SB2-01	1646	NA	NA	NA	<u>ORGANIC SILT</u> - dark brown, very dense, dry, abundant organics, no staining, musty odor.	OL		2
2.33							Refusal at 2.33 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
6										6
8										8
10										10

SAMPLER TYPE

SP - SPINNING SPOON
 SS - PRESSURE SHELVY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P3 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18390.012

BORING NUMBER: SB2-4

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27619.994

DEPTH feet	SAMPLE'S	SAMPLE NUMBER	TIME	PH (ppm)	FLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
0		SB2-43	1609	NA	NA	NA	<u>SILTY SAND</u> -medium brown, dry, moderately loose, no staining, earthy odor.	SM		0
1										1
2							<u>ORGANIC SILT</u> -dark brown, dry, very dense, abundant organics, non plastic, no staining, musty odor.	OL		2
3		SB2-40	1700	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - SOFT SPOON
 PS - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB2-6

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P3 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18374.451

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27559.447

DEPTH feet	SAMPLES TYPE	SAMPLE NUMBER	TIME	PIID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB2-60	1731	NA	NA	NA	<u>SILTY SAND</u> - tannish brown, moderately loose, earthy odor.	SM		0
1										1
2							<u>ORGANIC SILT</u> - dark brown, dry, very dense, abundant organics, non plastic, siltstone gravel or rock fragments, some silty sand stringers, no staining, musty odor.	OL		2
3		SB2-60	1753	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P3 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18443.946

BORING NUMBER: SB2-8

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27581.796

DEPTH feet	SAMPLES	SAMPLE NUMBER	TIME	PIU (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB2-88	1737	NA	NA	NA	<u>SILTY SAND</u> -medium brown, dry, moderately loose, medium grain, some siltstone gravel or rock fragments, earthy odor.	SM		0
1		SB2-88- DUP	1813	NA	NA	NA	<u>ORGANIC SILT</u> -dark brown, dry, very dense, organics, some sand and silt stringers, no staining, musty odor.	OL		1
2										2
3		SB2-88	1827	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB2-10

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P2 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/10/97
 DRILLING COMPANY: NA
 NORTHING: 18459.027

TOTAL DEPTH: 1.7 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27805.678

Feet	SAMPLER	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
0.0 - 0.5		SB2-10S 10904		NA	NA	NA	SANDY SILT - pinkish tan, dry, very dense, medium to coarse grain sand, trace gravels, gravels up to 20 mm.	M		0.0 - 0.5
0.5 - 1.0		SB2-10S 10924		NA	NA	NA	Same as above.			0.5 - 1.0
1.0 - 1.7							Refusal at 1.7 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			1.0 - 1.7

SAMPLER TYPE
 SS - SP... SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD
 HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB2-12

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Old P2 Pond

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/10/97
 DRILLING COMPANY: NA
 NORTHING: 18447.267

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 27746.989

DEPTH feet	SAMPLES	SAMPLE NUMBER	TIME	PIID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB2-12S	0943	NA	NA	NA	<u>SANDY SILT</u> -medium brown, upper siltstone layer approximately 3 inches thick, well stratified and cemented with calcium carbonate. augering difficult from 0.75 to 1.0 ft. bgs. no staining, earthy odor.	ML		1
1										
2							<u>SILTY SAND</u> -dark brown, dry, fine to medium grain, some siltstone gravel or rocks, no staining, earthy odor.	SM		2
3		SB2-12B	1107	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. No groundwater encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUO DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB4-1

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Truck Unloading Area

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/8/97
 DRILLING COMPANY: NA
 NORTHING: 18118.238

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 26577.620

DEPTH feet	SAMPLES	SAMPLE NUMBER	TIME	PHI (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB4-1B	1500	NA	NA	NA	<u>SILTY SAND</u> -tan, dry, loose, fine to medium grain, no staining, earthy odor.	SM		0
1										1
2							<u>SANDY GRAVEL</u> -tan, dry, loose, subangular to subrounded, no staining, earthy odor.	GW		2
3		SB4-1C	1618	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Goundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - 2" SPOON
 ST - PRESSURE SHELVY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Truck Unloading Area

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/8/97
 DRILLING COMPANY: NA
 NORTHING: 18055.318

BORING NUMBER: SB4-3

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 26644.253

DEPTH feet	SAMPLER	SAMPLE NUMBER	TIME	PIU (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0		SB4-33	1730	NA	NA	NA	<u>SILTY SAND</u> -tan, dry, loose, fine to medium grain, no staining, earthy odor.	SM		0
1										1
2							<u>SANDY GRAVEL</u> -tan, dry, loose, subangular to subrounded, no odor.	GW		2
3		SB4-32	1730	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SS - SPLIT SPOON
 PS - PRESSES SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB4-5

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Truck Unloading Area

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18089.653

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: H4
 EASTING: 26500.756

DEPTH	SAMPLER	SAMPLE NUMBER	TIME	PIV (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0	↓	SB4-55	0637	NA	NA	NA	SILTY SAND-brownish tan, dry, moderately loose, medium grain, little gravel (G=5%, S=80%, Silt=15%), earthy odor.	SM		1
3	↓	SB4-50	1433	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. Goundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3

SAMPLER TYPE
 SS - SPLIT SPOON HA - HAND SAMPLER
 ST - STRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD
 HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Truck Unloading Area

GEOLOGIST: D. Dirkin
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: NA
 NORTHING: 18055.189

BORING NUMBER: SB4-7

TOTAL DEPTH: 3 Feet
 DRILLING METHOD: Hand Auger
 SAMPLE METHOD: HA
 EASTING: 26450.990

DEPTH Level	SAMPLES	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0										0
1		SB4-7E	0644	NA	NA	NA	GRAVELLY SAND-tannish brown, dry, difficult augering, medium to coarse grain, subrounded gravels up to 50 mm, poorly sorted, earthy odor.	Sp		1
2										2
3		SB4-7D	1001	NA	NA	NA	Soil boring terminated by field geologist at 3 feet bgs. No groundwater encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with bentonite chips.			3
4										4
5										5
6										6
7										7
8										8
9										9
10										10

SAMPLER TYPE

SSS - SPLIT SPOON
 PPS - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB5-1

CLIENT: Kerr McGee Chemical Corporation

GEOLOGIST: DJ Poehls

TOTAL DEPTH: 10 Feet

JOB NUMBER: 4020-004-250

DATE DRILLED: 4/9/97

DRILLING METHOD: HSA

LOCATION: Henderson, NV

DRILLING COMPANY: Gregg Drilling & Testing

SAMPLE METHOD: SS

BORING LOCATION: Diesel Fuel Storage Tank Area NORTHING: 18299.536

EASTING: 27602.715

feet	SAMPLES	SAMPLE NUMBER	TIME	PIU (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
17					17		<u>SANDY SILT</u> -reddish brown, dry, moderately dense, trace angular gravel, non-consolidated, no staining, no odor.	ML		
		SB5-1-1	1355	15.2	24	70				
					15					
7					7		<u>SILTY SAND</u> -reddish brown, dry, very loose, no gravel, no staining, slight unknown odor.			
		SB5-1-3			7	50				
					5					
8					8		Same as above-trace medium grain gravel, dry, no staining, ammonia odor.			
		SB5-1-5	1310	6.7	10	50				
					9					
9					9		<u>SILTY SAND</u> -dry, thin layer with abundant angular gravel, no staining, no odor.	SM		
		SB5-1-7			10	40				
					12					
6					6		<u>SILTY SAND</u> -reddish brown, dry, moderately loose, very well graded sand, very fine to very coarse grain, non-consolidated, no staining, no odor.			
		SB5-1-10	1320	4.2	12	20				
					12					
			1330				Soil boring terminated by field geologist at 10 feet bgs.			
							Groundwater not encountered.			
							Soil cuttings contained in a DOT approved 55-gallon drum.			
							Soil boring backfilled with hydrated bentonite chips.			

SAMPLER TYPE

SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB5-3

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Diesel Fuel Storage Tank Area

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 18241.954

TOTAL DEPTH: 10 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 27659.279

DEPTH feet	SAMPLER TYPE	SAMPLE NUMBER	TIME	PIID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS	GRAPHIC LOG	DEPTH feet
0					10		<u>GRAVELLY SILTY SAND</u> -upper soil is medium brown and lower soil is grayish black, dry, loose, poorly to moderately well graded, subangular gravel, possible staining, ammonia odor.			
1		SB5-3-1	1455	25.0	13	60				
2					14					
3					11		Same as above-no gray soils-soil is medium brown, no staining, slight ammonia odor.	SM		
4		SB5-3-3			20	70				
5					13					
6					10		<u>GRAVELLY SILTY SAND</u> -poorly graded fine grain gravel, poorly graded fine grain sand, dry, medium brown, no staining, faint musty odor.			5
7		SB5-3-5	1510	27.4	10	40				
8					10					
9					11		<u>GRAVELLY SANDY SILT</u> -light brown, dry, very poorly graded fine grain sand, no staining, faint musty odor.	ML		
10		SB5-3-7			11					
11					17					
12					12		Same as above.			
13					12					
14		SB5-3-10	1525	14.0	14		Soil boring terminated by field geologist at 10 feet bgs. Groundwater not encountered. Soil cuttings contained in a DOT approved 55-gallon drum. Soil boring backfilled with hydrated bentonite chips.			10
15			1530							
16										

SAMPLER TYPE

SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: SB6-2

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: AP Plant Area

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/9/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 18759.842

TOTAL DEPTH: 15 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 26516.977

DEPTH feet	SAMPLER NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0									0
4				4	60	<u>GRAVELLY SILTY SAND</u> -light reddish brown, dry, very loose, subangular gravel up to 20 mm, no staining, no odor.			
				4					
				3					
4				4		Same as above - less gravel			
				5					
				8	50				
7				7		<u>SILTY SAND</u> -dark brown sand, volcanic rock fragments, medium grain, earthy odor.	SM		
				5	<10				
				7					
8				8		<u>GRAVELLY SILTY SAND</u> -reddish brown mottle with black soil, volcanic gravel, fine grain, possible staining, no odor.			
				14	70				
				32					
30				30		<u>SILTY SAND</u> -reddish brown (no black soil), dry, loose, trace fine grain gravel, no staining, no odor.			
				32	60				
				35					
30				30		<u>SANDY SILT</u> -dry, loose, no gravel, very fine grain sand (approx. 40%), no staining, no odor.	ML		
				28					

SB6-2-15 1213 0 32 50
 SAMPLER TYPE
 SS - SPLIT SPOON HA - HAND SAMPLER
 ST - PRESSED SHELBY TUBE CC - CONTINUOUS CORE

BORING METHOD
 HSA - HOLLOW STEM AUGER HA - HAND AUGER
 CFA - CONTINUOUS FLIGHT AUGER MD - MUD DRILLING



SUBSURFACE EXPLORATION LOG

BORING NUMBER: M97

CLIENT: Kerr McGee Chemical Corporation
 JOB NUMBER: 4020-004-250
 LOCATION: Henderson, NV
 BORING LOCATION: Hardesty Chemical Site

GEOLOGIST: DJ Poehls
 DATE DRILLED: 4/8/97
 DRILLING COMPANY: Gregg Drilling & Testing
 NORTHING: 17793.352

TOTAL DEPTH: 50 Feet
 DRILLING METHOD: HSA
 SAMPLE METHOD: SS
 EASTING: 27491.925

DEPTH feet	SAMPLES	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY %	GEOLOGIC DESCRIPTION	SOIL CLASS.	GRAPHIC LOG	DEPTH feet
0										0
5		NA			12 8	85	<u>GRAVELLY SILT</u> -well rounded gravel (up to 2cm), moderately loose, non plastic, dry, no structure, medium orangish brown, no stain, no odor.	ML		5
10					10		<u>GRAVELLY SILTY SAND</u> -alternating with silty sand, very poorly graded, gravel rounded to subrounded, loose, dry, medium brown, no stain, no odor.	SM		10
10		NA	1136	NA	12 21 27	80	Same as above with 6 inch zone of sandy gravel - well graded angular gravel to 3cm - dark gray, dry, moderately dense.	Gw		10
15					10 12 16	70	<u>SILTY SAND</u> -trace medium grain gravel, increasing silt (30%), dry, medium brown, no stain, earthy odor.	SM		15
20					24 14 10	40	<u>CALICHE</u> <u>GRAVELLY SILT</u> -little sand, soft caliche nodules, carbonate gravel, angular to 3cm, very well graded, dry, light reddish brown.	Caliche		20
25		NA	1200	NA	5 14 15	0	<u>GRAVELLY SILTY</u> -possibly very fine grain sand, little very fine grain gravel, subangular, HCL reactive, dry, light brown.	ML		25
30		NA	1215	NA	16 50/5"	10	<u>SILT</u> -compacted, stratified, HCL reactive, dry, firm to very firm.			30
35		NA	1220	NA	5 5 5	40	<u>CLAY - SILTY CLAY</u> -moist, no gravel, very slightly plastic, soft, orangish brown, no stain, no odor.	CL		35
40		NA	1235		5 5	100				40

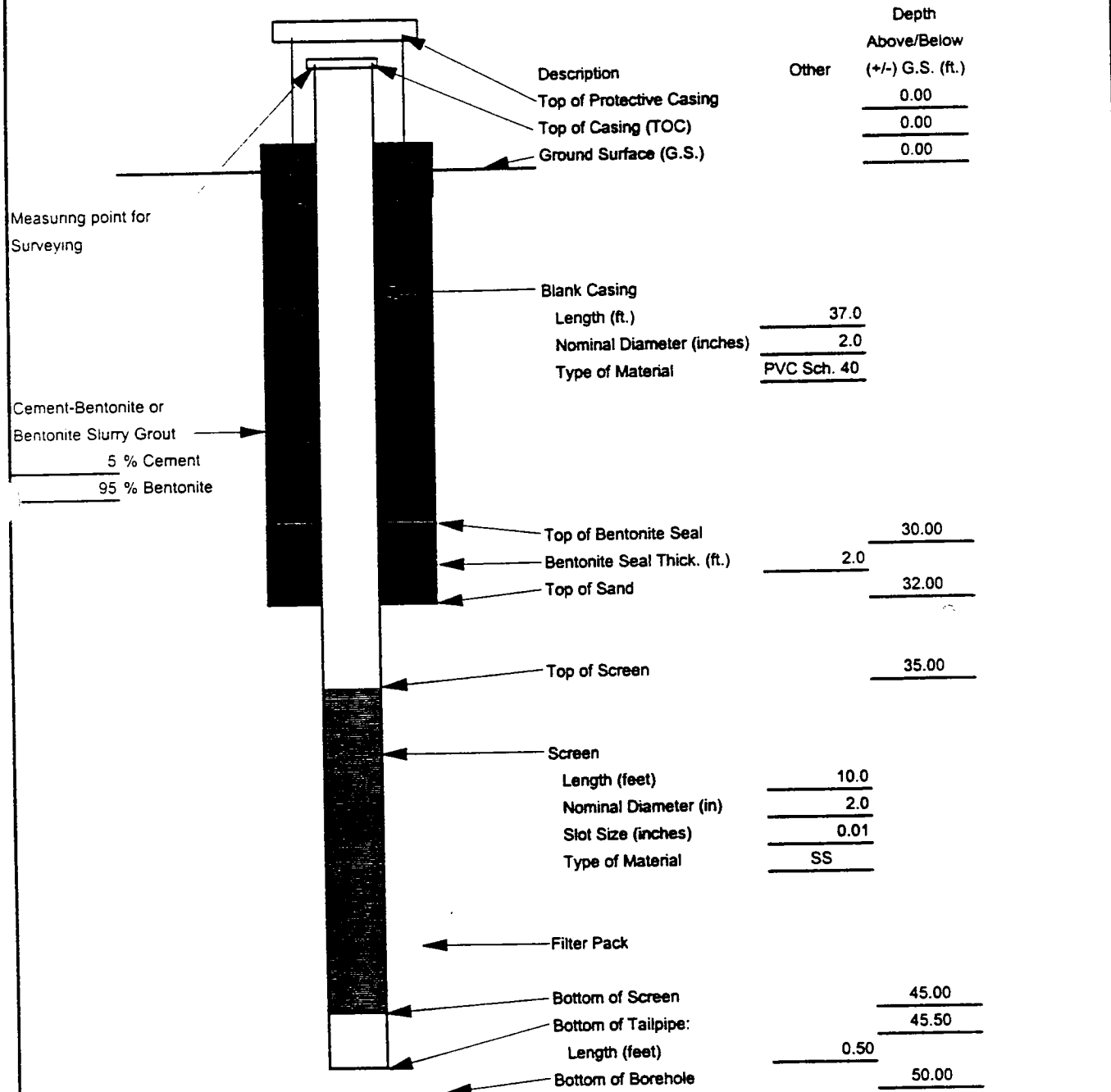
SAMPLER TYPE 9

BORING METHOD

SS - SPINNING SPOON
 ST - PRESSED SHELBY TUBE
 HA - HAND SAMPLER
 CC - CONTINUOUS CORE

HSA - HOLLOW STEM AUGER
 CFA - CONTINUOUS FLIGHT AUGER
 HA - HAND AUGER
 MD - MUD DRILLING

Project No. 4020-004-250 Client: Kerr McGee Chemical Site: Hendersen, NV Well No. **M97**
 Well Loc. Hardesty Chemical Date Inst. 8-Apr-97
 Contractor: Gregg Drilling & Testing Method: Hollow-Stem Auger Well No. **M97**



Water Level Summary (from Top of Casing)

During	Ft.	Date
During Drilling	42	4/8/97
Before Development	39.28	4/8/97
After Development		

APPENDIX C

Laboratory Analytical Results



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

TOTAL PETROLEUM HYDROCARBON ORGANICS

LOG-IN NUMBER

L9133

QUOTATION NUMBER

Q707146-24TAT

DOCUMENT FILE NUMBER

0408171



April 11, 1997

Ms. Susan M. Crowley
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

RE: Log-in No. L9133
Quotation No. Q707146-24TAT
Document File No. 0408171

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 8 April 1997.

The temperature of the cooler upon receipt was 4°C. All sample containers coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Kami Troyer at (702) 361-2000. If you are unable to contact the laboratory, please call Mary [redacted] at (702) 361-2000.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Kami K. Troyer
Client Services Representative

cc: Client Services
Document Control

**CASE NARRATIVE
ORGANIC ANALYSES**

Analytical Method 8015M

The associated samples were analyzed in two analytical batches. All initial and continuing calibrations met criteria. The recovery of surrogate N-Octacosane was within QC limits.

Analytical Batch 040797-8015-L-2

NOTE: Client sample S9-1S (L9133-1) was the native sample used for the Matrix Spike (47239MS) and Matrix Spike Duplicate (47239MSD).

X Qualifier- Diesel Range Organics was flagged with the "X" Qualifier in client samples S9-1S (L9133-1) and S8-1S (L9133-2) to indicate that these samples were quantified for Diesel Range Organics but the patterns in these samples did not match our Diesel Range Organics calibration patterns. The results for Diesel Range Organics were based on the peaks which were within the Retention Time Marker of Diesel Range Organics. These samples also contained heavier hydrocarbons.

The samples were extracted within the required holding time on April 8, 1997 and analyzed within the required holding time on April 9, 1997. There were no target compounds detected in the Method Blank (47239MB). The recovery of Diesel Range Organics was within QC limits in the 47239MS, 47239MSD, and 47239LCS. The Relative Percent Difference (RPD) between the 47239MS and 47239MSD recoveries was outside of limits due to matrix effect.

Analytical Batch 040797-8015-L-3

NOTE: This analytical batch only contains the result for Motor Oil for client sample S8-1S (L9133-2). Refer to analytical batch 040797-8015-L-2 for the results of Diesel Range Organics and Gasoline Range Organics for client sample S8-1S (L9133-2).

Client sample S8-1S (L9133-2) was extracted within the required holding time on April 8, 1997 and analyzed within the required holding time on April 9, 1997. Refer to analytical batch 040797-8015-L-2 for the associated QC (47239MB, 47239MS, 47239MSD, and 47239LCS) results.

LAS Laboratories, Inc.
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> -- The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. [<i>pesticide/PCB analyses only</i>]
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to surrogates being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
I	<i>Estimated value</i> -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> -- Tentatively identified constituents (TICs) identified based on mass spectral library search.
O	Analyte detected, but Not Quantified, per result from subsequent analysis
P	<i>For CLP Reporting Only</i> -- The percent difference between the concentrations detected on both GC columns was greater than 10%. [<i>pesticide/PCB analyses only</i>]
Q	<i>For CLP Reporting Only</i> -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
R	Unlabeled qualifier
S	Concentration in the % moisture cell is not reported based on a dry weight basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC Summary Form.

**SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY**

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Apr 11 1997, 08:27 am

Login Number: L9133
Account: 171 Kerr-McGee * Henderson, NV
Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9133-1 Temp 4, 8015=Diesel + Fingerprint Location: RFG19-119B Soil 4 S 8015M - TPH	S8-18	08-APR-97 Hold:22-APR-97	08-APR-97	14-APR-97
L9133-2 Temp 4, 8015=Diesel + Fingerprint Location: RFG19-119B Soil 4 S 8015M - TPH	S8-18	08-APR-97 Hold:22-APR-97	08-APR-97	14-APR-97
L9133-3 Location: Water 1 S GC2 Water 1 S TROYER	REPORT TYPE	08-APR-97	08-APR-97	14-APR-97

** changed Due date after faxing data*

Signature: K. Troyer

Date: 4-11-97

JK P1

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 08 1997, 04:14 pm

Login Number: L9133
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9133-1 Temp 4, 8015=Diesel + Fingerprint ✓ Location: RFG01-02C Soil 4 S 8015M - TPH	S9-1S	08-APR-97	08-APR-97	09-APR-97
		Hold:22-APR-97		
L9133-2 Temp 4, 8015=Diesel + Fingerprint ✓ Location: RFG01-02C Soil 4 S 8015M - TPH	S8-1S	08-APR-97	08-APR-97	09-APR-97
		Hold:22-APR-97		
L9133-3 Location: Water 1 S GC2 Water 1 S TROYER	REPORT TYPE	08-APR-97	08-APR-97	09-APR-97

Signature: Paul E. Adgerman
 Date: 4-8-97

5511

69133

CHAIN OF CUSTODY RECORD

ENSR

Client/Project Name

DEERS WILDCHEMICAL

Project Location

DEERS, NY

Project Number: 4020-COA-200

Logbook No.

Sampler: (Print Name) / Mission: David Dier

Field Sampling Method

SOIL - WET (DRI-15M)

Signature

C. ENSR CAMARILLO

Field Sample No./ Identification	Date	Time	Q/A	Q/B	Q/C	Q/D	Q/E	Q/F	Q/G	Q/H	Q/I	Q/J	Q/K	Q/L	Q/M	Q/N	Q/O	Q/P	Q/Q	Q/R	Q/S	Q/T	Q/U	Q/V	Q/W	Q/X	Q/Y	Q/Z	Remarks
59-15	4/18/97	1011	X																										24 HOUR TEST
58-15	4/18/97	1040	X																										24 HOUR TEST

Relinquished by: (Print Name) David Dier

Signature: *David Dier*

Relinquished by: (Print Name)

Signature: *[Signature]*

Received by: (Print Name)

Signature: *[Signature]*

Date: 4/18/97

Time: 1452

Date: 4/18/97

Time: 1535

Analysis Requested

Analysis Laboratory / Destination: LAS



Sample Login
Login Review Checklist

Lot Number L9133

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

<u>SAMPLE SUMMARY REPORT</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Are all samples present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Are all matrices indicated correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Are all analyses logged in for the correct container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Are samples logged in according to LAS batching procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>LOGIN CHAIN OF CUSTODY</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Have all appropriate comments been indicated in the comment section?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>SAMPLE RECEIVING CHECKLIST</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

Neil P. Ackerman 4-8-97
primary review signature date

Karin Troys 4-8-97
secondary review signature date

LAS LABORATORIES, INC.

Sample Receiving Checklist

Client Name: KERR, MCGEE

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt:

temperature of temp. blank upon receipt:

custody seals present

custody seals intact

chain of custody present

blue ice (or equiv.) present

blue ice (or equiv.) frozen

rad survey completed

SAMPLE CONDITION UPON RECEIPT

all bottles labeled

bottle custody seal present

bottle custody seal intact

samples intact

proper container used for sample

sample volume sufficient for analysis

proper pres. indicated on the COC

VOA's contain headspace

are samples bi-phasic (if so, indicate)

MISCELLANEOUS ITEMS

samples with short holding times

samples to subcontract

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date:

sent to the client (date/initials):

Notes: * - contact the appropriate CSR if discrepancy is inimitable to the appropriate CSR (702)361-8146

Job No:

Cooler ID:

L9133

yes no n/a *Comments/Discrepancies

yes no n/a *Comments/Discrepancies

yes no n/a *Comments/Discrepancies

Client's signature upon receipt:

immediately upon receipt

CSR (702)361-8146

LAS Laboratories
SAMPLE SUMMARY REPORT (su02)
Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
REPORT TYPE	L9133-3 L9133-3		Water ✓ Water	GC2 ✓ TROYER ✓
S8-1S ✓	L9133-2		Soil -	8015M - TPH ✓
S9-1S ✓	L9133-1		Soil	8015M - TPH ✓

EPA METHOD 8015M (Total Petroleum Hydrocarbon)

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID: S9-1S	LAS Sample ID: L9133-1
Date Collected: 08-APR-97	Date Received: 08-APR-97
Date Analyzed: 09-APR-97	Analytical Batch ID: 040797-8015-L-2
Date Extracted: 08-APR-97	Analytical Dilution: 1
Matrix: Soil	Preparation Dilution: 0.98
Percent Moisture: N/A	QC Group: 8015M - TPH 47239

SURROGATE	RECOVERY	QC Limits
N-OCTACOSANE	108%	25-162

CONSTITUENT	CAS NO	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER (S)
Diesel Range Organics	TPH	73.	29.	X
Gasoline Range Organics		<29.	29.	
MOTOR OIL		250	29.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: S8-1S	LAS Sample ID: L9133-2
Date Collected: 08-APR-97	Date Received: 08-APR-97
Date Analyzed: 09-APR-97	Analytical Batch ID: 040797-8015-L-2
Date Extracted: 08-APR-97	Analytical Dilution: 1
Matrix: Soil	Preparation Dilution: 0.98
Percent Moisture: 17%	QC Group: 8015M - TPH_47239

PARAMETER	RECOVERY	QC Limits
NONCHLOROSANE	148%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER (S)
Diesel Range Organics	TPH	180	29.	X
Gasoline Range Organics		<29.	29.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: S8-1S	LAS Sample ID: L9133-2
Date Collected: 08-APR-97	Date Received: 08-APR-97
Date Analyzed: 09-APR-97	Analytical Batch ID: 040797-8015-L-3
Date Extracted: 08-APR-97	Analytical Dilution: 4
Matrix: Soil	Preparation Dilution: 0.98
Percent Moisture: N/A	QC Group: TPH 47239

SURROGATE	RECOVERY	CONCENTRATION
N-OCTACOSANE	152%	25.62

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
MOTOR OIL		1500	120	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Method Blank	LAS Sample ID:	47239MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	08-APR-97	Analytical Batch ID:	040797-8015-L-2
Date Extracted:	08-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
Percent Moisture:	N/A		8015M - TPH_47239

SURROGATE	QC Limits
N-OCTACOSANE	25-162

CONSTITUENT	CAS NO	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	30.	30.	
Gasoline Range Organics		30.	30.	
MOTOR OIL		30.	30.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	S9-1S	LAS Sample ID:	47239MS
Date Collected:	08-APR-97	Date Received:	08-APR-97
Date Analyzed:	08-APR-97	Analytical Batch ID:	040797-8015-L-2
Date Extracted:	08-APR-97	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.98
		QC Group:	8015M - TPH_47239

SURROGATE	RECOVERY	QC Limits
N-OCTACOSANE	113%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	430	29.	

LAS LABORATORIES

TESTED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	S9-1S	LAS Sample ID:	47239MSD
Date Collected:	08-APR-97	Date Received:	08-APR-97
Date Analyzed:	09-APR-97	Analytical Batch ID:	040797-8015-L-2
Date Extracted:	08-APR-97	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.98
		QC Group:	8015M - TPH 47239

SURROGATE	RECOVERY	QC Limits
N-OCTACOSANE	160%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	POL mg/kg	DATA
				QUALIFIER(S)
Diesel Range Organics	TPH	590	29.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47239LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	08-APR-97	Analytical Batch ID:	040797-8015-L-2
Date Reported:	08-APR-97	Analytical Dilution:	1
Preparation:	N/A	Preparation Dilution:	1.0
		Group:	8015M - TPH_47239

SURROGATE	REQUEST	QC Limits
N-OCTACOSANE	500	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	500	30.	

LAS LABORATORIES

IX SPIKE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: S9-1S	LAS Sample ID: 47239MS
Date Collected: 08-APR-97	Date Received: 08-APR-97
Date Analyzed: 08-APR-97	Analytical Batch ID: 040797-8015-L-2
Date Extracted: 08-APR-97	Analytical Dilution: 1
	Preparation Dilution: 0.98
Percent Moisture: N/A	QC Group: 8015M - TPH_47239

SUBSTRATE	RECOVERY	QC Limits
N-OCTACOSANE	113%	25-162

Constituent	Spike Added mg/kg	Sample Concentration mg/kg	MS Concentration mg/kg	% Recovery	QC Limits
					% Recovery
Diesel Range Organics	494	72.8	429	72	51-153

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: S9-1S	LAS Sample ID: 47239MSD
Date Collected: 08-APR-97	Date Received: 08-APR-97
Date Analyzed: 09-APR-97	Analytical Batch ID: 040797-8015-L-2
Date Extracted: 08-APR-97	Analytical Dilution: 1
Percent Moisture: N/A	Preparation Dilution: 0.98
	QC Group: 8015M - TPH

SURROGATE	RECOVERY	QC Limits
N-OCTACOSANE	160%	25-162

Constituent	Spk Added	MSB Concentration mg/kg	% Recovery	RPD	QC Limits	
					RPD	% Recovery
Diesel Range Organics		590	105	38*	30	51-153

LAS LABORATORIES

DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47239LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	08 APR-97	Analytical Batch ID:	040797-8015-L-2
Date Extracted:	08 APR-97	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47239

PROGATE	RECOVERY	QC Limits
N-OCTANE	95%	25-162

Constituent	Spike Added mg/kg	LCS Concentration mg/kg	LCS % Recovery	QC Limits
Diesel Range Hydrocarbons	502	499	99	51-153

20180110

20180110

RUN LOGS/EXTRACTION SHEETS

The table content is almost entirely obscured by heavy black redaction marks, making the data illegible.

Analyst	Date	Sample Name	Matrix/ID#	Raw File	Method File	Reported	ReAnalyzed
IA	4/3/97 13:13	CH2CL2		8015140397-L104039701.d01	8015140397a.L.MET	NO	
IA	4/3/97 13:58	RT 0608 36.1		8015140397-L104039701.d02	8015140397a.L.MET	OK	
IA	4/3/97 14:48	RT 0727 58.1		8015140397-L104039701.d03	8015140397a.L.MET	OK	
IA	4/3/97 15:34	1D 0990 04.1		8015140397-L104039701.d04	8015140397a.L.MET	NO	
IA	4/3/97 16:17	2D 0990 04.2		8015140397-L104039701.d05	8015140397a.L.MET	NO	
IA	4/3/97 17:04	3D 0880 04.3		8015140397-L104039701.d06	8015140397a.L.MET	NO	
IA	4/3/97 17:50	4D 0980 04.4		8015140397-L104039701.d07	8015140397a.L.MET	NO	
IA	4/3/97 18:37	5D 0890 04.5		8015140397-L104039701.d08	8015140397a.L.MET	NO	
IA	4/3/97 18:24	D.QCCS.0990.03.1		8015140397-L104039701.d10	8015140397a.L.MET	OK	
IA	4/3/97 20:11	1G 0990 06.1		8015140397-L104039701.d11	8015140397a.L.MET	OK	
IA	4/3/97 20:57	2G 0990 06.2		8015140397-L104039701.d12	8015140397a.L.MET	OK	
IA	4/3/97 21:44	3G 0980 06.3		8015140397-L104039701.d13	8015140397a.L.MET	OK	
IA	4/3/97 22:30	4G 0990 06.4		8015140397-L104039701.d14	8015140397a.L.MET	OK	
IA	4/3/97 23:17	5G 0990 06.5		8015140397-L104039701.d15	8015140397a.L.MET	OK	
IA	4/4/97 0:04	G.QCCS.0990.08.2		8015140397-L104039701.d16	8015140397a.L.MET	NO	
IA	4/4/97 0:50	1.JP5.0860.85.1		8015140397-L104039701.d17	8015140397a.L.MET	NO	
IA	4/4/97 1:37	2.JP5.0860.85.2		8015140397-L104039701.d18	8015140397a.L.MET	NO	
IA	4/4/97 2:24	3.JP5.0860.85.3		8015140397-L104039701.d19	8015140397a.L.MET	NO	
IA	4/4/97 3:11	4.JP5.0860.85.4		8015140397-L104039701.d20	8015140397a.L.MET	NO	
IA	4/4/97 3:58	5.JP5.0860.85.5		8015140397-L104039701.d21	8015140397a.L.MET	OK	
IA	4/4/97 4:45	1.K.0990.07.1		8015140397-L104039701.d22	8015140397a.L.MET	OK	
IA	4/4/97 5:31	2.K.0990.07.2		8015140397-L104039701.d23	8015140397a.L.MET	OK	
IA	4/4/97 6:17	3.K.0990.07.3		8015140397-L104039701.d24	8015140397a.L.MET	OK	
IA	4/4/97 7:04	4.K.0990.07.4		8015140397-L104039701.d25	8015140397a.L.MET	OK	
IA	4/4/97 7:51	5.K.0990.07.5		8015140397-L104039701.d26	8015140397a.L.MET	OK	
IA	4/4/97 10:21	1.D.0990.04.1		8015140397-L104039701.d27	8015140397a.L.MET	NO	
IA	4/4/97 11:16	2.D.0990.04.2		8015140397-L104039701.d28	8015140397a.L.MET	NO	
IA	4/4/97 12:03	3.D.0990.04.3		8015140397-L104039701.d29	8015140397a.L.MET	NO	
IA	4/4/97 12:49	4.D.0990.04.4		8015140397-L104039701.d30	8015140397a.L.MET	NO	
IA	4/4/97 13:35	5.D.0990.04.5		8015140397-L104039701.d31	8015140397a.L.MET	NO	
IA	4/4/97 14:38	2D.0990.04.1		8015140397-L104039701.d32	8015140397a.L.MET	NO	
IA	4/4/97 15:25	3D.0990.04.1		8015140397-L104039701.d33	8015140397a.L.MET	NO	
IA	4/4/97 16:12	4D.0990.04.1		8015140397-L104039701.d34	8015140397a.L.MET	NO	
IA	4/4/97 16:58	1D.0990.04.1		8015140397-L104039701.d35	8015140397a.L.MET	NO	
IA	4/4/97 17:45	5D.0990.04.5		8015140397-L104039701.d36	8015140397a.L.MET	NO	
IA	4/4/97 18:32	D.QCCS.0990.08.1		8015140397-L104039701.d37	8015140397a.L.MET	OK	
IA	4/4/97 18:18	1.JP5.0860.85.1		8015140397-L104039701.d38	8015140397a.L.MET	OK	
IA	4/4/97 20:05	2.JP5.0860.85.2		8015140397-L104039701.d39	8015140397a.L.MET	OK	
IA	4/4/97 20:51	3.JP5.0860.85.3		8015140397-L104039701.d40	8015140397a.L.MET	OK	
IA	4/4/97 21:38	4.JP5.0860.85.4		8015140397-L104039701.d41	8015140397a.L.MET	OK	
IA	4/4/97 22:26	5.JP5.0860.85.5		8015140397-L104039701.d42	8015140397a.L.MET	OK	
IA	4/4/97 23:12	1.MO.0860.94.1		8015140397-L104039701.d43	8015140397a.L.MET	OK	
IA	4/4/97 23:58	2.MO.0860.94.2		8015140397-L104039701.d44	8015140397a.L.MET	OK	
IA	4/5/97 0:45	3.MO.0860.94.3		8015140397-L104039701.d45	8015140397a.L.MET	OK	
IA	4/5/97 1:32	4.MO.0860.94.4		8015140397-L104039701.d46	8015140397a.L.MET	OK	
IA	4/5/97 2:19	5.MO.0860.94.5		8015140397-L104039701.d47	8015140397a.L.MET	OK	
IA	4/5/97 3:05	3D.0990.04.3		8015140397-L104039701.d48	8015140397a.L.MET	NO	
IA	4/5/97 3:52	3D.0990.04.3		8015140397-L104039701.d49	8015140397a.L.MET	NO	
IA	4/5/97 4:38	3G.0990.06.3				NO	

Analyst	Date and Time	Sample Name	Matrix/Dir.	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/5/97 5:25	3G 0990-06-3		80151040397-L104039701.d50	8015140397a-L.MET	OK	
DA	4/5/97 6:12	3JP5 0860-85-3		80151040397-L104039701.d51	8015140397a-L.MET	NO	
DA	4/5/97 6:58	3JP5 0860-85-3		80151040397-L104039701.d52	8015140397a-L.MET	OK	
DA	4/5/97 7:45	3K 0990-07-3		80151040397-L104039701.d53	8015140397a-L.MET	NO	
DA	4/5/97 8:31	3K 0990-07-3		80151040397-L104039701.d54	8015140397a-L.MET	OK	
DA	4/5/97 9:18	3MO 0860-94-3		80151040397-L104039701.d55	8015140397a-L.MET	OK	
DA	4/5/97 10:05	3MO 0860-94-3		80151040397-L104039701.d56	8015140397a-L.MET	NO	
DA	4/5/97 10:52	CH2CL2		80151040397-L104039701.d57	8015140397a-L.MET	NO	
DA	4/5/97 11:38	46965MB		80151040397-L104039701.d58	8015140397a-L.MET	OK	
DA	4/5/97 12:24	46965LCS		80151040397-L104039701.d59	8015140397a-L.MET	OK	
DA	4/5/97 13:11	46965MS		80151040397-L104039701.d60	8015140397a-L.MET	OK	
DA	4/5/97 13:57	46965MSD		80151040397-L104039701.d61	8015140397a-L.MET	OK	
DA	4/5/97 14:44	L9064-4		80151040397-L104039701.d62	8015140397a-L.MET	OK	
DA	4/5/97 15:30	L9064-6		80151040397-L104039701.d63	8015140397a-L.MET	OK	
DA	4/5/97 16:16	L9064-7		80151040397-L104039701.d64	8015140397a-L.MET	OK	
DA	4/5/97 17:03	L9064-9		80151040397-L104039701.d65	8015140397a-L.MET	OK	
DA	4/5/97 17:49	L9064-10		80151040397-L104039701.d66	8015140397a-L.MET	OK	
DA	4/5/97 18:35	L9064-12		80151040397-L104039701.d67	8015140397a-L.MET	OK	
DA	4/5/97 19:22	L9064-14		80151040397-L104039701.d68	8015140397a-L.MET	OK	NEED 1:25
DA	4/5/97 20:08	L9064-15		80151040397-L104039701.d69	8015140397a-L.MET	OK	
DA	4/5/97 20:55	3D 0990-04-3		80151040397-L104039701.d70	8015140397a-L.MET	NO	
DA	4/5/97 21:42	3D 0990-04-3		80151040397-L104039701.d71	8015140397a-L.MET	OK	
DA	4/5/97 22:29	3G 0990-06-3		80151040397-L104039701.d72	8015140397a-L.MET	OK	
DA	4/5/97 23:17	3G 0990-06-3		80151040397-L104039701.d73	8015140397a-L.MET	NO	
DA	4/6/97 0:04	3JP5 0860-85-3		80151040397-L104039701.d74	8015140397a-L.MET	NO	
DA	4/6/97 0:51	3JP5 0860-85-3		80151040397-L104039701.d75	8015140397a-L.MET	OK	
DA	4/6/97 1:37	3K 0990-07-3		80151040397-L104039701.d76	8015140397a-L.MET	OK	
DA	4/6/97 1:24	3K 0990-07-3		80151040397-L104039701.d77	8015140397a-L.MET	NO	
DA	4/6/97 3:11	3MO 0860-94-3		80151040397-L104039701.d78	8015140397a-L.MET	OK	
DA	4/6/97 3:57	3MO 0860-94-3		80151040397-L104039701.d79	8015140397a-L.MET	NO	
DA	4/6/97 4:44	L9064-17		80151040397-L104039701.d80	8015140397a-L.MET	OK	
DA	4/6/97 5:30	L9064-18		80151040397-L104039701.d81	8015140397a-L.MET	OK	
DA	4/6/97 6:16	L9064-33		80151040397-L104039701.d82	8015140397a-L.MET	OK	
DA	4/6/97 7:03	L9064-32		80151040397-L104039701.d83	8015140397a-L.MET	OK	
DA	4/6/97 7:50	CH2CL2		80151040397-L104039701.d84	8015140397a-L.MET	NO	
DA	4/6/97 8:36	46965MB		80151040397-L104039701.d85	8015140397a-L.MET	OK	
DA	4/6/97 9:22	46965LCS		80151040397-L104039701.d86	8015140397a-L.MET	NO	NEED 1:2
DA	4/6/97 10:08	46965LCS DUP		80151040397-L104039701.d87	8015140397a-L.MET	NO	NEED 1:2
DA	4/6/97 10:55	L9064-25		80151040397-L104039701.d88	8015140397a-L.MET	OK	
DA	4/6/97 11:41	3D 0990-04-3		80151040397-L104039701.d89	8015140397a-L.MET	OK	SURRO. OUT
DA	4/6/97 12:28	3D 0990-04-3		80151040397-L104039701.d90	8015140397a-L.MET	NO	
DA	4/6/97 13:15	3G 0990-06-3		80151040397-L104039701.d91	8015140397a-L.MET	OK	
DA	4/6/97 14:01	3G 0990-06-3		80151040397-L104039701.d92	8015140397a-L.MET	NO	
DA	4/6/97 14:47	3JP5 0860-85-3		80151040397-L104039701.d93	8015140397a-L.MET	OK	
DA	4/6/97 15:33	3JP5 0860-85-3		80151040397-L104039701.d94	8015140397a-L.MET	NO	
DA	4/6/97 16:20	3K 0990-07-3		80151040397-L104039701.d95	8015140397a-L.MET	NO	
DA	4/6/97 17:06	3K 0990-07-3		80151040397-L104039701.d96	8015140397a-L.MET	OK	
DA	4/6/97 17:53	3MO 0860-94-3		80151040397-L104039701.d97	8015140397a-L.MET	OK	
DA	4/6/97 18:39	3MO 0860-94-3		80151040397-L104039701.d98	8015140397a-L.MET	NO	

Analyst	Date en	Sample Name	Matrix	Raw Data	Method File	Reported	ReAnalyzed
IA	4/7/97 12:24	3D 0990-04-3	Oil	80151040397.L0407.d01	80151040397.L.MET	NO	
IA	4/7/97 14:15	3D 0990-04-3	Oil	80151040397.L0407.d02	80151040397.L.MET	OK	
IA	4/7/97 15:01	3G 0990-06-3	Oil	80151040397.L0407.d03	80151040397.L.MET	OK	
IA	4/7/97 15:47	3K 0990-07-3	Oil	80151040397.L0407.d04	80151040397.L.MET	OK	
IA	4/7/97 16:34	3K 0990-07-3	Oil	80151040397.L0407.d05	80151040397.L.MET	NO	
IA	4/7/97 17:21	3MO 0860-94-3	Oil	80151040397.L0407.d06	80151040397.L.MET	OK	
IA	4/7/97 18:07	3MO 0860-94-3	Oil	80151040397.L0407.d07	80151040397.L.MET	NO	
IA	4/7/97 18:53	CH2CL2	Oil	80151040397.L0407.d08	80151040397.L.MET	NO	
IA	4/7/97 19:40	L9064-14 1:25	Oil	80151040397.L0407.d09	80151040397.L.MET	NO	
IA	4/7/97 20:26	L9064-14 1:50	Oil	80151040397.L0407.d10	80151040397.L.MET	OK	
IA	4/7/97 21:13	46968LCS 1:2	Oil	80151040397.L0407.d11	80151040397.L.MET	OK	
IA	4/7/97 21:59	46968LCS DUP 1:2	Oil	80151040397.L0407.d12	80151040397.L.MET	OK	
IA	4/7/97 22:45	3D 0990-04-3	Oil	80151040397.L0407.d13	80151040397.L.MET	OK	
IA	4/7/97 23:32	3D 0990-04-3	Oil	80151040397.L0407.d14	80151040397.L.MET	NO	
IA	4/8/97 0:19	3G 0990-06-3	Oil	80151040397.L0407.d15	80151040397.L.MET	OK	
IA	4/8/97 1:05	3G 0990-06-3	Oil	80151040397.L0407.d16	80151040397.L.MET	NO	
IA	4/8/97 1:52	3K 0990-07-3	Oil	80151040397.L0407.d17	80151040397.L.MET	OK	
IA	4/8/97 2:38	3K 0990-07-3	Oil	80151040397.L0407.d18	80151040397.L.MET	NO	
IA	4/8/97 3:25	3MO 0860-94-3	Oil	80151040397.L0407.d19	80151040397.L.MET	OK	
IA	4/8/97 4:12	3MO 0860-94-3	Oil	80151040397.L0407.d20	80151040397.L.MET	NO	
IA	4/8/97 14:40	3D 0990-04-3	Oil	80151040397.L0407.d21	80151040397.L.MET	OK	
IA	4/8/97 15:35	3D 0990-04-3	Oil	80151040397.L0407.d22	80151040397.L.MET	OK	
IA	4/8/97 16:22	3G 0990-06-3	Oil	80151040397.L0407.d23	80151040397.L.MET	OK	
IA	4/8/97 17:09	3G 0990-06-3	Oil	80151040397.L0407.d24	80151040397.L.MET	NO	
IA	4/8/97 17:56	3MO 0860-94-3	Oil	80151040397.L0407.d25	80151040397.L.MET	OK	
IA	4/8/97 18:42	3MO 0860-94-3	Oil	80151040397.L0407.d26	80151040397.L.MET	NO	
IA	4/8/97 18:28	CH2CL2	Oil	80151040397.L0407.d27	80151040397.L.MET	NO	
IA	4/8/97 21:45	47239MB	Oil	80151040397.L0407.d28	80151040397.L.MET	OK	
IA	4/8/97 22:31	47239LCS	Oil	80151040397.L0407.d29	80151040397.L.MET	OK	
IA	4/8/97 23:17	47239MS	Oil	80151040397.L0407.d30	80151040397.L.MET	OK	
IA	4/8/97 0:04	47239MSD	Oil	80151040397.L0407.d31	80151040397.L.MET	OK	
IA	4/8/97 0:50	L9133-1	Oil	80151040397.L0407.d32	80151040397.L.MET	OK	
IA	4/8/97 1:38	L9133-2	Oil	80151040397.L0407.d33	80151040397.L.MET	OK	
IA	4/8/97 2:24	3D 0990-04-3	Oil	80151040397.L0407.d34	80151040397.L.MET	NO	
IA	4/8/97 3:11	3D 0990-04-3	Oil	80151040397.L0407.d35	80151040397.L.MET	NO	
IA	4/8/97 3:58	3G 0990-06-3	Oil	80151040397.L0407.d36	80151040397.L.MET	NO	
IA	4/8/97 4:45	3G 0990-06-3	Oil	80151040397.L0407.d37	80151040397.L.MET	OK	
IA	4/8/97 5:31	3MO 0860-94-3	Oil	80151040397.L0407.d38	80151040397.L.MET	NO	
IA	4/8/97 6:18	3MO 0860-94-3	Oil	80151040397.L0407.d39	80151040397.L.MET	OK	
IA	4/8/97 7:46	L9133-2 1:4	Oil	80151040397.L0407.d40	80151040397.L.MET	OK	
IA	4/8/97 9:56	3D 0990-04-3	Oil	80151040397.L0407.d41	80151040397.L.MET	OK	
IA	4/8/97 10:41	3G 0990-06-3	Oil	80151040397.L0407.d42	80151040397.L.MET	OK	
IA	4/8/97 11:28	3MO 0860-94-3	Oil	80151040397.L0407.d43	80151040397.L.MET	OK	

NEED 1:4

Diesel Matrix Spike

LAS LABORATORIES

DATA REPORT FORM

8015M - TPH, SW, S, C, E, M

8015M - TPH, SW, S, C, E, M

0-66010
Pan 10

LAL #	GC TYPE	CLIENT ID	DATE	TIME	WATER SAMPLE	SURF ML	MS	PROXY	AMT GIVEN
L9133-1		S9-1S	08-APR-97	10:00	0.10	1.0			
L9133-2		S8-1S	08-APR-97	10:00					
47239MB	MB	Method Blank	08-APR-97	10:00					
47239LCS	LCS	Lab Ctrl Sample	08-APR-97	10:00					
47239MS	MS	S9-1S	08-APR-97	10:00					
47239MSD	MSD	S9-1S	08-APR-97	10:00					
SP4FL0142230	SP4FL0142230	Spike Lot sample	08-APR-97	10:00					

75-80-57

EXTRACTION METHOD: Wrist action shaker

DATE STARTED: 4-7-97

GC BATCH# : 8015M - TPH_47239

SURR ID # : 0859-85-2

MS ID # : 0859-91-3

MA2804: K39420

ANALYST: Ronilly
SPIKE WITNESS: PAK

REVIEWED BY: _____ DATE: _____
EXTRACT COC: RECEIVED BY: _____

NARRATIVE



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

CONDUCTIVITY, pH, METALS, VOLATILE, SEMIVOLATILE AND TOTAL
PETROLEUM HYDROCARBON ORGANICS

LOG-IN NUMBER	<u>L9145</u>
QUOTATION NUMBER	<u>Q707146</u>
DOCUMENT FILE NUMBER	<u>0409171</u>



PROVIDING SOLUTIONS
FOR THE FUTURE

Soil Samples
areas: 6, 4 & 7
M97

COPY



May 7, 1997

Ms. Susan M. Crowley
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

RE: Log-in No. **L9145**
 Quotation No. **Q707146**
 Document File No. **0409171**

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 9 April 1997. The temperature of the cooler upon receipt was 4°C. All sample containers did not coincide with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Laura G. Akenhead at (702) 361-3955, ext 272. If you are unable to contact the client services representative, please call Mary B. Ford, Client Services Manager, at extension 326.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Laura G. Akenhead
Client Services Representative

cc: Client Services
 Document Control

CASE NARRATIVE INORGANIC NON METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 9, 1997. The samples were logged in as L9145 and prepared and analyzed in batches 409-KM, 410KM, 409KM1 and 409KM2 for:

- A. Method 120.1 Conductivity
- B. Method 9045 pH
- C. Method 150.1 pH

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Internal Quality Control

- All Internal Quality Control were within acceptable limits.

Nalini Prabhakar
Prepared By

5/06/97
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 9, 1997. The samples were logged in as L9145 and were prepared and analyzed in batch 409 km2 for total metals. The samples were analyzed by Method 6010 ICP Trace and Method 7471 Mercury. (SDG #L9145S2)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The duplicate sample precision for barium was outside of acceptance limits. All associated samples are flagged with an "**".

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 9, 1997. The samples were logged in as L9145 and were prepared and analyzed in batch 409 km3 for total metals. The samples were analyzed by Method 6010 ICP Trace and Method 7471 Mercury. (SDG #L9145S3)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The duplicate sample precision for barium and arsenic were outside of acceptance limits. All associated samples are flagged with an "***".

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 9, 1997. The samples were logged in as L9145 and were prepared and analyzed in batch 409 km4 for chromium. The samples were analyzed by Method 6010 ICP Metals. (SDG #L9145S4)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The duplicate sample precision for chromium was outside of acceptance limits. All associated samples are flagged with an "**".
- The matrix spike recovery for chromium exceeded the 75-125% acceptance limit, however, the sample concentration is considered significant (i.e., greater than four times the spiking level) relative to the amount spiked into the sample. Therefore, the data are not qualified.

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
WATERS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 9, 1997. The samples were logged in as L9145 and were prepared and analyzed in batch 409 km1 for arsenic. The samples were analyzed by Method 6010 ICP Trace. (SDG #L9145W)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Shellee McGrath
Prepared By

May 7, 1997
Date

CASE NARRATIVE ORGANIC ANALYSES

General Introduction

The Case Narrative associated with the determination of organic analytes is separated into three (3) sections as follows:

SECTION 1

A brief word processed description of each method reported in this package. This is a general summary of the procedures used and quality control measures applied. It is not intended to include client-specific requirements. Results relating to initial calibration criteria and continuing calibration criteria are included in this section. This section will also describe any unusual events or important observations from the processing of the samples for each method. The initials of the reporting specialist compiling the Case Narrative with the date compiled will be at the end of this section.

SECTION 2

2. An *Exception Report* for each method printed from our data base that summarizes the results of all quality control (QC) measures. A separate *Exception Report* is included for each "QC Group" necessary for each method. At LAS, a QC Group is also called a "workgroup", or more descriptively, a "QC Batch". Each *Exception Report* includes:
 - a. A table listing all the samples in the QC Group by LAS Sample ID and Client Sample ID with the date analyzed and Analytical Batch.
 - b. Statement(s) relating to holding times for all samples in the QC Group.
 - c. Statement(s) relating to the Method Blank (MB) for all samples in the QC Group.
 - d. A list of all samples in the QC Group requiring reanalysis for dilution(s) or QC outliers.
 - e. A list of all samples in the QC Group that failed surrogate recovery criteria with the recovery obtained and the Acceptance Limits.
 - f. A list of all QC Samples that failed recovery criteria with the recovery obtained and the Acceptance Limits. The QC Samples are a laboratory control sample (LCS) and a matrix spike (MS)/matrix spike duplicate (MSD) pair. If insufficient sample exists for a MS/MSD pair, a laboratory control sample duplicate (LCSD) is included. Some methods call for a LCS/LCSD pair instead of a MS/MSD and some for MS/MSD and LCS/LCSD pairs.
 - g. A list of all samples in the QC Group that failed internal standard criteria with the integrated areas of the internal standard(s) and their retention times. Note: Applicable to gas chromatography/mass spectrometry GC/MS methods only.

SECTION 3

A table describing all LAS default data qualifiers (flags) used to qualify the data reported on the result forms. Client-specific qualifiers may augment or replace these LAS default qualifiers.

Method 8240 Volatile Organic Compounds

The method identifies and quantifies purgeable organic compounds by gas chromatography/mass spectrometry (GC/MS). Samples are placed in a specially designed purging chamber and an inert gas is bubbled through the sample. Volatile compounds partition to the gas phase. The gas then passes through a trap where organic compounds are retained. After the purging cycle, the trap is heated which releases the retained compounds into a GC/MS. The GC/MS identifies compounds based on the retention time of the compound and a comparison between the mass spectrum of the sample and a standard. Compounds are quantified based on the detector response of a "quant" ion from each compound compared to the response of an ion from an internal standard.

Each time that samples are purged quality control check samples are also analyzed. A MB is purged to verify that the system is not contaminating the samples. A LCS containing some or all target analytes in a matrix which does not interfere with the analytical procedure is also purged. Recoveries of analytes in the LCS are compared to control limits to verify that the analytical systems are operating properly. A MS/MSD pair are also analyzed for each group of twenty samples. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. MS/MSD recoveries can be used to estimate the accuracy and precision of the measurements in a real client matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. Every sample, MB, MS, MSD, and LCS is spiked with surrogates before purging. Recoveries of the surrogates are used to verify performance of the analytical system on a sample by sample basis.

Before samples are analyzed the instrument must be tuned and must have an acceptable five-point initial calibration. Daily, the instrument is tuned and a continuing calibration verification is analyzed to determine if the initial calibration is still valid. Samples are then run in twelve-hour sequences from the time of the tune. Each sample is spiked with internal standards before analysis. The internal standards verify stability of the instrument on a sample by sample basis. A group of samples analyzed within a twelve-hour tune time is called an Analytical Batch. A group of samples associated with an MS/MSD are called a QC Group. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:

All initial calibration criteria were met.

All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8270 Semivolatile Organic Compounds

This method identifies and quantifies semivolatile organic compounds using gas chromatography/mass spectrometry (GC/MS). Samples are extracted with an organic solvent to separate the compounds of interest from the sample matrix. The extract may be subjected to certain cleanup procedures to remove potential interferences. The extract is then concentrated to a final volume, and the compounds in the extract are identified and quantified using GC/MS. The GC/MS identifies compounds based on the retention time of the compound and a comparison between the mass spectrum of the extract and a standard. Compounds are quantified based on the detector response of a "quant" ion from each compound compared to the response of an ion from an internal standard.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted that contains most or all target analytes in a matrix which does not interfere with the analytical procedure. Recoveries of the target analytes in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared each time samples are extracted when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked target analytes can be used to estimate the accuracy and precision of the measurements in a real client matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with surrogate compounds before extraction. Recoveries of the surrogate compounds are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must be tuned and must have an acceptable five-point initial calibration. Daily, the instrument is tuned and a continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in twelve-hour sequences from the time of the tune. Each sample extract is spiked with internal standards before analysis. The internal standards verify stability of the instrument on an extract by extract basis. A group of extracts analyzed within a twelve-hour tune time is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:

All initial calibration criteria were met.

All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8015M Extractable Petroleum Hydrocarbons

This method quantifies extractable petroleum hydrocarbons using gas chromatography (GC) coupled with a flame ionization detector (FID). Target analytes are ranges of hydrocarbons not specific petroleum products. Examples are of target analytes are product range organics, like Diesel Range Organics or carbon number range organics, like C₁₂ to C₂₄ Range Organics. All FID-active substances, or practically speaking, all organic species, eluting within the specified range contribute to the reported value. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then concentrated to a final volume. The hydrocarbon range organics in the extract are quantified using GC/FID. To establish the retention time range for the specific target analyte, n-alkanes are analyzed to define the chromatographic range of interest. A "common baseline" is then drawn between the n-alkane markers. All peaks eluting within the established retention time range are integrated and the areas summed. Products whose constituents closely match the target range are used to generate a five-point calibration. For example diesel fuel standards are used to calibrate for Diesel Range Organics or C₁₂ to C₂₄. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted which contains the same product used for calibration in a matrix which does not interfere with the analytical procedure. Recoveries of the target analyte in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared each time samples are extracted when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked products can be used to estimate the accuracy and precision of the measurements in a real client matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with a surrogate compound, n-octacosane, before extraction. Recoveries of the surrogate are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:

All initial calibration criteria were met.

All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows:

Due to the anticipated matrix effect, only 10 grams of samples SB4-5S (L9145-15), SB4-8D (L9145-20), S7-1S (L9145-25), and SB4-2S (L9145-28) were extracted and analyzed. The Practical Quantitation Limits value reflect this preparation dilution factor.

The Diesel Range Organics result for sample SB4-1S (L9145-26) was flagged with the X qualifier to denote that although this sample did not contain Diesel Range Organics, the sample contained small amounts of heavy hydrocarbons.

The Diesel Range Organics result for samples SB4-3S (L9145-30) and SB4-8S (L9145-34) were flagged with the X qualifier to denote these samples also contained heavy hydrocarbons. The concentration result was based on the area of the peaks within the retention time window of Diesel Range Organics.

The Diesel Range Organics result for sample SB4-4S (L9145-33) was flagged with the X qualifier to denote that the concentration result was based on the area of only one large peak, which was within the retention time window of Diesel Range Organics.

Lydia M. Coleman
Prepared By

May 7, 1997
Date

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

EXCEPTION REPORT

QC GROUP: 8260 VOLATILES_48105

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
L9145-10	SB6-1-15	19-APR-97 14:29	041997-8260-D1
L9145-11	SB6-2-5	19-APR-97 15:08	041997-8260-D1
L9145-12	SB6-2-10	19-APR-97 15:47	041997-8260-D1
L9145-14	SB6-2-15	19-APR-97 16:26	041997-8260-D1
L9145-15	SB4-5S	19-APR-97 17:05	041997-8260-D1
L9145-16	SB4-7S	19-APR-97 17:44	041997-8260-D1
L9145-17	SB4-6S	19-APR-97 18:23	041997-8260-D1
L9145-18	SB4-4D	19-APR-97 19:02	041997-8260-D1
L9145-19	SB4-4D-DUP	19-APR-97 19:40	041997-8260-D1
47729MS	SB4-4D-DUP	19-APR-97 20:19	041997-8260-D1
47729MSD	SB4-4D-DUP	19-APR-97 20:58	041997-8260-D1
47729MB	Method Blank	19-APR-97 12:31	041997-8260-D1
47729LCS	Lab Ctrl Sample	19-APR-97 13:10	041997-8260-D1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 The following samples required a dilution.

LAS Sample ID	Client Sample ID	Dilution
L9145-10	SB6-1-15	1.02
L9145-11	SB6-2-5	1.02
L9145-14	SB6-2-15	1.02

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All QC samples met criteria for this QC group.
 All internal standard criteria were met for this QC group.

LAS LABORATORIES

VOLATILE ORGANICS BY GC/MS EXCEPTION REPORT

QC GROUP: 8260 VOLATILES_47991

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
L9145-3	M97	22-APR-97 14:50	042297-8260-D-1
MS47881	3-MW-3-W-4-15-97	23-APR-97 14:12	042397-8260-D-1
MSD47881	3-MW-3-W-4-15-97	23-APR-97 14:50	042397-8260-D-1
47819MB	Method Blank	22-APR-97 11:37	042297-8260-D-1
MB47881	Method Blank	23-APR-97 10:13	042397-8260-D-1
47819LCS	Lab Ctrl Sample	22-APR-97 10:58	042297-8260-D-1
LCS47881	Lab Ctrl Sample	23-APR-97 09:34	042397-8260-D-1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The analytical holding times were met.

METHOD BLANK

The following compounds were detected in the method blank(s).
For samples associated with this blank all positive hits are flagged with a B qualifier.

LAS Sample ID	Client Sample ID	Compound	Conc.	RDL
47819MB	Method Blank	Acetone	4.4	10.

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All QC samples met criteria for this QC group.
 All internal standard criteria were met for this QC group.

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
EXCEPTION REPORT

QC GROUP: 8260 VOLATILES_48103

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
L9145-20	SB4-8D	21-APR-97 15:49	042197-8260-E1
L9145-21	SB4-7D	21-APR-97 16:31	042197-8260-E1
L9145-22	SB4-6D	21-APR-97 17:13	042197-8260-E1
L9145-23	SB4-5D	21-APR-97 17:54	042197-8260-E1
L9145-25	S7-1S	19-APR-97 14:51	041997-8260-E1
L9145-26	SB4-1S	19-APR-97 15:38	041997-8260-E1
L9145-27	SB4-1D	19-APR-97 16:24	041997-8260-E1
L9145-28	SB4-2S	21-APR-97 15:08	042197-8260-E1
L9145-29	SB4-2D	19-APR-97 17:56	041997-8260-E1
L9145-30	SB4-3S	19-APR-97 18:42	041997-8260-E1
L9145-31	SB4-3D	19-APR-97 19:28	041997-8260-E1
L9145-32	SB7-1-1	19-APR-97 20:14	041997-8260-E1
L9145-33	SB4-4S	21-APR-97 18:35	042197-8260-E1
L9145-34	SB4-8S	21-APR-97 19:21	042197-8260-E1
L9145-35	TRIP BLANK	22-APR-97 11:29	042297-8260-E1
L9145-8	SB6-1-5	21-APR-97 20:07	042197-8260-E1
L9145-9	SB6-1-10	22-APR-97 13:32	042297-8260-E1
748MS	SB6-1-5	21-APR-97 20:54	042197-8260-E1
748MSD	SB6-1-5	21-APR-97 21:42	042197-8260-E1
47748MB	Method Blank	21-APR-97 12:21	042197-8260-E1
47728MB	Method Blank	19-APR-97 11:45	041997-8260-E1
47805MB	Method Blank	22-APR-97 10:47	042297-8260-E1
47748LCS	Lab Ctrl Sample	21-APR-97 11:40	042197-8260-E1
47728LCS	Lab Ctrl Sample	19-APR-97 11:04	041997-8260-E1
47805LCS	Lab Ctrl Sample	22-APR-97 10:06	042297-8260-E1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

EXCEPTION REPORT

QC GROUP: 8260 VOLATILES_48103

QC SAMPLE RESULTS

All QC samples met criteria for this QC group.

All internal standard criteria were met for this QC group.

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
RECEPTION REPORT
QC GROUP: 8270 SEMI-VOLATILES_47524

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
47524LCS	Lab Ctrl Sample	18-APR-97 17:23	041897-8270-K
47524LCSDUP	Lab Ctrl Sample Dup	18-APR-97 17:54	041897-8270-K
47524MB	Method Blank	18-APR-97 16:52	041897-8270-K
L9145-6	M97	18-APR-97 18:26	041897-8270-K

HOLDING TIMES

All holding times were met for samples in this QC group.
 The extraction holding times were met.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All QC samples met criteria for this QC group.
 All internal standard criteria were met for this QC group.

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS EXCEPTION REPORT

QC GROUP: 8270 SEMI-VOLATILES_47674

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
47674LCS	Lab Ctrl Sample	02-MAY-97 19:18	050297-8270-L1
47674MB	Method Blank	02-MAY-97 18:44	050297-8270-L1
47674MS	SB6-2-15	02-MAY-97 23:13	050297-8270-L1
47674MSD	SB6-2-15	02-MAY-97 23:47	050297-8270-L1
L9145-9	SB6-1-10	02-MAY-97 20:25	050297-8270-L1
L9145-10	SB6-1-15	02-MAY-97 20:59	050297-8270-L1
L9145-8	SB6-1-5	02-MAY-97 19:51	050297-8270-L1
L9145-12	SB6-2-10	02-MAY-97 22:06	050297-8270-L1
L9145-14	SB6-2-15	02-MAY-97 22:39	050297-8270-L1
L9145-11	SB6-2-5	02-MAY-97 21:32	050297-8270-L1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The extraction holding times were met.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All LCS samples met criteria for this QC group.
 All MS samples met criteria for this QC group.
 The following MSD samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	RPD	Limits
47674MSD	SB6-2-15	1,4-Dichlorobenzene	60	56*	21-110 25
47674MSD	SB6-2-15	1,2,4-Trichlorobenzene	73	27*	32-110 23

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
EXCEPTION REPORT
QC GROUP: 8015M - TPH_47391

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
47391LCS	Lab Ctrl Sample	15-APR-97	041597-8015-D-1
47391LCSDUP	Lab Ctrl Sample Dup	15-APR-97	041597-8015-D-1
47391MB	Method Blank	15-APR-97	041597-8015-D-1
L9145-2	M97	15-APR-97	041597-8015-D-1
L9166-1	M10	15-APR-97	041597-8015-D-1
L9166-2	M21	15-APR-97	041597-8015-D-1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The extraction holding times were met.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All LCS samples met criteria for this QC group.
 The following LCSD samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	RPD	Limits
47391LCSDUP	Lab Ctrl Sample Dup	Diesel Range Organics	97	32*	61-143 20

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
EXCEPTION REPORT

QC GROUP: 8270 SEMI-VOLATILES_47674

X All internal standard criteria were met for this QC group.

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

RECEPTION REPORT

QC GROUP: 8015M - TPH_47616

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
47616LCS	Lab Ctrl Sample	23-APR-97	041897-8015-D-7
47616MB	Method Blank	23-APR-97	041897-8015-D-7
47616MS	SB4-1D	23-APR-97	041897-8015-D-7
47616MSD	SB4-1D	23-APR-97	041897-8015-D-7
L9145-15	SB4-5S	23-APR-97	041897-8015-D-7
L9145-16	SB4-7S	23-APR-97	041897-8015-D-7
L9145-17	SB4-6S	23-APR-97	041897-8015-D-7
L9145-18	SB4-4D	23-APR-97	041897-8015-D-7
L9145-19	SB4-4D-DUP	24-APR-97	042497-8015-D-1
L9145-20	SB4-8D	23-APR-97	041897-8015-D-7
L9145-21	SB4-7D	23-APR-97	041897-8015-D-7
L9145-22	SB4-6D	23-APR-97	041897-8015-D-7
L9145-23	SB4-5D	23-APR-97	041897-8015-D-7
L9145-25	S7-1S	23-APR-97	041897-8015-D-7
L9145-26	SB4-1S	23-APR-97	041897-8015-D-8
L9145-27	SB4-1D	23-APR-97	041897-8015-D-8
L9145-28	SB4-2S	23-APR-97	041897-8015-D-8
L9145-29	SB4-2D	23-APR-97	042497-8015-D-1
L9145-30	SB4-3S	23-APR-97	042497-8015-D-1
L9145-31	SB4-3D	24-APR-97	042497-8015-D-1
L9145-32	SB7-1-1	24-APR-97	042497-8015-D-1
L9145-33	SB4-4S	24-APR-97	042497-8015-D-1
L9145-34	SB4-8S	24-APR-97	042497-8015-D-1

HOLDING TIMES

- All holding times were met for samples in this QC group.
 The extraction holding times were met.
 The analytical holding times were met.

METHOD BLANK

- No target analytes were detected in the method blank(s).

SAMPLE RESULTS

- No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

- All surrogate recoveries met criteria for this QC group.

SAMPLE RESULTS

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
EXCEPTION REPORT
QC GROUP: 8015M - TPH_47616

All LCS samples met criteria for this QC group.

All MS samples met criteria for this QC group.

The following MSD samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	RPD	Limits
47616MSD	SB4-1D	Diesel Range Organics	87	33*	51-153 30

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.

LAS Laboratories, Inc.
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. [<i>pesticide/PCB analyses only</i>]
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to <u>surrogates</u> being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	<i>Estimated value</i> -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	<i>For CLP Reporting Only</i> – The percent difference between the concentrations detected on both GC columns was greater than 25 percent [<i>pesticide/PCB analyses only</i>].
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "as received" basis. A value in the % moisture cell indicates that data are reported based on a "dry weight" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC Summary Form.

SAMPLE LOGIN AND CHAIN OF CUSTODY

100100
 LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (Ln01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-1 Temp 4; Location: 133 Water 1 S 120.1 CONDUCTIVITY Water 1 S 150.1 PH	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:07-MAY-97 Hold:16-APR-97
L9145-2 Temp 4, 8015=Diesel Location: RFG01-18C Water 1 S 8015M - TPH	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:16-APR-97
L9145-3 Temp 4; Location: RFG18-49A1 Water 1 S 8240 VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:23-APR-97
L9145-4 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-5 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-6 Temp 4; Location: RFG01-18C Water 1 S 8270 SEMI-VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:16-APR-97
L9145-7 Temp 4, M=As Only Location: RFG01-18C Water 1 S 6010 ICP TRACE	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:06-OCT-97
L9145-8 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se Location: RFG01-18C Soil 4 S 6010 ICP METALS Soil 4 S 6010 ICP TRACE Soil 4 S 7471 MERCURY Soil 4 S 8240 VOLATILES Soil 4 S 8270 SEMI-VOLATILES Soil 4 S 9045 PH	SB6-1-5	09-APR-97	09-APR-97	09-MAY-97 DO VOA FIRST. Hold:06-OCT-97 Hold:06-OCT-97 Hold:07-MAY-97 Hold:23-APR-97 Hold:23-APR-97 Hold:16-APR-97

* Added 7471 Mercury product

0409171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
* L9145-9	SB6-1-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-10	SB6-1-15	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-11	SB6-2-5	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-12	SB6-2-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-13	SB6-2-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S NONE	Hold:19-APR-97		

0409171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
* L9145-14	SB6-2-15	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 7471 MERCURY	Hold:07-MAY-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-15	SB4-5S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel. DO VOA FIRST.				
Location: RFG01-18C				
* Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 7471 MERCURY	Hold:07-MAY-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-16	SB4-7S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
* Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 7471 MERCURY	Hold:07-MAY-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-17	SB4-6S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel. DO VOA FIRST.				
Location: RFG01-18C				
* Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 7471 MERCURY	Hold:07-MAY-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-18	SB4-4D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		

040917

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
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Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

L9145-19	SB4-4D-DUP	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

L9145-20	SB4-8D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

L9145-21	SB4-7D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

L9145-22	SB4-6D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		

C409171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil 4 S 9045 PH		Hold:16-APR-97		
* L9145-23	SB4-5D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 8015M - TPH		Hold:23-APR-97		
Soil 4 S 8240 VOLATILES		Hold:23-APR-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
L9145-24	SB2-1S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Cr Only				
Location: RFG01-18C				
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
* L9145-25	S7-1S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 7471 MERCURY		Hold:06-MAY-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		
* L9145-26	SB4-1S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 7471 MERCURY		Hold:06-MAY-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		
* L9145-27	SB4-1D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 7471 MERCURY		Hold:06-MAY-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
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Soil	4	S	8015M - TPH	Hold:22-APR-97
Soil	4	S	8240 VOLATILES	Hold:22-APR-97
Soil	4	S	9045 PH	Hold:15-APR-97

L9145-28 SB4-2S 08-APR-97 09-APR-97 09-MAY-97
 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.
 Location: RFG01-18C

Soil	4	S	6010 ICP METALS	Hold:05-OCT-97
Soil	4	S	6010 ICP TRACE	Hold:05-OCT-97
Soil	4	S	7471 MERCURY	Hold:06-MAY-97
Soil	4	S	8015M - TPH	Hold:22-APR-97
Soil	4	S	8240 VOLATILES	Hold:22-APR-97
Soil	4	S	9045 PH	Hold:15-APR-97

L9145-29 SB4-2D 08-APR-97 09-APR-97 09-MAY-97
 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.
 Location: RFG01-18C

Soil	4	S	6010 ICP METALS	Hold:05-OCT-97
Soil	4	S	6010 ICP TRACE	Hold:05-OCT-97
Soil	4	S	7471 MERCURY	Hold:06-MAY-97
Soil	4	S	8015M - TPH	Hold:22-APR-97
Soil	4	S	8240 VOLATILES	Hold:22-APR-97
Soil	4	S	9045 PH	Hold:15-APR-97

L9145-30 SB4-3S 08-APR-97 09-APR-97 09-MAY-97
 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.
 Location: RFG01-18C

Soil	4	S	6010 ICP METALS	Hold:05-OCT-97
Soil	4	S	6010 ICP TRACE	Hold:05-OCT-97
Soil	4	S	7471 MERCURY	Hold:06-MAY-97
Soil	4	S	8015M - TPH	Hold:22-APR-97
Soil	4	S	8240 VOLATILES	Hold:22-APR-97
Soil	4	S	9045 PH	Hold:15-APR-97

L9145-31 SB4-3D 08-APR-97 09-APR-97 09-MAY-97
 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.
 Location: RFG01-18C

Soil	4	S	6010 ICP METALS	Hold:05-OCT-97
Soil	4	S	6010 ICP TRACE	Hold:05-OCT-97
Soil	4	S	7471 MERCURY	Hold:06-MAY-97
Soil	4	S	8015M - TPH	Hold:22-APR-97
Soil	4	S	8240 VOLATILES	Hold:22-APR-97
Soil	4	S	9045 PH	Hold:15-APR-97

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 11 1997, 03:14 pm

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
* L9145-32	SB7-1-1	08-APR-97	09-APR-97	09-MAY-9
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 7471 MERCURY	Hold:06-MAY-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
* L9145-33	SB4-4S	09-APR-97	09-APR-97	09-MAY-9
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-34	SB4-8S	09-APR-97	09-APR-97	09-MAY
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-35	TRIP BLANK	09-APR-97	09-APR-97	09-MAY-9
Temp 4, 8015=Diesel				
Location: RF18-49A1				
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
L9145-36	REPORT TYPE	09-APR-97	09-APR-97	09-MAY-97
Temp 4, Hold				
Location:				
Water	1 S GC2			
Water	1 S GCMS2			
Water	1 S INORG TYPE 2 RPT			
Water	1 S TROYER			

Signature: K. T. Troyer

Date: 4-11-97

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LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-1 Temp 4; Location: RFG01-18C Water 1 S 120.1 CONDUCTIVITY Water 1 S 150.1 PH	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-2 Temp 4, 8015=Diesel Location: RFG01-18C Water 1 S 8015M - TPH	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-3 Temp 4; Location: RFG18-49A1 Water 1 S 8240 VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-4 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-5 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-6 Temp 4; Location: RFG01-18C Water 1 S 8270 SEMI-VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-7 Temp 4, M=As Only Location: RFG01-18C Water 1 S 6010 ICP TRACE	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-8 Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se Location: RFG01-18C Soil 4 S 6010 ICP METALS Soil 4 S 6010 ICP TRACE Soil 4 S 8240 VOLATILES Soil 4 S 8270 SEMI-VOLATILES Soil 4 S 9045 PH	SB6-1-5	09-APR-97	09-APR-97	09-MAY-97

* Added comments "do VOA FIRST" to shared containers with volatiles analysis.

C409171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
* L9145-9	SB6-1-10	09-APR-97	09-APR-97	09-MAY
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-10	SB6-1-15	09-APR-97	09-APR-97	09-MAY-9
* Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
* L9145-11	SB6-2-5	09-APR-97	09-APR-97	09-MAY
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-12	SB6-2-10	09-APR-97	09-APR-97	09-MAY-9
* Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-13	SB6-2-10	09-APR-97	09-APR-97	09-MAY 9
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se				
Location: RFG01-18C				
Soil 4	S NONE	Hold:19-APR-97		
L9145-14	SB6-2-15	09-APR-97	09-APR-97	09-MAY-9
* Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se DO VOA FIRST.				
Location: RFG01-18C				

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-15 SB4-5S 09-APR-97 09-APR-97 09-MAY-97				
*Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel. DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-16 SB4-7S 09-APR-97 09-APR-97 09-MAY-97				
*Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-17 SB4-6S 09-APR-97 09-APR-97 09-MAY-97				
*Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel. DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
L9145-18 SB4-4D 09-APR-97 09-APR-97 09-MAY-97				
*Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		

C469171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
* L9145-19	SB4-4D-DUP	09-APR-97	09-APR-97	09-MAY-
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-20	SB4-8D	09-APR-97	09-APR-97	09-MAY-9
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-21	SB4-7D	09-APR-97	09-APR-97	09-MAY-
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-22	SB4-6D	09-APR-97	09-APR-97	09-MAY-9
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
* L9145-23	SB4-5D	09-APR-97	09-APR-97	09-MAY-
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-24 Temp 4, M=Cr Only Location: RFG01-18C	SB2-1S	09-APR-97	09-APR-97	09-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
L9145-25 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST. Location: RFG01-18C	S7-1S	08-APR-97	09-APR-97	09-MAY-97
* Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		
L9145-26 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST. Location: RFG01-18C	SB4-1S	08-APR-97	09-APR-97	09-MAY-97
* Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		
L9145-27 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST. Location: RFG01-18C	SB4-1D	08-APR-97	09-APR-97	09-MAY-97
* Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		
L9145-28 Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST. Location: RFG01-18C	SB4-2S	08-APR-97	09-APR-97	09-MAY-97
* Soil 4 S 6010 ICP METALS		Hold:05-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:05-OCT-97		
Soil 4 S 8015M - TPH		Hold:22-APR-97		
Soil 4 S 8240 VOLATILES		Hold:22-APR-97		
Soil 4 S 9045 PH		Hold:15-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (Ln01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due FR Date
* L9145-29	SB4-2D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
* L9145-30	SB4-3S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
* L9145-31	SB4-3D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
* L9145-32	SB7-1-1	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
* L9145-33	SB4-4S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 11:16 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-34	SB4-8S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba,Cd,Cr,Pb,Ag,Trace=As,Se, 8015=Diesel DO VOA FIRST.				
* Location: RFG01-18C				
Soil	4 S 6010 ICP METALS		Hold:06-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:06-OCT-97	
Soil	4 S 8015M - TPH		Hold:23-APR-97	
Soil	4 S 8240 VOLATILES		Hold:23-APR-97	
Soil	4 S 9045 PH		Hold:16-APR-97	
L9145-35	TRIP BLANK	09-APR-97	09-APR-97	09-MAY-97
Temp 4, 8015=Diesel				
Location: RF18-49A1				
Soil	4 S 8240 VOLATILES		Hold:23-APR-97	
L9145-36	REPORT TYPE	09-APR-97	09-APR-97	09-MAY-97
Temp 4, Hold				
Location:				
Water	1 S GC2			
Water	1 S GCMS2			
Water	1 S INORG TYPE 2 RPT			
Water	1 S TROYER			

Signature: *[Handwritten Signature]*
 Date: 04-10-97

0409171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-1 Temp 4; Location: RFG01-18C Water 1 S 120.1 CONDUCTIVITY Water 1 S 150.1 PH	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:07-MAY-97 Hold:16-APR-97
L9145-2 Temp 4, 8015=Diesel Location: RFG01-18C Water 1 S 8015M - TPH	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:16-APR-97
L9145-3 Temp 4; Location: RFG18-49A1 Water 1 S 8240 VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:23-APR-97
L9145-4 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-5 Temp 4; Location: RFG18-49A1	M97	09-APR-97	09-APR-97	09-MAY-97
L9145-6 Temp 4; Location: RFG01-18C Water 1 S 8270 SEMI-VOLATILES	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:16-APR-97
L9145-7 Temp 4, M=As Only Location: RFG01-18C Water 1 S 6010 ICP TRACE	M97	09-APR-97	09-APR-97	09-MAY-97 Hold:06-OCT-97
L9145-8 Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se Location: RFG01-18C Soil 4 S 6010 ICP METALS Soil 4 S 6010 ICP TRACE Soil 4 S 8240 VOLATILES Soil 4 S 8270 SEMI-VOLATILES Soil 4 S 9045 PH	SB6-1-5	09-APR-97	09-APR-97	09-MAY-97 Hold:06-OCT-97 Hold:06-OCT-97 Hold:23-APR-97 Hold:23-APR-97 Hold:16-APR-97

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-9	SB6-1-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-10	SB6-1-15	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-11	SB6-2-5	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-12	SB6-2-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-13	SB6-2-10	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				
Soil	4 S NONE	Hold:19-APR-97		
L9145-14	SB6-2-15	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se				
Location: RFG01-18C				

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 8270 SEMI-VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
<hr/>				
L9145-15	SB4-5S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
<hr/>				
L9145-16	SB4-7S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
<hr/>				
L9145-17	SB4-6S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		
<hr/>				
L9145-18	SB4-4D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil 4	S 6010 ICP METALS	Hold:06-OCT-97		
Soil 4	S 6010 ICP TRACE	Hold:06-OCT-97		
Soil 4	S 8015M - TPH	Hold:23-APR-97		
Soil 4	S 8240 VOLATILES	Hold:23-APR-97		
Soil 4	S 9045 PH	Hold:16-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-19	SB4-4D-DUP	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-20	SB4-8D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-21	SB4-7D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-22	SB4-6D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-23	SB4-5D	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-24	SB2-1S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Cr Only				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-25	S7-1S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-26	SB4-1S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-27	SB4-1D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-28	SB4-2S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-29	SB4-2D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-30	SB4-3S	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-31	SB4-3D	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-32	SB7-1-1	08-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:05-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:05-OCT-97		
Soil	4 S 8015M - TPH	Hold:22-APR-97		
Soil	4 S 8240 VOLATILES	Hold:22-APR-97		
Soil	4 S 9045 PH	Hold:15-APR-97		
L9145-33	SB4-4S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		

C469171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 10 1997, 09:21 am

Login Number: L9145
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9145-34	SB4-8S	09-APR-97	09-APR-97	09-MAY-97
Temp 4, M=Ba, Cd, Cr, Pb, Ag, Trace=As, Se, 8015=Diesel				
Location: RFG01-18C				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 8015M - TPH	Hold:23-APR-97		
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
L9145-35	TRIP BLANK	09-APR-97	09-APR-97	09-MAY-97
Temp 4, 8015=Diesel				
Location: RF18-49A1				
Soil	4 S 8240 VOLATILES	Hold:23-APR-97		
L9145-36	REPORT TYPE	09-APR-97	09-APR-97	09-MAY-97
Temp 4, Hold				
Location:				
Water	1 S GC2			
Water	1 S GCMS2			
Water	1 S INORG TYPE 2 RPT			
Water	1 S TROYER			

Signature: Yail E. Ackerman
 Date: 4-10-97

C409171

C 9145

CHAIN OF CUSTODY RECORD

Client/Project Name: **KEENE MCGEE CHEMICAL CORP**
 Project Location: **HENDERSEN, NV**
 Project Number: **4020 - 004-200**
 Field Logbook No.:
 Sampler (Print Name)/Affiliation: **David Diekin**
 Chain of Custody Tape No.:
 Signature: **[Signature]**
 Send Results/Report to: **DES POULSC**
ENSR **CAMARILLO**

Field Sample No./Identification	Date	Time	Grab	Comp	Sample Container (Size/Type)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	Analysis Requested				Lab I.D.	Remarks
									Pb	Total Metals	TEPH	Volatile Organics (BZ40)		
SBA-55	4/9/97	0857	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-75	4/9/97	0844	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-65	4/9/97	0851	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-4D	4/9/97	0936	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-4D-DUP	4/9/97	0951	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-8D	4/9/97	1037	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-7D	4/9/97	1161	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-6D	4/9/97	1118	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-5D	4/9/97	1133	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		
SBA-15	4/9/97	1244	X		6" SS SLEEVE	SOIL	ICE	NA	X	X	X	X		

Received by: (Print Name) **David Diekin** Date: **4-9-97** Time: **1444**
 Signature: **[Signature]**
 Analytical Laboratory (Destination):
 Received by: (Print Name) **Heather Loren** Date: **4/09/97** Time: **1630**
 Signature: **[Signature]**
 Received by: (Print Name) **Epil Asherman** Date: **4/9/97** Time: **700**
 Signature: **[Signature]**

040917

69145

CHAIN OF CUSTODY RECORD



Client/Project Name		Project Location		Analysis Requested							
KESSE McCLE CHEMICAL CORP		ANDERSEN, NV		Total Metals							
Project Number 4020-004-200		Field Logbook No.		TEPH (8015D)							
Sampler (Print Name) / Alias: David Dirkin		Chain of Custody Tape No.		VOLATILES (8246)							
Signature: <i>David Dirkin</i>		Send Results/Report to: DJ Puchis E-ENSE (Cambridge)									
Field Sample No./ Identification	Date	Time	Grab	Comp	Sample Container (Size/Type)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	Lab ID	Remarks	
S7-15	4/8/97	1206		X	6" SS Skene	Soil	ICE	NA			
S8A-15	4/8/97	1522	X		6" SS Skene	Soil	ICE	NA			
S8A-1D	4/8/97	1618	X		6" SS Skene	Soil	ICE	NA			
S8A-2S	4/8/97	1637	X		6" SS Skene	Soil	ICE	NA			
S8A-2D	4/8/97	1701	X		6" SS Skene	Soil	ICE	NA			
S8A-3S	4/8/97	1711	X		6" SS Skene	Soil	ICE	NA			
S8A-3D	4/8/97	1732	X		6" SS Skene	Soil	ICE	NA			
S87-1-1	4/8/97	1710	X		6" SS	Soil	ICE	NA			
S8A-4S	4/9/97	0825	X		6" SS Skene	Soil	ICE	NA			
S8A-8S	4/9/97	0832	X		6" SS Skene	Soil	ICE	NA			
Relinquished by: (Print Name) David Dirkin		Date: 4/9/97		Received by: (Print Name) SM Crowley		Date: 4-9-97		Time: 1444		Analytical Laboratory (Destination)	
Signature: <i>David Dirkin</i>		Time: 1444		Signature: <i>SM Crowley</i>		Date: 4/10/97		Time: 1630			
Relinquished by: (Print Name) SM Crowley		Date: 4-9-97		Received by: (Print Name) Gail Ackerman		Date: 4/9/97		Time: 1700			
Signature: <i>SM Crowley</i>		Time: 1630		Signature: <i>Gail Ackerman</i>		Date: 4/9/97		Time: 1700			
Relinquished by: (Print Name)		Date:		Received by: (Print Name)		Date:		Time:			
Signature:		Time:		Signature: <i>Gail Ackerman</i>		Date:		Time:			

0409171



**Sample Login
Login Review Checklist**

Lot Number L 9145

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

<u>SAMPLE SUMMARY REPORT</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Are all samples present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Are all matrices indicated correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Are all analyses logged in for the correct container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Are samples logged in according to LAS batching procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>LOGIN CHAIN OF CUSTODY</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Have all appropriate comments been indicated in the comment section?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>SAMPLE RECEIVING CHECKLIST</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Mari E. Ackerman
primary review signature

4-9-97
date

D. Froger
secondary review signature

4-10-97
date

040917

19145

Job No: _____ Cooler ID: _____

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 4°C
 Temperature of temp. blank upon receipt: N/A
 yes no n/a *Comments/Discrepancies

custody seals present
 custody seals intact
 chain of custody present
 blue ice (or equiv.) present
 blue ice (or equiv.) frozen
 rad survey completed

SAMPLE CONDITION UPON RECEIPT

all bottles labeled
 bottle custody seal present
 bottle custody seal intact
 samples intact
 proper container used for sample
 sample volume sufficient for analysis
 proper pres. indicated on the COC
 VOA's contain headspace
 are samples bi-phasic (if so, indicate sample ID's):

MISCELLANEOUS ITEMS

samples with short holding times
 samples to subcontract

ADDITIONAL COMMENTS/DISCREPANCIES Two stainless steel sleeves with ID tags SB5-2-1, and SB5-2-3 not on COC
 logged in for analysis 8015 (SB5-2-1) and 8016 (SB5-2-3) as stated on container.
 Two unlabeled WA vials without ID tags ~~submitted~~ not on COC ~~discussed per CSR 121~~
 one labeled "Trip Blank" logged in for 8240 volatile, other VOA vial without ID #
 discarded per CSR 121

Completed by / date: Shah E. Chohan
 sent to the client (date/initials): _____
 ** Client's signature upon receipt:

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt
 ** = please review this information and return via facsimile to the appropriate CSR (702)361-8146

0469171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
M97	L9145-1		Water	120.1 CONDUCTIV
	L9145-1		Water	150.1 PH
	L9145-2		Water	8015M - TPH
	L9145-3		Water	8240 VOLATILE
	L9145-6		Water	8270 SEMI-VOLAT
	L9145-7		Water	6010 ICP TRAC
	REPORT TYPE	L9145-36		Water
L9145-36			Water	GCMS2
L9145-36			Water	INORG TYPE 2 I
L9145-36			Water	TROYER
S7-1S	L9145-25		Soil	6010 ICP METALS
	L9145-25		Soil	6010 ICP TRAC
	L9145-25		Soil	8015M - TPH
	L9145-25		Soil	8240 VOLATILES
	L9145-25		Soil	9045 PH
SB2-1S	L9145-24		Soil	6010 ICP METALS
	L9145-24		Soil	9045 PH
SB4-1D	L9145-27		Soil	6010 ICP METAL
	L9145-27		Soil	6010 ICP TRAC
	L9145-27		Soil	8015M - TPH
	L9145-27		Soil	8240 VOLATILE
	L9145-27		Soil	9045 PH
SB4-1S	L9145-26		Soil	6010 ICP METALS
	L9145-26		Soil	6010 ICP TRAC
	L9145-26		Soil	8015M - TPH
	L9145-26		Soil	8240 VOLATILES
	L9145-26		Soil	9045 PH
SB4-2D	L9145-29		Soil	6010 ICP METALS
	L9145-29		Soil	6010 ICP TRAC
	L9145-29		Soil	8015M - TPH
	L9145-29		Soil	8240 VOLATILE
	L9145-29		Soil	9045 PH
SB4-2S	L9145-28		Soil	6010 ICP METAL
	L9145-28		Soil	6010 ICP TRAC
	L9145-28		Soil	8015M - TPH
	L9145-28		Soil	8240 VOLATILE
	L9145-28		Soil	9045 PH
SB4-3D	L9145-31		Soil	6010 ICP METALS
	L9145-31		Soil	6010 ICP TRAC
	L9145-31		Soil	8015M - TPH
	L9145-31		Soil	8240 VOLATILES
	L9145-31		Soil	9045 PH
SB4-3S	L9145-30		Soil	6010 ICP ME
	L9145-30		Soil	6010 ICP TRAC
	L9145-30		Soil	8015M - TPH

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LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9145-30		Soil	8240 VOLATILES
	L9145-30		Soil	9045 PH
SB4-4D	L9145-18		Soil	6010 ICP METALS
	L9145-18		Soil	6010 ICP TRACE
	L9145-18		Soil	8015M - TPH
	L9145-18		Soil	8240 VOLATILES
	L9145-18		Soil	9045 PH
SB4-4D-DUP	L9145-19		Soil	6010 ICP METALS
	L9145-19		Soil	6010 ICP TRACE
	L9145-19		Soil	8015M - TPH
	L9145-19		Soil	8240 VOLATILES
	L9145-19		Soil	9045 PH
SB4-4S	L9145-33		Soil	6010 ICP METALS
	L9145-33		Soil	6010 ICP TRACE
	L9145-33		Soil	8015M - TPH
	L9145-33		Soil	8240 VOLATILES
	L9145-33		Soil	9045 PH
SB4-5D	L9145-23		Soil	6010 ICP METALS
	L9145-23		Soil	6010 ICP TRACE
	L9145-23		Soil	8015M - TPH
	L9145-23		Soil	8240 VOLATILES
	L9145-23		Soil	9045 PH
SB4-5S	L9145-15		Soil	6010 ICP METALS
	L9145-15		Soil	6010 ICP TRACE
	L9145-15		Soil	8015M - TPH
	L9145-15		Soil	8240 VOLATILES
	L9145-15		Soil	9045 PH
SB4-6D	L9145-22		Soil	6010 ICP METALS
	L9145-22		Soil	6010 ICP TRACE
	L9145-22		Soil	8015M - TPH
	L9145-22		Soil	8240 VOLATILES
	L9145-22		Soil	9045 PH
SB4-6S	L9145-17		Soil	6010 ICP METALS
	L9145-17		Soil	6010 ICP TRACE
	L9145-17		Soil	8015M - TPH
	L9145-17		Soil	8240 VOLATILES
	L9145-17		Soil	9045 PH
SB4-7D	L9145-21		Soil	6010 ICP METALS
	L9145-21		Soil	6010 ICP TRACE
	L9145-21		Soil	8015M - TPH
	L9145-21		Soil	8240 VOLATILES
	L9145-21		Soil	9045 PH
SB4-7S	L9145-16		Soil	6010 ICP METALS
	L9145-16		Soil	6010 ICP TRACE
	L9145-16		Soil	8015M - TPH
	L9145-16		Soil	8240 VOLATILES

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LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9145-16		Soil	9045 PH
SB4-8D	L9145-20		Soil	6010 ICP METALS
	L9145-20		Soil	6010 ICP TRAC
	L9145-20		Soil	8015M - TPH
	L9145-20		Soil	8240 VOLATILES
	L9145-20		Soil	9045 PH
SB4-8S	L9145-34		Soil	6010 ICP METALS
	L9145-34		Soil	6010 ICP TRACE
	L9145-34		Soil	8015M - TPH
	L9145-34		Soil	8240 VOLATILE
	L9145-34		Soil	9045 PH
SB6-1-10	L9145-9		Soil	6010 ICP METALS
	L9145-9		Soil	6010 ICP TRAC
	L9145-9		Soil	8240 VOLATILES
	L9145-9		Soil	8270 SEMI-VOLAT
	L9145-9		Soil	9045 PH
SB6-1-15	L9145-10		Soil	6010 ICP METALS
	L9145-10		Soil	6010 ICP TRAC
	L9145-10		Soil	8240 VOLATILE
	L9145-10		Soil	8270 SEMI-VOLAT
	L9145-10		Soil	9045 PH
SB6-1-5	L9145-8		Soil	6010 ICP METALS
	L9145-8		Soil	6010 ICP TRACE
	L9145-8		Soil	8240 VOLATILES
	L9145-8		Soil	8270 SEMI-VOLAT
	L9145-8		Soil	9045 PH
SB6-2-10	L9145-12		Soil	6010 ICP METALS
	L9145-12		Soil	6010 ICP TRAC
	L9145-12		Soil	8240 VOLATILES
	L9145-12		Soil	8270 SEMI-VOLAT
	L9145-12		Soil	9045 PH
	L9145-13		Soil	NONE
SB6-2-15	L9145-14		Soil	6010 ICP METALS
	L9145-14		Soil	6010 ICP TRAC
	L9145-14		Soil	8240 VOLATILE
	L9145-14		Soil	8270 SEMI-VOLAT
	L9145-14		Soil	9045 PH
SB6-2-5	L9145-11		Soil	6010 ICP METALS
	L9145-11		Soil	6010 ICP TRACE
	L9145-11		Soil	8240 VOLATILE
	L9145-11		Soil	8270 SEMI-VOL
	L9145-11		Soil	9045 PH
SB7-1-1	L9145-32		Soil	6010 ICP METALS
	L9145-32		Soil	6010 ICP TRAC
	L9145-32		Soil	8015M - TPH
	L9145-32		Soil	8240 VOLATILES

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LAS Laboratories
SAMPLE SUMMARY REPORT (SU02)
Kerr-McCree * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9145-32		Soil	9045 PH
TRIP BLANK	L9145-35		Soil	8240 VOLATILES

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NON-METALS

WATER

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: M97
Date Collected: 09-APR-97
Matrix: Water

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
SPECIFIC CONDUCTANCE	120.1	47298	3690	1.	1.	1		uS/cm	11-APR-97	L9145-1
PH	150.1	47389	7.72	0.1	0.1	1		pH Units	11-APR-97	L9145-1

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-1-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.87	0.1	0.1	1		pH Units	18-APR-97	L9145-8

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Count Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-1-10
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dif	Qual	Units	Analyzed	Lab ID
PH	9045	47503	9.14	0.1	0.1	1		pH Units	18-APR-97	L9145-9

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-1-15
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	10.0	0.1	0.1	1		pH Units	18-APR-97	L9145-10

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Mount Name: Kerr-McGee * Henderson, NV
Object Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-2-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.47	0.1	0.1	1		pH Units	18-APR-97	L9145-11

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-2-10
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.37	0.1	0.1	1		pH Units	18-APR-97	L9145-12

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-2-15
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.73	0.1	0.1	1		pH Units	18-APR-97	L9145-14

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-5S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.14	0.1	0.1	1		pH Units	18-APR-97	L9145-15

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-7S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	9.94	0.1	0.1	1		pH Units	18-APR-97	L9145-16

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-6S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	9.65	0.1	0.1	1		pH Units	18-APR-97	L9145-17

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Client Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-4D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	9.27	0.1	0.1	1		pH Units	18-APR-97	L9145-18

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-4D-DUP
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	9.25	0.1	0.1	1		pH Units	18-APR-97	L9145-19

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Count Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-8D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	7.85	0.1	0.1	1		pH Units	18-APR-97	L9145-20

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-7D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47503	8.67	0.1	0.1	1		pH Units	18-APR-97	L9145-21

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-6D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.07	0.1	0.1	1		pH Units	15-APR-97	L9145-22

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-5D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MPL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.24	0.1	0.1	1		pH Units	15-APR-97	L9145-23

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Mount Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-1S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.72	0.1	0.1	1		pH Units	15-APR-97	L9145-24

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: S7-1S
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.09	0.1	0.1	1		pH Units	15-APR-97	L9145-25

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Count Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-15
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.52	0.1	0.1	1		pH Units	15-APR-97	L9145-26

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-1D
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	10.3	0.1	0.1	1		pH Units	15-APR-97	L9145-27

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-2S
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.32	0.1	0.1	1		pH Units	15-APR-97	L9145-28

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-2D
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.63	0.1	0.1	1		pH Units	15-APR-97	L9145-29

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB7-1-1
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.50	0.1	0.1	1		pH Units	15-APR-97	L9145-32

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB4-3S
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.64	0.1	0.1	1		pH Units	15-APR-97	L9145-30

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Point Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-3D
Date Collected: 08-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.14	0.1	0.1	1		pH Units	15-APR-97	L9145-31

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-4S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	8.92	0.1	0.1	1		pH Units	15-APR-97	L9145-33

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Client Name: Kerr-McGee * Henderson, NV
Subject Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-8S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9145
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47504	9.18	0.1	0.1	1		pH Units	15-APR-97	L9145-34

DUPLICATE DATA SUMMARY

ogin/SDG Number: L9145

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	IMP Result	CUP Result	Units	RPD	Data Qunt	RPD
Specific Conductance	47298	11-APR-97	M97	L9145-1	47298DUP	3690	3750	uS/cm	1.6		20
pH	47389	11-APR-97	M97	L9145-1	47389DUP	7.72	7.71	pH Units	0.010		20

TEST NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: N SOLIDS ADJUSTED: N/A UNITS: ug

! - The duplicate precision for pH is the absolute difference.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	SRP Result	DVP Result	Units	RPD	Date Qual Limit	RPD Limit
pH	47503	18-APR-97	SB6-1-5	L9145-8	47503DUP	8.87	9.00	pH Units	0.13		20
pH	47504	15-APR-97	SB4-6D	L9145-22	47504DUP	9.07	9.03	pH Units	0.040		20

REPORT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: N SOLIDS ADJUSTED: Y UNITS: ug

pH - The duplicate precision for pH is the absolute difference.

METALS

SOILS

LAS Laboratories, Inc.

METALS DATA REPORT

Count Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-7S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	16.6	0.6	2.	1		mg/kg	24-APR-97	L9145-16
BARIUM, TOTAL	6010	47623	329	0.2	40	1	*	mg/kg	24-APR-97	L9145-16
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-16
CHROMIUM, TOTAL	6010	47623	21.8	0.2	2.	1		mg/kg	24-APR-97	L9145-16
LEAD, TOTAL	6010	47623	59.9	0.4	0.6	1		mg/kg	24-APR-97	L9145-16
SELENIUM, TOTAL	6010	47623	<4.	4.	5.	5	U	mg/kg	24-APR-97	L9145-16
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-16
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-16

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-6S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	4.3	0.6	2.	1		mg/kg	24-APR-97	L9145-17
BARIUM, TOTAL	6010	47623	200	0.2	40	1	*	mg/kg	24-APR-97	L9145-17
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-17
CHROMIUM, TOTAL	6010	47623	17.4	0.2	2.	1		mg/kg	24-APR-97	L9145-17
LEAD, TOTAL	6010	47623	9.4	0.4	0.6	1		mg/kg	24-APR-97	L9145-17
SELENIUM, TOTAL	6010	47623	<4.	4.	5.	5	U	mg/kg	24-APR-97	L9145-17
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-17
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-17

LAS Laboratories, Inc.

METALS DATA REPORT

Mount Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: S7-1S
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	10.5	0.6	2.	1		mg/kg	24-APR-97	L9145-25
BARIUM, TOTAL	6010	47623	516	0.2	40	1	*	mg/kg	24-APR-97	L9145-25
CADMIUM, TOTAL	6010	47623	0.8	0.4	1.	1	B	mg/kg	24-APR-97	L9145-25
CHROMIUM, TOTAL	6010	47623	42.9	0.2	2.	1		mg/kg	24-APR-97	L9145-25
LEAD, TOTAL	6010	47623	257	0.4	0.6	1		mg/kg	24-APR-97	L9145-25
SELENIUM, TOTAL	6010	47623	<4.	4.	5.	5	U	mg/kg	24-APR-97	L9145-25
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-25
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-25

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
 Project Name: KERR-MCGEE
 Project Desc: Misc.

Client Sample ID: SB4-5S
 Date Collected: 09-APR-97
 Matrix: Soil

SDG Number: L9145S2
 Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	6.6	0.5	2.	1		mg/kg	24-APR-97	L9145-15
BARIUM, TOTAL	6010	47623	190	0.2	30	1	*	mg/kg	24-APR-97	L9145-15
CADMIUM, TOTAL	6010	47623	<0.3	0.3	0.9	1	U	mg/kg	24-APR-97	L9145-15
CHROMIUM, TOTAL	6010	47623	20.1	0.2	2.	1		mg/kg	24-APR-97	L9145-15
LEAD, TOTAL	6010	47623	15.3	0.3	0.5	1		mg/kg	24-APR-97	L9145-15
SELENIUM, TOTAL	6010	47623	<3.	3.	4.	5	U	mg/kg	24-APR-97	L9145-15
SILVER, TOTAL	6010	47623	<0.3	0.3	2.	1	U	mg/kg	24-APR-97	L9145-15
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-15

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
 Project Name: KERR-MCGEE
 Project Desc: Misc.

Client Sample ID: SB4-4D
 Date Collected: 09-APR-97
 Matrix: Soil

SDG Number: L9145S2
 Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47623	4.2	0.5	2.	1		mg/kg	24-APR-97	L9145-18
BARIUM, TOTAL	6010	47623	199	0.2	30	1	*	mg/kg	24-APR-97	L9145-18
CADMIUM, TOTAL	6010	47623	<0.3	0.3	0.8	1	U	mg/kg	24-APR-97	L9145-18
CHROMIUM, TOTAL	6010	47623	20.7	0.2	2.	1		mg/kg	24-APR-97	L9145-18
LEAD, TOTAL	6010	47623	9.4	0.3	0.5	1		mg/kg	24-APR-97	L9145-18
SELENIUM, TOTAL	6010	47623	<0.7	0.7	0.8	1	U	mg/kg	24-APR-97	L9145-18
SILVER, TOTAL	6010	47623	<0.3	0.3	2.	1	U	mg/kg	24-APR-97	L9145-18
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-18

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-4D-DUP
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	IDL	DIL	QAC	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	9.3	0.6	2.	1		mg/kg	24-APR-97	L9145-19
BARIUM, TOTAL	6010	47623	207	0.2	40	1	*	mg/kg	24-APR-97	L9145-19
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-19
CHROMIUM, TOTAL	6010	47623	24.2	0.2	2.	1		mg/kg	24-APR-97	L9145-19
LEAD, TOTAL	6010	47623	29.2	0.4	0.6	1		mg/kg	24-APR-97	L9145-19
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-19
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-19
MERCURY	7471	47629	<0.09	0.09	0.09	1	U	mg/kg	21-APR-97	L9145-19

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB4-8D
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	4.4	0.6	2.	1		mg/kg	24-APR-97	L9145-20
BARIUM, TOTAL	6010	47623	227	0.2	40	1	*	mg/kg	24-APR-97	L9145-20
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-20
CHROMIUM, TOTAL	6010	47623	14.3	0.2	2.	1		mg/kg	24-APR-97	L9145-20
LEAD, TOTAL	6010	47623	11.5	0.4	0.6	1		mg/kg	24-APR-97	L9145-20
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-20
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-20
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-20

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-7D
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47623	4.9	0.5	2.	1		mg/kg	24-APR-97	L9145-21
BARIUM, TOTAL	6010	47623	245	0.2	40	1		mg/kg	24-APR-97	L9145-21
CADMIUM, TOTAL	6010	47623	<0.4	0.4	0.9	1	U	mg/kg	24-APR-97	L9145-21
CHROMIUM, TOTAL	6010	47623	17.4	0.2	2.	1		mg/kg	24-APR-97	L9145-21
LEAD, TOTAL	6010	47623	14.3	0.4	0.5	1		mg/kg	24-APR-97	L9145-21
SELENIUM, TOTAL	6010	47623	<0.7	0.7	0.9	1	U	mg/kg	24-APR-97	L9145-21
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-21
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-21

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-1-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	HDL	PDI	DLI	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	3.7	0.5	2.	1		mg/kg	24-APR-97	L9145-8
BARIUM, TOTAL	6010	47623	175	0.2	40	1		mg/kg	24-APR-97	L9145-8
CADMIUM, TOTAL	6010	47623	<0.4	0.4	0.9	1	U	mg/kg	24-APR-97	L9145-8
CHROMIUM, TOTAL	6010	47623	15.8	0.2	2.	1		mg/kg	24-APR-97	L9145-8
LEAD, TOTAL	6010	47623	8	0.4	0.5	1		mg/kg	24-APR-97	L9145-8
SELENIUM, TOTAL	6010	47623	<0.7	0.7	0.9	1	U	mg/kg	24-APR-97	L9145-8
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-8
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-8

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB6-1-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	6	0.6	2.	1		mg/kg	24-APR-97	L9145-9
BARIUM, TOTAL	6010	47623	327	0.2	40	1	*	mg/kg	24-APR-97	L9145-9
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-9
CHROMIUM, TOTAL	6010	47623	16.1	0.2	2.	1		mg/kg	24-APR-97	L9145-9
LEAD, TOTAL	6010	47623	8.4	0.4	0.6	1		mg/kg	24-APR-97	L9145-9
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-9
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-9
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-9

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-6D
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DLL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47623	5.3	0.6	2.	1		mg/kg	24-APR-97	L9145-22
BARIUM, TOTAL	6010	47623	202	0.2	40.	1	*	mg/kg	24-APR-97	L9145-22
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-22
CHROMIUM, TOTAL	6010	47623	18.1	0.2	2.	1		mg/kg	24-APR-97	L9145-22
LEAD, TOTAL	6010	47623	12.9	0.4	0.6	1		mg/kg	24-APR-97	L9145-22
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-22
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-22
MERCURY	7471	47629	<0.09	0.09	0.09	1	U	mg/kg	21-APR-97	L9145-22

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-1-15
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDC	DDC	DLX	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	5.6	0.6	2.	1		mg/kg	24-APR-97	L9145-10
BARIUM, TOTAL	6010	47623	150	0.2	40	1		mg/kg	24-APR-97	L9145-10
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-10
CHROMIUM, TOTAL	6010	47623	15.2	0.2	2.	1		mg/kg	24-APR-97	L9145-10
LEAD, TOTAL	6010	47623	7.2	0.4	0.6	1		mg/kg	24-APR-97	L9145-10
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-10
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-10
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-10

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
 Project Name: KERR-MCGEE
 Project Desc: Misc.

Client Sample ID: SB4-5D
 Date Collected: 09-APR-97
 Matrix: Soil

SDG Number: L9145S2
 Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	NDL	DLI	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47623	4.4	0.6	2.	1		mg/kg	24-APR-97	L9145-23
BARIUM, TOTAL	6010	47623	196	0.2	40	1	*	mg/kg	24-APR-97	L9145-23
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-23
CHROMIUM, TOTAL	6010	47623	15.9	0.2	2.	1		mg/kg	24-APR-97	L9145-23
LEAD, TOTAL	6010	47623	10.9	0.4	0.6	1		mg/kg	24-APR-97	L9145-23
SELENIUM, TOTAL	6010	47623	<0.8	0.8	1.	1	U	mg/kg	24-APR-97	L9145-23
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-23
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-23

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-2-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	PDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	4	0.6	2.	1		mg/kg	24-APR-97	L9145-11
BARIUM, TOTAL	6010	47623	150	0.2	40	1	*	mg/kg	24-APR-97	L9145-11
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-11
CHROMIUM, TOTAL	6010	47623	13.9	0.2	2.	1		mg/kg	24-APR-97	L9145-11
LEAD, TOTAL	6010	47623	7.9	0.4	0.6	1		mg/kg	24-APR-97	L9145-11
SELENIUM, TOTAL	6010	47623	<4.	4.	5.	5	U	mg/kg	24-APR-97	L9145-11
SILVER, TOTAL	6010	47623	1.2	0.4	2.	1	B	mg/kg	24-APR-97	L9145-11
MERCURY	7471	47629	0.1	0.1	0.1	1		mg/kg	21-APR-97	L9145-11

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB6-2-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	REL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47623	5.8	0.6	2.	1		mg/kg	24-APR-97	L9145-12
BARIUM, TOTAL	6010	47623	170	0.2	40	1	*	mg/kg	24-APR-97	L9145-12
CADMIUM, TOTAL	6010	47623	<0.4	0.4	1.	1	U	mg/kg	24-APR-97	L9145-12
CHROMIUM, TOTAL	6010	47623	17.6	0.2	2.	1		mg/kg	24-APR-97	L9145-12
LEAD, TOTAL	6010	47623	10.1	0.4	0.6	1		mg/kg	24-APR-97	L9145-12
SELENIUM, TOTAL	6010	47623	<4.	4.	5.	5	U	mg/kg	24-APR-97	L9145-12
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-12
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-12

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB6-2-15
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S2
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47623	5.1	0.5	2.	1		mg/kg	24-APR-97	L9145-14
BARIUM, TOTAL	6010	47623	173	0.2	40	1	*	mg/kg	24-APR-97	L9145-14
CADMIUM, TOTAL	6010	47623	<0.4	0.4	0.9	1	U	mg/kg	24-APR-97	L9145-14
CHROMIUM, TOTAL	6010	47623	16.4	0.2	2.	1		mg/kg	24-APR-97	L9145-14
LEAD, TOTAL	6010	47623	8.5	0.4	0.5	1		mg/kg	24-APR-97	L9145-14
SELENIUM, TOTAL	6010	47623	<4.	4.	4.	5	U	mg/kg	24-APR-97	L9145-14
SILVER, TOTAL	6010	47623	<0.4	0.4	2.	1	U	mg/kg	24-APR-97	L9145-14
MERCURY	7471	47629	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-14

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9145S2

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SPR Result	Known Value	Units	# Sec	Lab ID
ARSENIC, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	105.	3.72	99.3	mg/kg	102	75-125
BARIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	611.	175.	397.	mg/kg	110	75-125
CADMIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	10.3	<0.4	9.93	mg/kg	103	75-125
CHROMIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	59.7	15.8	39.7	mg/kg	110	75-125
LEAD, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	109.	7.95	99.3	mg/kg	102	75-125
SELENIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	97.5	<0.7	99.3	mg/kg	98	75-125
SILVER, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623MS	10.4	<0.4	9.93	mg/kg	105	75-125
Mercury	47629	21-APR-97	SB6-1-5	L9145-8	47629MS	0.583	<0.1	0.500	mg/kg	117	75-125

RPT NAME: gemmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

LCS DATA SUMMARY

Login/SDG Number: L9145S2

Analyte#	Batch ID	Date Analyzed	Lab ID	LCS Result	Open Value	Units	Res	Date	QC Limits
ARSENIC, TOTAL	47623	24-APR-97	47623LCSS	353.	349.	mg/kg	101		49-149
BARIIUM, TOTAL	47623	24-APR-97	47623LCSS	104.	111.	mg/kg	93		17-184.7
CADMIUM, TOTAL	47623	24-APR-97	47623LCSS	46.5	46.9	mg/kg	99		52-144
CHROMIUM, TOTAL	47623	24-APR-97	47623LCSS	126.	115.	mg/kg	110		54-141.7
LEAD, TOTAL	47623	24-APR-97	47623LCSS	50.0	52.4	mg/kg	95		53-142
SELENIUM, TOTAL	47623	24-APR-97	47623LCSS	190.	185.	mg/kg	103		52-149
SILVER, TOTAL	47623	24-APR-97	47623LCSS	165.	154.	mg/kg	107		45-146
ARSENIC, TOTAL	47623	24-APR-97	47623LCSS	0.493	0.500	mg/l	99		80-120
BARIIUM, TOTAL	47623	24-APR-97	47623LCSS	2.07	2.00	mg/l	103		80-120
CADMIUM, TOTAL	47623	24-APR-97	47623LCSS	0.0506	0.0500	mg/l	101		80-120
CHROMIUM, TOTAL	47623	24-APR-97	47623LCSS	0.213	0.200	mg/l	107		80-120
LEAD, TOTAL	47623	24-APR-97	47623LCSS	0.512	0.500	mg/l	102		80-120
SELENIUM, TOTAL	47623	24-APR-97	47623LCSS	0.473	0.500	mg/l	95		80-120
SILVER, TOTAL	47623	24-APR-97	47623LCSS	0.0514	0.0500	mg/l	103		80-120
Mercury	47629	21-APR-97	47629LCSS	13.9	13.1	mg/kg	106		48-156
Mercury	47629	21-APR-97	47629LCSS	0.000960	0.00100	mg/l	96		80-120

RPT NAME: genmetqc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9145S2

Analyte	Batch ID	Date Analyzed	Lab ID	MB Result	MDL	RDL	Units	Data Qual
ARSENIC, TOTAL	47623	24-APR-97	47623MB	<0.6	0.6	2.	mg/kg	U
BARIIUM, TOTAL	47623	24-APR-97	47623MB	0.2	0.2	40	mg/kg	B
CADMIUM, TOTAL	47623	24-APR-97	47623MB	<0.4	0.4	1.	mg/kg	U
CHROMIUM, TOTAL	47623	24-APR-97	47623MB	0.5	0.2	2.	mg/kg	B
LEAD, TOTAL	47623	24-APR-97	47623MB	<0.4	0.4	0.6	mg/kg	U
SELENIUM, TOTAL	47623	24-APR-97	47623MB	<0.8	0.8	1.	mg/kg	U
SILVER, TOTAL	47623	24-APR-97	47623MB	<0.4	0.4	2.	mg/kg	U
Mercury	47629	21-APR-97	47629MB	<0.1	0.1	0.1	mg/kg	U

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145S2

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	RPD Result	Units	RPD	Test Qual	RPD Limit
ARSENIC, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	4.09	mg/kg	9.5		20
BARIIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	238.	mg/kg	30.7	*	20
CADMIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	<0.4	mg/kg		b	20
CHROMIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	15.8	mg/kg	12.0		20
LEAD, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	7.95	mg/kg	10.4		20
SELENIUM, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	<0.7	mg/kg		b	20
SILVER, TOTAL	47623	24-APR-97	SB6-1-5	L9145-8	47623DUP	<0.4	mg/kg		b	20
Mercury	47629	21-APR-97	SB6-1-5	L9145-8	47629DUP	<0.1	mg/kg		b	20

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

* - Relative Percent Difference (RPD) for duplicate analysis exceeded acceptance limits.

b - The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-1S
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	11.4	0.6	2.	1	*	mg/kg	30-APR-97	L9145-26
BARIUM, TOTAL	6010	47626	1010	0.2	40	1	*	mg/kg	30-APR-97	L9145-26
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-26
CHROMIUM, TOTAL	6010	47626	21.4	0.2	2.	1		mg/kg	30-APR-97	L9145-26
LEAD, TOTAL	6010	47626	56.4	0.4	0.6	1		mg/kg	30-APR-97	L9145-26
SELENIUM, TOTAL	6010	47626	<4.	4.	5.	5	U	mg/kg	30-APR-97	L9145-26
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-26
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-26

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB4-1D
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	EDL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	5.3	0.6	2.	1	*	mg/kg	30-APR-97	L9145-27
BARIUM, TOTAL	6010	47626	246	0.2	40	1	*	mg/kg	30-APR-97	L9145-27
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-27
CHROMIUM, TOTAL	6010	47626	15.7	0.2	2.	1		mg/kg	30-APR-97	L9145-27
LEAD, TOTAL	6010	47626	18.4	0.4	0.6	1		mg/kg	30-APR-97	L9145-27
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-27
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-27
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-27

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-2S
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	FDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	10	0.6	2.	1	*	mg/kg	30-APR-97	L9145-28
BARIUM, TOTAL	6010	47626	558	0.2	40	1	*	mg/kg	30-APR-97	L9145-28
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-28
CHROMIUM, TOTAL	6010	47626	18.5	0.2	2.	1		mg/kg	30-APR-97	L9145-28
LEAD, TOTAL	6010	47626	51.8	0.4	0.6	1		mg/kg	30-APR-97	L9145-28
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-28
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-28
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-28

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB4-2D
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	3.5	0.6	2.	1	*	mg/kg	30-APR-97	L9145-29
BARIUM, TOTAL	6010	47626	179	0.2	40	1	*	mg/kg	30-APR-97	L9145-29
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-29
CHROMIUM, TOTAL	6010	47626	14.1	0.2	2.	1		mg/kg	30-APR-97	L9145-29
LEAD, TOTAL	6010	47626	9.8	0.4	0.6	1		mg/kg	30-APR-97	L9145-29
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-29
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-29
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-29

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB7-1-1
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	PDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	4.9	0.6	2.	1	*	mg/kg	30-APR-97	L9145-32
BARIUM, TOTAL	6010	47626	187	0.2	40	1	*	mg/kg	30-APR-97	L9145-32
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-32
CHROMIUM, TOTAL	6010	47626	19.3	0.2	2.	1		mg/kg	30-APR-97	L9145-32
LEAD, TOTAL	6010	47626	9.9	0.4	0.6	1		mg/kg	30-APR-97	L9145-32
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-32
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-32
MERCURY	7471	47630	<0.09	0.09	0.09	1	U	mg/kg	21-APR-97	L9145-32

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
 Project Name: KERR-MCGEE
 Project Desc: Misc.

Client Sample ID: SB4-3S
 Date Collected: 08-APR-97
 Matrix: Soil

SDG Number: L9145S3
 Date Received: 09-APR-97

Constituent	Method	Batch	Value	REL	REL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	17.4	0.6	2.	1	*	mg/kg	30-APR-97	L9145-30
BARIUM, TOTAL	6010	47626	1360	0.2	40	1	*	mg/kg	30-APR-97	L9145-30
CADMIUM, TOTAL	6010	47626	0.4	0.4	1.	1	B	mg/kg	30-APR-97	L9145-30
CHROMIUM, TOTAL	6010	47626	23	0.2	2.	1		mg/kg	30-APR-97	L9145-30
LEAD, TOTAL	6010	47626	141	0.4	0.6	1		mg/kg	30-APR-97	L9145-30
SELENIUM, TOTAL	6010	47626	<4.	4.	5.	5	U	mg/kg	30-APR-97	L9145-30
SILVER, TOTAL	6010	47626	0.6	0.4	2.	1	B	mg/kg	30-APR-97	L9145-30
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-30

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB4-3D
Date Collected: 08-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	3.9	0.6	2.	1	*	mg/kg	30-APR-97	L9145-31
BARIUM, TOTAL	6010	47626	161	0.2	40	1	*	mg/kg	30-APR-97	L9145-31
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-31
CHROMIUM, TOTAL	6010	47626	13	0.2	2.	1		mg/kg	30-APR-97	L9145-31
LEAD, TOTAL	6010	47626	7.9	0.4	0.6	1		mg/kg	30-APR-97	L9145-31
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-31
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-31
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-31

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-4S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	REL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	5.3	0.6	2.	1	*	mg/kg	30-APR-97	L9145-33
BARIUM, TOTAL	6010	47626	175	0.2	40	1	*	mg/kg	30-APR-97	L9145-33
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-33
CHROMIUM, TOTAL	6010	47626	13.1	0.2	2.	1		mg/kg	30-APR-97	L9145-33
LEAD, TOTAL	6010	47626	23	0.4	0.6	1		mg/kg	30-APR-97	L9145-33
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-33
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-33
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-33

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB4-8S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	14.6	0.6	2.	1	*	mg/kg	30-APR-97	L9145-34
BARIUM, TOTAL	6010	47626	360	0.2	40	1	*	mg/kg	30-APR-97	L9145-34
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9145-34
CHROMIUM, TOTAL	6010	47626	15.5	0.2	2.	1		mg/kg	30-APR-97	L9145-34
LEAD, TOTAL	6010	47626	83	0.4	0.6	1		mg/kg	30-APR-97	L9145-34
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9145-34
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9145-34
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9145-34

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9145S3

Analyte	MSHA ID	Date Analyzed	LAL ID	MB Result	MDL	RDL	Units	Data Qual
ARSENIC, TOTAL	47626	30-APR-97	47626MB	<0.6	0.6	2.	mg/kg	U
BARIUM, TOTAL	47626	30-APR-97	47626MB	<0.2	0.2	40	mg/kg	U
CADMIUM, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	1.	mg/kg	U
CHROMIUM, TOTAL	47626	30-APR-97	47626MB	0.5	0.2	2.	mg/kg	B
LEAD, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	0.6	mg/kg	U
SELENIUM, TOTAL	47626	30-APR-97	47626MB	<0.8	0.8	1.	mg/kg	U
SILVER, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	2.	mg/kg	U
Mercury	47630	21-APR-97	47630MB	<0.1	0.1	0.1	mg/kg	U

RPT NAME: genmetqc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145S3

Analyte	Batch ID	Date Analyzed	Client ID	YAL ID	Sample ID	RPD Permit	RPD Result	Units	RPD	Gen. Qual.	RPD Limit
ARSENIC, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	11.4	24.5	mg/kg	72.6	*	20
BARIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	1010	1450	mg/kg	35.6	*	20
CADMIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<0.4	<0.4	mg/kg		b	20
CHROMIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	21.4	19.1	mg/kg	11.0		20
LEAD, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	56.4	52.0	mg/kg	8.1		20
SELENIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<4.	<4.	mg/kg		b	20
SILVER, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<0.4	<0.4	mg/kg		b	20
Mercury	47630	21-APR-97	SB4-1S	L9145-26	47630DUP	<0.1	<0.1	mg/kg		b	20

RPT NAME: genmetgc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

* - Relative Percent Difference (RPD) for duplicate analysis exceeded acceptance limits.

b - The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9145S3

Analyte	Batch ID	Date Analyzed	Client ID	YLN ID	Sample ID	MS Permit	SDR Permit	SDR Value	Units	Rec	QA/QC Limit
ARSENIC, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	95.8	11.4	96.4	mg/kg	87	75-125
BARIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	1310	1010	386.	mg/kg	78	75-125
CADMIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	9.35	<0.4	9.64	mg/kg	97	75-125
CHROMIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	54.6	21.4	38.6	mg/kg	86	75-125
LEAD, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	139.	56.4	96.4	mg/kg	85	75-125
SELENIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	106.	<4.	96.4	mg/kg	110	75-125
SILVER, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	9.57	<0.4	9.64	mg/kg	99	75-125
Mercury	47630	21-APR-97	SB4-1S	L9145-26	47630MS	0.502	<0.1	0.476	mg/kg	105	75-125

UPT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

AS Laboratories, Inc.

CS DATA SUMMARY

ogin/SDG Number: L9145S3

Analyte	Batch ID	Date Analyzed	LAL ID	ICV Permit	Green Value	Units	Res	Date Qual	DC Lab
ARSENIC, TOTAL	47626	30-APR-97	47626LCSS	343.	349.	mg/kg	98		49-149
BARIUM, TOTAL	47626	30-APR-97	47626LCSS	99.7	111.	mg/kg	90		17-184.7
CADMIUM, TOTAL	47626	30-APR-97	47626LCSS	48.3	46.9	mg/kg	103		52-144
CHROMIUM, TOTAL	47626	30-APR-97	47626LCSS	123.	115.	mg/kg	107		54-141.7
LEAD, TOTAL	47626	30-APR-97	47626LCSS	52.0	52.4	mg/kg	99		53-142
SELENIUM, TOTAL	47626	30-APR-97	47626LCSS	183.	185.	mg/kg	99		52-149
SILVER, TOTAL	47626	30-APR-97	47626LCSS	171.	154.	mg/kg	111		45-146
ARSENIC, TOTAL	47626	30-APR-97	47626LCSM	0.470	0.500	mg/l	94		80-120
BARIUM, TOTAL	47626	30-APR-97	47626LCSM	1.97	2.00	mg/l	99		80-120
CADMIUM, TOTAL	47626	30-APR-97	47626LCSM	0.0490	0.0500	mg/l	98		80-120
CHROMIUM, TOTAL	47626	30-APR-97	47626LCSM	0.204	0.200	mg/l	102		80-120
LEAD, TOTAL	47626	30-APR-97	47626LCSM	0.493	0.500	mg/l	99		80-120
SELENIUM, TOTAL	47626	30-APR-97	47626LCSM	0.439	0.500	mg/l	88		80-120
SILVER, TOTAL	47626	30-APR-97	47626LCSM	0.0491	0.0500	mg/l	98		80-120
Mercury	47630	21-APR-97	47630LCSS	16.6	13.1	mg/kg	126		48-156
Mercury	47630	21-APR-97	47630LCSM	0.000935	0.00100	mg/l	94		80-120

PT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB2-1S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	1030	0.8	2.	1	*	mg/kg	19-APR-97	L9145-24

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Lab ID	MR Result	MDL	MDL	Units	Notes
CHROMIUM	47620	19-APR-97	47620MB	<0.8	0.8	2.	mg/kg	U

REPORT NAME: genmetqc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	RPD Result	RPD Result	Units	RPD Limit	RPD Limit
CHROMIUM	47620	19-APR-97	SB2-IS	L9145-24	47620DUP	1030	1380	mg/kg	29.7	20

RPT NAME: gemnetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

* - Relative Percent Difference (RPD) for duplicate analysis exceeded acceptance limits.

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SWP Result	Labon Value	Units	Trace	SP	CC Limit
CHROMIUM	47620	19-APR-97	SB2-1S	L9145-24	47620MS	1240	1030	40.0	mg/kg	Y	529	75-125

UPT NAME: gemmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

3 - The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.

LAS Laboratories, Inc.

LCS DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Lab ID	LCS Result	Known Value	Units	Rec	Date Qual	CC Min/Sec
CHROMIUM	47620	19-APR-97	47620LCSS	122.	115.	mg/kg	106		54-141.7
CHROMIUM	47620	19-APR-97	47620LCSM	0.207	0.200	mg/l	104		80-120

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

METALS

WATER

11/11/11
11/11/11
11/11/11

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: M97
Date Collected: 09-APR-97
Matrix: Water

SDG Number: L9145W
Date Received: 09-APR-97

Constituent	Method	Batch	Value	MDL	RDL	DLS	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47621	0.124	0.003	0.01	1		mg/l	21-APR-97	L9145-7

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9145W

Analyte	Batch ID	Date Analyzed	LAL ID	MB Result	MDL	MSL	Units	Out
ARSENIC, TOTAL	47621	21-APR-97	47621MB	<0.003	0.003	0.01	mg/l	U
BARIUM, TOTAL	47621	21-APR-97	47621MB	<0.001	0.001	0.2	mg/l	U
CADMIUM, TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.005	mg/l	U
CHROMIUM, TOTAL	47621	21-APR-97	47621MB	<0.001	0.001	0.01	mg/l	U
LEAD, TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.003	mg/l	U
SELENIUM, TOTAL	47621	21-APR-97	47621MB	<0.004	0.004	0.005	mg/l	U
SILVER, TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.01	mg/l	U
MERCURY, TOTAL	47628	21-APR-97	47628MB	<0.0002	0.0002	0.0002	mg/l	U

PT NAME: gemmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

VAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145W

Analyte	Batch ID	Date Analyzed	Client ID	Lab ID	Sample ID	Imp. Method	CVF	Units	RPD	RPD Limit
ARSENIC, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.003	0.00335	mg/l	b	20
BARIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.001	<0.001	mg/l	b	20
CADMIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l	b	20
CHROMIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	0.00226	0.00143	mg/l	b	20
LEAD, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l	b	20
SELENIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.004	<0.004	mg/l	b	20
SILVER, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l	b	20
MERCURY, TOTAL	47628	21-APR-97	ER-2	L9170-2	47628DUP	<0.0002	<0.0002	mg/l	b	20

PT NAME: genmetgc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

- The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9145W

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SPR Result	Known Value	Units	Rec	MSL Limit
ARSENIC, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.606	<0.003	0.500	mg/l	121	75-125
BARIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	2.17	<0.001	2.00	mg/l	108	75-125
CADMIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.0577	<0.002	0.0500	mg/l	115	75-125
CHROMIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.244	0.00226	0.200	mg/l	121	75-125
LEAD, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.629	<0.002	0.500	mg/l	126	75-125
SELENIUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.592	<0.004	0.500	mg/l	118	75-125
SILVER, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.0567	<0.002	0.0500	mg/l	113	75-125
MERCURY, TOTAL	47628	21-APR-97	ER-2	L9170-2	47628MS	0.000963	<0.0002	0.00100	mg/l	96	75-125

PT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

- Matrix Spike/Matrix Spike Duplicate recovery exceeded acceptance limits.

LAS Laboratories, Inc.

CS DATA SUMMARY

ogin/SDG Number: L9145W

Analyte	Batch ID	Date Analyzed	LAL ID	LCS Result	Known Value	Units	Rec	Date	CS Limits
ARSENIC, TOTAL	47621	21-APR-97	47621LCS	0.526	0.500	mg/l	105		80-120
BARIUM, TOTAL	47621	21-APR-97	47621LCS	2.07	2.00	mg/l	103		80-120
CADMIUM, TOTAL	47621	21-APR-97	47621LCS	0.0525	0.0500	mg/l	105		80-120
CHROMIUM, TOTAL	47621	21-APR-97	47621LCS	0.209	0.200	mg/l	104		80-120
LEAD, TOTAL	47621	21-APR-97	47621LCS	0.512	0.500	mg/l	102		80-120
SELENIUM, TOTAL	47621	21-APR-97	47621LCS	0.533	0.500	mg/l	107		80-120
SILVER, TOTAL	47621	21-APR-97	47621LCS	0.0528	0.0500	mg/l	106		80-120
MERCURY, TOTAL	47628	21-APR-97	47628LCS	0.000962	0.00100	mg/l	96		80-120

PT NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

**EPA METHOD 8240 WITH CAPILLARY
CHROMATOGRAPHY (Volatile Organics)**

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: M97
Date Collected: 09-APR-97
Date Analyzed: 22-APR-97
Matrix: Water

LAL Sample ID: L9145-3
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042297-8260-D-1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	117%	84-122
Toluene-d8	108%	87-117
Bromofluorobenzene	102%	83-118

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	3.1	10.	JB
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	18.	5.0	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB6-1-5	LAL Sample ID: L9145-8
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	117%	77-127
Toluene-d8	107%	84-120
Bromofluorobenzene	105%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	REL ug/kg	QUALITY (S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	9.8	10.	J
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID:	SB6-1-10	LAL Sample ID:	L9145-9
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Analytical Batch ID:	042297-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	110%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	95%	78-125

CONSTITUENT	CAS No.	RESULT ug/kg	PQL ug/kg	DATA MULTIPLIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB6-1-15
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-10
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.02

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	104%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	98%	78-125

CONSTITUENT	LAB NO.	RESULT ng/kg	PLC ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.1	5.1	
Vinyl Chloride	75-01-4	<5.1	5.1	
Bromomethane	74-83-9	<5.1	5.1	
Chloroethane	75-00-3	<5.1	5.1	
Trichlorofluoromethane	75-69-4	<5.1	5.1	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.1	5.1	
Carbon Disulfide	75-15-0	<5.1	5.1	
Methylene Chloride	75-09-2	<5.1	5.1	
trans-1,2-Dichloroethene	156-60-5	<5.1	5.1	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.1	5.1	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.1	5.1	
Chloroform	67-66-3	<5.1	5.1	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.1	5.1	
Carbon tetrachloride	56-23-5	<5.1	5.1	
1,2-Dichloroethane	107-06-2	<5.1	5.1	
Benzene	71-43-2	<5.1	5.1	
Trichloroethene	79-01-6	<5.1	5.1	
1,2-Dichloropropane	78-87-5	<5.1	5.1	
Bromodichloromethane	75-27-4	<5.1	5.1	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.1	5.1	
Toluene	108-88-3	<5.1	5.1	
trans-1,3-Dichloropropene	10061-02-6	<5.1	5.1	
1,1,2-Trichloroethane	79-00-5	<5.1	5.1	
Tetrachloroethene	127-18-4	<5.1	5.1	
Dibromochloromethane	124-48-1	<5.1	5.1	
Chlorobenzene	108-90-7	<5.1	5.1	
Ethylbenzene	100-41-4	<5.1	5.1	
m,p-Xylene	136777-61-2	<5.1	5.1	
o-Xylene	95-47-6	<5.1	5.1	
Styrene	100-42-5	<5.1	5.1	
Bromoform	75-25-2	<5.1	5.1	
1,1,2,2-Tetrachloroethane	79-34-5	<5.1	5.1	
1,3-Dichlorobenzene	541-73-1	<5.1	5.1	
1,4-Dichlorobenzene	106-46-7	<5.1	5.1	
1,2-Dichlorobenzene	95-50-1	<5.1	5.1	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB6-2-5	LAL Sample ID: L9145-11
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-D1
Percent Moisture: N/A	Preparation Dilution: 1.02

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	106%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	94%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	REL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.1	5.1	
Vinyl Chloride	75-01-4	<5.1	5.1	
Bromomethane	74-83-9	<5.1	5.1	
Chloroethane	75-00-3	<5.1	5.1	
Trichlorofluoromethane	75-69-4	<5.1	5.1	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.1	5.1	
Carbon Disulfide	75-15-0	<5.1	5.1	
Methylene Chloride	75-09-2	<5.1	5.1	
trans-1,2-Dichloroethene	156-60-5	<5.1	5.1	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.1	5.1	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.1	5.1	
Chloroform	67-66-3	<5.1	5.1	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.1	5.1	
Carbon tetrachloride	56-23-5	<5.1	5.1	
1,2-Dichloroethane	107-06-2	<5.1	5.1	
Benzene	71-43-2	<5.1	5.1	
Trichloroethene	79-01-6	<5.1	5.1	
1,2-Dichloropropane	78-87-5	<5.1	5.1	
Bromodichloromethane	75-27-4	<5.1	5.1	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.1	5.1	
Toluene	108-88-3	<5.1	5.1	
trans-1,3-Dichloropropene	10061-02-6	<5.1	5.1	
1,1,2-Trichloroethane	79-00-5	<5.1	5.1	
Tetrachloroethene	127-18-4	<5.1	5.1	
Dibromochloromethane	124-48-1	<5.1	5.1	
Chlorobenzene	108-90-7	<5.1	5.1	
Ethylbenzene	100-41-4	<5.1	5.1	
m,p-Xylene	136777-61-2	<5.1	5.1	
o-Xylene	95-47-6	<5.1	5.1	
Styrene	100-42-5	<5.1	5.1	
Bromoform	75-25-2	<5.1	5.1	
1,1,2,2-Tetrachloroethane	79-34-5	<5.1	5.1	
1,3-Dichlorobenzene	541-73-1	<5.1	5.1	
1,4-Dichlorobenzene	106-46-7	<5.1	5.1	
1,2-Dichlorobenzene	95-50-1	<5.1	5.1	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB6-2-10
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-12
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	105%	77-127
Toluene-d8	102%	84-120
Bromofluorobenzene	96%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	POL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB6-2-15	LAL Sample ID: L9145-14
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-D1
Percent Moisture: N/A	Preparation Dilution: 1.02

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	105%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	96%	78-125

CONSTITUENT	CAL. NO.	RESULT ug/kg	PQL ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.1	5.1	
Vinyl Chloride	75-01-4	<5.1	5.1	
Bromomethane	74-83-9	<5.1	5.1	
Chloroethane	75-00-3	<5.1	5.1	
Trichlorofluoromethane	75-69-4	<5.1	5.1	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.1	5.1	
Carbon Disulfide	75-15-0	<5.1	5.1	
Methylene Chloride	75-09-2	<5.1	5.1	
trans-1,2-Dichloroethene	156-60-5	<5.1	5.1	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.1	5.1	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.1	5.1	
Chloroform	67-66-3	<5.1	5.1	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.1	5.1	
Carbon tetrachloride	56-23-5	<5.1	5.1	
1,2-Dichloroethane	107-06-2	<5.1	5.1	
Benzene	71-43-2	<5.1	5.1	
Trichloroethene	79-01-6	<5.1	5.1	
1,2-Dichloropropane	78-87-5	<5.1	5.1	
Bromodichloromethane	75-27-4	<5.1	5.1	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.1	5.1	
Toluene	108-88-3	<5.1	5.1	
trans-1,3-Dichloropropene	10061-02-6	<5.1	5.1	
1,1,2-Trichloroethane	79-00-5	<5.1	5.1	
Tetrachloroethene	127-18-4	<5.1	5.1	
Dibromochloromethane	124-48-1	<5.1	5.1	
Chlorobenzene	108-90-7	<5.1	5.1	
Ethylbenzene	100-41-4	<5.1	5.1	
m,p-Xylene	136777-61-2	<5.1	5.1	
o-Xylene	95-47-6	<5.1	5.1	
Styrene	100-42-5	<5.1	5.1	
Bromoform	75-25-2	<5.1	5.1	
1,1,2,2-Tetrachloroethane	79-34-5	<5.1	5.1	
1,3-Dichlorobenzene	541-73-1	<5.1	5.1	
1,4-Dichlorobenzene	106-46-7	<5.1	5.1	
1,2-Dichlorobenzene	95-50-1	<5.1	5.1	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-5S
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-15
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	106%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	95%	78-125

CONSTITUENT	CAS NO	RESULT ng/kg	PQL ng/kg	DATE QUALIFIED(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-7S	LAL Sample ID: L9145-16
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-D1
Percent Moisture: N/A	Preparation Dilution: 0.980

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	101%	84-120
Bromofluorobenzene	88%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<4.9	4.9	
Vinyl Chloride	75-01-4	<4.9	4.9	
Bromomethane	74-83-9	<4.9	4.9	
Chloroethane	75-00-3	<4.9	4.9	
Trichlorofluoromethane	75-69-4	<4.9	4.9	
Acetone	67-64-1	<9.8	9.8	
1,1-Dichloroethene	75-35-4	<4.9	4.9	
Carbon Disulfide	75-15-0	<4.9	4.9	
Methylene Chloride	75-09-2	<4.9	4.9	
trans-1,2-Dichloroethene	156-60-5	<4.9	4.9	
Vinyl Acetate	108-05-4	<9.8	9.8	
1,1-Dichloroethane	75-34-3	<4.9	4.9	
2-Butanone	78-93-3	<9.8	9.8	
cis-1,2-Dichloroethene	156-59-2	<4.9	4.9	
Chloroform	67-66-3	<4.9	4.9	
2-Hexanone	591-78-6	<9.8	9.8	
1,1,1-Trichloroethane	71-55-6	<4.9	4.9	
Carbon tetrachloride	56-23-5	<4.9	4.9	
1,2-Dichloroethane	107-06-2	<4.9	4.9	
Benzene	71-43-2	<4.9	4.9	
Trichloroethene	79-01-6	<4.9	4.9	
1,2-Dichloropropane	78-87-5	<4.9	4.9	
Bromodichloromethane	75-27-4	<4.9	4.9	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<9.8	9.8	
cis-1,3-Dichloropropene	10061-01-5	<4.9	4.9	
Toluene	108-88-3	<4.9	4.9	
trans-1,3-Dichloropropene	10061-02-6	<4.9	4.9	
1,1,2-Trichloroethane	79-00-5	<4.9	4.9	
Tetrachloroethene	127-18-4	<4.9	4.9	
Dibromochloromethane	124-48-1	<4.9	4.9	
Chlorobenzene	108-90-7	<4.9	4.9	
Ethylbenzene	100-41-4	<4.9	4.9	
m,p-Xylene	136777-61-2	<4.9	4.9	
o-Xylene	95-47-6	<4.9	4.9	
Styrene	100-42-5	<4.9	4.9	
Bromoform	75-25-2	<4.9	4.9	
1,1,2,2-Tetrachloroethane	79-34-5	<4.9	4.9	
1,3-Dichlorobenzene	541-73-1	<4.9	4.9	
1,4-Dichlorobenzene	106-46-7	<4.9	4.9	
1,2-Dichlorobenzene	95-50-1	<4.9	4.9	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-6S	LAL Sample ID: L9145-17
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-D1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	96%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-4D
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-18
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 0.980

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	93%	78-125

CONSTITUENT	CAS NO	RESULT ng/kg	ML ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<4.9	4.9	
Vinyl Chloride	75-01-4	<4.9	4.9	
Bromomethane	74-83-9	<4.9	4.9	
Chloroethane	75-00-3	<4.9	4.9	
Trichlorofluoromethane	75-69-4	<4.9	4.9	
Acetone	67-64-1	<9.8	9.8	
1,1-Dichloroethene	75-35-4	<4.9	4.9	
Carbon Disulfide	75-15-0	<4.9	4.9	
Methylene Chloride	75-09-2	<4.9	4.9	
trans-1,2-Dichloroethene	156-60-5	<4.9	4.9	
Vinyl Acetate	108-05-4	<9.8	9.8	
1,1-Dichloroethane	75-34-3	<4.9	4.9	
2-Butanone	78-93-3	<9.8	9.8	
cis-1,2-Dichloroethene	156-59-2	<4.9	4.9	
Chloroform	67-66-3	<4.9	4.9	
2-Hexanone	591-78-6	<9.8	9.8	
1,1,1-Trichloroethane	71-55-6	<4.9	4.9	
Carbon tetrachloride	56-23-5	<4.9	4.9	
1,2-Dichloroethane	107-06-2	<4.9	4.9	
Benzene	71-43-2	<4.9	4.9	
Trichloroethene	79-01-6	<4.9	4.9	
1,2-Dichloropropane	78-87-5	<4.9	4.9	
Bromodichloromethane	75-27-4	<4.9	4.9	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<9.8	9.8	
cis-1,3-Dichloropropene	10061-01-5	<4.9	4.9	
Toluene	108-88-3	<4.9	4.9	
trans-1,3-Dichloropropene	10061-02-6	<4.9	4.9	
1,1,2-Trichloroethane	79-00-5	<4.9	4.9	
Tetrachloroethene	127-18-4	<4.9	4.9	
Dibromochloromethane	124-48-1	<4.9	4.9	
Chlorobenzene	108-90-7	<4.9	4.9	
Ethylbenzene	100-41-4	<4.9	4.9	
m,p-Xylene	136777-61-2	<4.9	4.9	
o-Xylene	95-47-6	<4.9	4.9	
Styrene	100-42-5	<4.9	4.9	
Bromoform	75-25-2	<4.9	4.9	
1,1,2,2-Tetrachloroethane	79-34-5	<4.9	4.9	
1,3-Dichlorobenzene	541-73-1	<4.9	4.9	
1,4-Dichlorobenzene	106-46-7	<4.9	4.9	
1,2-Dichlorobenzene	95-50-1	<4.9	4.9	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID:	SB4-4D-DUP	LAL Sample ID:	L9145-19
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	19-APR-97	Analytical Dilution:	1
Matrix:	Soil	Analytical Batch ID:	041997-8260-D1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	101%	84-120
Bromofluorobenzene	90%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-8D
Date Collected: 09-APR-97
Date Analyzed: 21-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-20
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042197-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	113%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	93%	78-125

CONSTITUENT	CON. NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-7D	LAL Sample ID: L9145-21
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	113%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	106%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-6D	LAL Sample ID: L9145-22
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	114%	77-127
Toluene-d8	107%	84-120
Bromofluorobenzene	107%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	7.0	10.	J
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-5D	LAL Sample ID: L9145-23
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	112%	77-127
Toluene-d8	106%	84-120
Bromofluorobenzene	102%	78-125

CONSTITUENT	CAS NO	RESULT ug/kg	EQC ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	6.8	10.	J
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: S7-1S	LAL Sample ID: L9145-25
Date Collected: 08-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	120%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	87%	78-125

CONSTITUENT	CAS No.	RESULT ug/kg	EQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	1.1	5.0	J
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-1S
Date Collected: 08-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-26
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	117%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	98%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID:	SB4-1D	LAL Sample ID:	L9145-27
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	19-APR-97	Analytical Dilution:	1
Matrix:	Soil	Analytical Batch ID:	041997-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	120%	77-127
Toluene-d8	107%	84-120
Bromofluorobenzene	102%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	POL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-2S	LAL Sample ID: L9145-28
Date Collected: 08-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	116%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	90%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-2D	LAL Sample ID: L9145-29
Date Collected: 08-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Matrix: Soil	Analytical Batch ID: 041997-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	120%	77-127
Toluene-d8	107%	84-120
Bromofluorobenzene	97%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	11.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-3S
Date Collected: 08-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-30
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	117%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	88%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-3D
Date Collected: 08-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-31
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	116%	77-127
Toluene-d8	107%	84-120
Bromofluorobenzene	102%	78-125

CONSTITUENT	CAL. NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB7-1-1
Date Collected: 08-APR-97
Date Analyzed: 19-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-32
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	121%	77-127
Toluene-d8	109%	84-120
Bromofluorobenzene	107%	78-125

CONSTITUENT	QID NO.	RESULT ug/kg	POC ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	13.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	1.6	5.0	J
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID:	SB4-4S	LAL Sample ID:	L9145-33
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	21-APR-97	Analytical Dilution:	1
Matrix:	Soil	Analytical Batch ID:	042197-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	118%	77-127
Toluene-d8	106%	84-120
Bromofluorobenzene	100%	78-125

CONSTITUENT	CAS No.	RESULT ng/kg	PQL ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: SB4-8S
Date Collected: 09-APR-97
Date Analyzed: 21-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-34
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042197-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	119%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	101%	78-125

CONSTITUENT	CAS No.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	8.7	10.	J
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	2.4	5.0	J
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS
8240 VOLATILES

Client Sample ID: TRIP BLANK
Date Collected: 09-APR-97
Date Analyzed: 22-APR-97
Matrix: Soil
Percent Moisture: N/A

LAL Sample ID: L9145-35
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042297-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	104%	78-125

CONSTITUENT	CAS NO.	RESULT ng/kg	PLC ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Analyzed: 19-APR-97
 Percent Moisture: N/A

LAL Sample ID: 47729MB
 Date Received: N/A
 Analytical Dilution: 1
 Analytical Batch ID: 041997-8260-D1
 Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	103%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	98%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	POL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Analyzed: 22-APR-97

LAL Sample ID: 47819MB
 Date Received: N/A
 Analytical Dilution: 1
 Analytical Batch ID: 042297-8260-D-1
 Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	111%	84-122
Toluene-d8	107%	87-117
Bromofluorobenzene	100%	83-118

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	4.4	10.	J
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Analyzed: 19-APR-97
 Percent Moisture: N/A

LAL Sample ID: 47728MB
 Date Received: N/A
 Analytical Dilution: 1
 Analytical Batch ID: 041997-8260-E1
 Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	113%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	96%	78-125

CONSTITUENT	CAS NO.	RESULT ug/Lg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Analyzed: 21-APR-97
 Percent Moisture: N/A

LAL Sample ID: 47748MB
 Date Received: N/A
 Analytical Dilution: 1
 Analytical Batch ID: 042197-8260-E1
 Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	95%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

GC/MS FOR VOLATILE ORGANICS

Client Sample ID:	Method Blank	LAL Sample ID:	47805MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	22-APR-97	Analytical Dilution:	1
		Analytical Batch ID:	042297-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	111%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	102%	78-125

CONSTITUENT	CBS NO.	RESULT ug/kg	FOI ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	<5.0	5.0	
Vinyl Chloride	75-01-4	<5.0	5.0	
Bromomethane	74-83-9	<5.0	5.0	
Chloroethane	75-00-3	<5.0	5.0	
Trichlorofluoromethane	75-69-4	<5.0	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	<5.0	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	<5.0	5.0	
trans-1,2-Dichloroethene	156-60-5	<5.0	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	<5.0	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	<5.0	5.0	
Chloroform	67-66-3	<5.0	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	<5.0	5.0	
Carbon tetrachloride	56-23-5	<5.0	5.0	
1,2-Dichloroethane	107-06-2	<5.0	5.0	
Benzene	71-43-2	<5.0	5.0	
Trichloroethene	79-01-6	<5.0	5.0	
1,2-Dichloropropane	78-87-5	<5.0	5.0	
Bromodichloromethane	75-27-4	<5.0	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	<5.0	5.0	
Toluene	108-88-3	<5.0	5.0	
trans-1,3-Dichloropropene	10061-02-6	<5.0	5.0	
1,1,2-Trichloroethane	79-00-5	<5.0	5.0	
Tetrachloroethene	127-18-4	<5.0	5.0	
Dibromochloromethane	124-48-1	<5.0	5.0	
Chlorobenzene	108-90-7	<5.0	5.0	
Ethylbenzene	100-41-4	<5.0	5.0	
m,p-Xylene	136777-61-2	<5.0	5.0	
o-Xylene	95-47-6	<5.0	5.0	
Styrene	100-42-5	<5.0	5.0	
Bromoform	75-25-2	<5.0	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	<5.0	5.0	
1,3-Dichlorobenzene	541-73-1	<5.0	5.0	
1,4-Dichlorobenzene	106-46-7	<5.0	5.0	
1,2-Dichlorobenzene	95-50-1	<5.0	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB4-4D-DUP
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Percent Moisture: N/A

LAL Sample ID: 47729MS
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	103%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	91%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	65.	5.0	
Vinyl Chloride	75-01-4	74.	5.0	
Bromomethane	74-83-9	220	5.0	E
Chloroethane	75-00-3	250	5.0	E
Trichlorofluoromethane	75-69-4	130	5.0	
Acetone	67-64-1	6.9	10.	J
1,1-Dichloroethene	75-35-4	58.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	54.	5.0	
trans-1,2-Dichloroethene	156-60-5	50.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	54.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	56.	5.0	
Chloroform	67-66-3	54.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	54.	5.0	
Carbon tetrachloride	56-23-5	52.	5.0	
1,2-Dichloroethane	107-06-2	51.	5.0	
Benzene	71-43-2	49.	5.0	
Trichloroethene	79-01-6	54.	5.0	
1,2-Dichloropropane	78-87-5	49.	5.0	
Bromodichloromethane	75-27-4	49.	5.0	
2-Chloroethylvinylether	110-75-8	210	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	43.	5.0	
Toluene	108-88-3	48.	5.0	
trans-1,3-Dichloropropene	10061-02-6	43.	5.0	
1,1,2-Trichloroethane	79-00-5	48.	5.0	
Tetrachloroethene	127-18-4	52.	5.0	
Dibromochloromethane	124-48-1	49.	5.0	
Chlorobenzene	108-90-7	51.	5.0	
Ethylbenzene	100-41-4	52.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	53.	5.0	
Styrene	100-42-5	48.	5.0	
Bromoform	75-25-2	59.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	44.	5.0	
1,3-Dichlorobenzene	541-73-1	53.	5.0	
1,4-Dichlorobenzene	106-46-7	52.	5.0	
1,2-Dichlorobenzene	95-50-1	53.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB4-4D-DUP	LAL Sample ID: 47729MSD
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 19-APR-97	Analytical Dilution: 1
Percent Moisture: N/A	Analytical Batch ID: 041997-8260-D1
	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	100%	77-127
Toluene-d8	102%	84-120
Bromofluorobenzene	87%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	REL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	71.	5.0	
Vinyl Chloride	75-01-4	81.	5.0	
Bromomethane	74-83-9	270	5.0	E
Chloroethane	75-00-3	290	5.0	E
Trichlorofluoromethane	75-69-4	140	5.0	
Acetone	67-64-1	6.1	10.	J
1,1-Dichloroethene	75-35-4	63.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	59.	5.0	
trans-1,2-Dichloroethene	156-60-5	54.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	58.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	60.	5.0	
Chloroform	67-66-3	58.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	59.	5.0	
Carbon tetrachloride	56-23-5	58.	5.0	
1,2-Dichloroethane	107-06-2	54.	5.0	
Benzene	71-43-2	54.	5.0	
Trichloroethene	79-01-6	61.	5.0	
1,2-Dichloropropane	78-87-5	53.	5.0	
Bromodichloromethane	75-27-4	53.	5.0	
2-Chloroethylvinylether	110-75-8	220	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	48.	5.0	
Toluene	108-88-3	53.	5.0	
trans-1,3-Dichloropropene	10061-02-6	48.	5.0	
1,1,2-Trichloroethane	79-00-5	52.	5.0	
Tetrachloroethene	127-18-4	58.	5.0	
Dibromochloromethane	124-48-1	55.	5.0	
Chlorobenzene	108-90-7	56.	5.0	
Ethylbenzene	100-41-4	56.	5.0	
m,p-Xylene	136777-61-2	110	5.0	
o-Xylene	95-47-6	58.	5.0	
Styrene	100-42-5	55.	5.0	
Bromoform	75-25-2	57.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	40.	5.0	
1,3-Dichlorobenzene	541-73-1	52.	5.0	
1,4-Dichlorobenzene	106-46-7	50.	5.0	
1,2-Dichlorobenzene	95-50-1	51.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB6-1-5	LAL Sample ID: 47748MS
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	111%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	106%	78-125

CONSTITUENT	CAS NO.	RESULT ng/kg	PQL ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	61.	5.0	
Vinyl Chloride	75-01-4	63.	5.0	
Bromomethane	74-83-9	90.	5.0	
Chloroethane	75-00-3	93.	5.0	
Trichlorofluoromethane	75-69-4	66.	5.0	
Acetone	67-64-1	13.	10.	
1,1-Dichloroethene	75-35-4	59.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	55.	5.0	
trans-1,2-Dichloroethene	156-60-5	54.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	57.	5.0	
2-Butanone	78-93-3	4.8	10.	J
cis-1,2-Dichloroethene	156-59-2	60.	5.0	
Chloroform	67-66-3	58.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	59.	5.0	
Carbon tetrachloride	56-23-5	50.	5.0	
1,2-Dichloroethane	107-06-2	52.	5.0	
Benzene	71-43-2	51.	5.0	
Trichloroethene	79-01-6	60.	5.0	
1,2-Dichloropropane	78-87-5	52.	5.0	
Bromodichloromethane	75-27-4	52.	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	50.	5.0	
Toluene	108-88-3	51.	5.0	
trans-1,3-Dichloropropene	10061-02-6	50.	5.0	
1,1,2-Trichloroethane	79-00-5	53.	5.0	
Tetrachloroethene	127-18-4	48.	5.0	
Dibromochloromethane	124-48-1	48.	5.0	
Chlorobenzene	108-90-7	49.	5.0	
Ethylbenzene	100-41-4	51.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	51.	5.0	
Styrene	100-42-5	50.	5.0	
Bromoform	75-25-2	49.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	36.	5.0	
1,3-Dichlorobenzene	541-73-1	47.	5.0	
1,4-Dichlorobenzene	106-46-7	47.	5.0	
1,2-Dichlorobenzene	95-50-1	48.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB6-1-5	LAL Sample ID: 47748MSD
Date Collected: 09-APR-97	Date Received: 09-APR-97
Date Analyzed: 21-APR-97	Analytical Dilution: 1
Percent Moisture: N/A	Analytical Batch ID: 042197-8260-E1
	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	113%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	105%	78-125

CONSTITUENT	CAN NO	RESULT ng/kg	QCL ng/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	67.	5.0	
Vinyl Chloride	75-01-4	70.	5.0	
Bromomethane	74-83-9	98.	5.0	
Chloroethane	75-00-3	99.	5.0	
Trichlorofluoromethane	75-69-4	69.	5.0	
Acetone	67-64-1	8.9	10.	J
1,1-Dichloroethene	75-35-4	63.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	61.	5.0	
trans-1,2-Dichloroethene	156-60-5	59.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	65.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	67.	5.0	
Chloroform	67-66-3	65.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	64.	5.0	
Carbon tetrachloride	56-23-5	52.	5.0	
1,2-Dichloroethane	107-06-2	56.	5.0	
Benzene	71-43-2	53.	5.0	
Trichloroethene	79-01-6	61.	5.0	
1,2-Dichloropropane	78-87-5	55.	5.0	
Bromodichloromethane	75-27-4	54.	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	51.	5.0	
Toluene	108-88-3	53.	5.0	
trans-1,3-Dichloropropene	10061-02-6	51.	5.0	
1,1,2-Trichloroethane	79-00-5	56.	5.0	
Tetrachloroethene	127-18-4	49.	5.0	
Dibromochloromethane	124-48-1	51.	5.0	
Chlorobenzene	108-90-7	52.	5.0	
Ethylbenzene	100-41-4	53.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	52.	5.0	
Styrene	100-42-5	52.	5.0	
Bromoform	75-25-2	50.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	38.	5.0	
1,3-Dichlorobenzene	541-73-1	48.	5.0	
1,4-Dichlorobenzene	106-46-7	47.	5.0	
1,2-Dichlorobenzene	95-50-1	48.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 19-APR-97
Percent Moisture: N/A

LAL Sample ID: 47729LCS
Date Received: N/A
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	103%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	97%	78-125

CONSTITUENT	CAS NO.	RESULT UG/L	REL PPM	DATA QUALIFIER(S)
Chloromethane	74-87-3	62.	5.0	
Vinyl Chloride	75-01-4	63.	5.0	
Bromomethane	74-83-9	53.	5.0	
Chloroethane	75-00-3	58.	5.0	
Trichlorofluoromethane	75-69-4	100	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	53.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	50.	5.0	
trans-1,2-Dichloroethene	156-60-5	48.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	50.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	54.	5.0	
Chloroform	67-66-3	49.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	48.	5.0	
Carbon tetrachloride	56-23-5	47.	5.0	
1,2-Dichloroethane	107-06-2	47.	5.0	
Benzene	71-43-2	50.	5.0	
Trichloroethene	79-01-6	48.	5.0	
1,2-Dichloropropane	78-87-5	49.	5.0	
Bromodichloromethane	75-27-4	46.	5.0	
2-Chloroethylvinylether	110-75-8	200	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	47.	5.0	
Toluene	108-88-3	49.	5.0	
trans-1,3-Dichloropropene	10061-02-6	46.	5.0	
1,1,2-Trichloroethane	79-00-5	47.	5.0	
Tetrachloroethene	127-18-4	48.	5.0	
Dibromochloromethane	124-48-1	44.	5.0	
Chlorobenzene	108-90-7	48.	5.0	
Ethylbenzene	100-41-4	48.	5.0	
m,p-Xylene	136777-61-2	93.	5.0	
o-Xylene	95-47-6	48.	5.0	
Styrene	100-42-5	46.	5.0	
Bromoform	75-25-2	43.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	43.	5.0	
1,3-Dichlorobenzene	541-73-1	42.	5.0	
1,4-Dichlorobenzene	106-46-7	42.	5.0	
1,2-Dichlorobenzene	95-50-1	43.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample	LAL Sample ID: 47819LCS
Date Collected: N/A	Date Received: N/A
Date Analyzed: 22-APR-97	Analytical Dilution: 1
	Analytical Batch ID: 042297-8260-D-1
	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	101%	84-122
Toluene-d8	100%	87-117
Bromofluorobenzene	95%	83-118

CONSTITUENT	CHEM NO	RESULT ug/L	ML ug/L	DATA QUALITY (E)
Chloromethane	74-87-3	70.	5.0	
Vinyl Chloride	75-01-4	66.	5.0	
Bromomethane	74-83-9	90.	5.0	
Chloroethane	75-00-3	66.	5.0	
Trichlorofluoromethane	75-69-4	59.	5.0	
Acetone	67-64-1	3.6	10.	JB
1,1-Dichloroethene	75-35-4	53.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	52.	5.0	
trans-1,2-Dichloroethene	156-60-5	48.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	51.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	55.	5.0	
Chloroform	67-66-3	50.	5.0	
1,1,1-Trichloroethane	71-55-6	52.	5.0	
Carbon tetrachloride	56-23-5	53.	5.0	
1,2-Dichloroethane	107-06-2	51.	5.0	
Benzene	71-43-2	51.	5.0	
Trichloroethene	79-01-6	51.	5.0	
1,2-Dichloropropane	78-87-5	50.	5.0	
Bromodichloromethane	75-27-4	49.	5.0	
2-Chloroethylvinylether	110-75-8	200	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	49.	5.0	
Toluene	108-88-3	52.	5.0	
trans-1,3-Dichloropropene	10061-02-6	48.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,2-Trichloroethane	79-00-5	48.	5.0	
Tetrachloroethene	127-18-4	52.	5.0	
Dibromochloromethane	124-48-1	47.	5.0	
Chlorobenzene	108-90-7	50.	5.0	
Ethylbenzene	100-41-4	51.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	50.	5.0	
Styrene	100-42-5	50.	5.0	
Bromoform	75-25-2	43.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	44.	5.0	
1,3-Dichlorobenzene	541-73-1	46.	5.0	
1,4-Dichlorobenzene	106-46-7	45.	5.0	
1,2-Dichlorobenzene	95-50-1	45.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample	LAL Sample ID: 47728LCS
Date Collected: N/A	Date Received: N/A
Date Analyzed: 19-APR-97	Analytical Dilution: 1
	Analytical Batch ID: 041997-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	107%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	104%	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PQL ug/kg	DATA
				QUALIFIER(S)
Chloromethane	74-87-3	58.	5.0	
Vinyl Chloride	75-01-4	56.	5.0	
Bromomethane	74-83-9	48.	5.0	
Chloroethane	75-00-3	43.	5.0	
Trichlorofluoromethane	75-69-4	52.	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	53.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	52.	5.0	
trans-1,2-Dichloroethene	156-60-5	50.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	54.	5.0	
2-Butanone	78-93-3	3.3	10.	J
cis-1,2-Dichloroethene	156-59-2	57.	5.0	
Chloroform	67-66-3	53.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	53.	5.0	
Carbon tetrachloride	56-23-5	50.	5.0	
1,2-Dichloroethane	107-06-2	53.	5.0	
Benzene	71-43-2	52.	5.0	
Trichloroethene	79-01-6	53.	5.0	
1,2-Dichloropropane	78-87-5	52.	5.0	
Bromodichloromethane	75-27-4	50.	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	51.	5.0	
Toluene	108-88-3	51.	5.0	
trans-1,3-Dichloropropene	10061-02-6	51.	5.0	
1,1,2-Trichloroethane	79-00-5	52.	5.0	
Tetrachloroethene	127-18-4	50.	5.0	
Dibromochloromethane	124-48-1	48.	5.0	
Chlorobenzene	108-90-7	52.	5.0	
Ethylbenzene	100-41-4	52.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	52.	5.0	
Styrene	100-42-5	52.	5.0	
Bromoform	75-25-2	50.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	53.	5.0	
1,3-Dichlorobenzene	541-73-1	48.	5.0	
1,4-Dichlorobenzene	106-46-7	48.	5.0	
1,2-Dichlorobenzene	95-50-1	48.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample	LAL Sample ID: 47748LCS
Date Collected: N/A	Date Received: N/A
Date Analyzed: 21-APR-97	Analytical Dilution: 1
	Analytical Batch ID: 042197-8260-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	GC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	106%	78-125

CONSTITUENT	CAS NO	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	59.	5.0	
Vinyl Chloride	75-01-4	58.	5.0	
Bromomethane	74-83-9	47.	5.0	
Chloroethane	75-00-3	44.	5.0	
Trichlorofluoromethane	75-69-4	52.	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	55.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	54.	5.0	
trans-1,2-Dichloroethene	156-60-5	51.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	55.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	59.	5.0	
Chloroform	67-66-3	54.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	54.	5.0	
Carbon tetrachloride	56-23-5	50.	5.0	
1,2-Dichloroethane	107-06-2	54.	5.0	
Benzene	71-43-2	53.	5.0	
Trichloroethene	79-01-6	53.	5.0	
1,2-Dichloropropane	78-87-5	54.	5.0	
Bromodichloromethane	75-27-4	52.	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	53.	5.0	
Toluene	108-88-3	53.	5.0	
trans-1,3-Dichloropropene	10061-02-6	53.	5.0	
1,1,2-Trichloroethane	79-00-5	55.	5.0	
Tetrachloroethene	127-18-4	50.	5.0	
Dibromochloromethane	124-48-1	50.	5.0	
Chlorobenzene	108-90-7	52.	5.0	
Ethylbenzene	100-41-4	54.	5.0	
m,p-Xylene	136777-61-2	110	5.0	
o-Xylene	95-47-6	54.	5.0	
Styrene	100-42-5	54.	5.0	
Bromoform	75-25-2	52.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	59.	5.0	
1,3-Dichlorobenzene	541-73-1	50.	5.0	
1,4-Dichlorobenzene	106-46-7	49.	5.0	
1,2-Dichlorobenzene	95-50-1	49.	5.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 22-APR-97
Percent Moisture: N/A

LAL Sample ID: 47805LCS
Date Received: N/A
Analytical Dilution: 1
Analytical Batch ID: 042297-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	106%	77-127
Toluene-d8	102%	84-120
Bromofluorobenzene	101%	78-125

CONSTITUENT	CAN. NO.	RESULT ug/kg	PQL ug/kg	DATA QUALIFIER(S)
Chloromethane	74-87-3	56.	5.0	
Vinyl Chloride	75-01-4	53.	5.0	
Bromomethane	74-83-9	47.	5.0	
Chloroethane	75-00-3	42.	5.0	
Trichlorofluoromethane	75-69-4	52.	5.0	
Acetone	67-64-1	<10.	10.	
1,1-Dichloroethene	75-35-4	51.	5.0	
Carbon Disulfide	75-15-0	<5.0	5.0	
Methylene Chloride	75-09-2	53.	5.0	
trans-1,2-Dichloroethene	156-60-5	48.	5.0	
Vinyl Acetate	108-05-4	<10.	10.	
1,1-Dichloroethane	75-34-3	52.	5.0	
2-Butanone	78-93-3	<10.	10.	
cis-1,2-Dichloroethene	156-59-2	56.	5.0	
Chloroform	67-66-3	52.	5.0	
2-Hexanone	591-78-6	<10.	10.	
1,1,1-Trichloroethane	71-55-6	53.	5.0	
Carbon tetrachloride	56-23-5	49.	5.0	
1,2-Dichloroethane	107-06-2	52.	5.0	
Benzene	71-43-2	50.	5.0	
Trichloroethene	79-01-6	51.	5.0	
1,2-Dichloropropane	78-87-5	51.	5.0	
Bromodichloromethane	75-27-4	49.	5.0	
2-Chloroethylvinylether	110-75-8	<20.	20.	
4-Methyl-2-Pentanone	108-10-1	<10.	10.	
cis-1,3-Dichloropropene	10061-01-5	52.	5.0	
Toluene	108-88-3	52.	5.0	
trans-1,3-Dichloropropene	10061-02-6	51.	5.0	
1,1,2-Trichloroethane	79-00-5	52.	5.0	
Tetrachloroethene	127-18-4	51.	5.0	
Dibromochloromethane	124-48-1	50.	5.0	
Chlorobenzene	108-90-7	52.	5.0	
Ethylbenzene	100-41-4	53.	5.0	
m,p-Xylene	136777-61-2	100	5.0	
o-Xylene	95-47-6	52.	5.0	
Styrene	100-42-5	52.	5.0	
Bromoform	75-25-2	47.	5.0	
1,1,2,2-Tetrachloroethane	79-34-5	50.	5.0	
1,3-Dichlorobenzene	541-73-1	47.	5.0	
1,4-Dichlorobenzene	106-46-7	47.	5.0	
1,2-Dichlorobenzene	95-50-1	47.	5.0	

LAS LABORATORIES

MATRIX SPIKE DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: 5B4400100P
Date Collected: 09APR97
Date Analyzed: 19APR97
Percent Moisture: N/A

LAL Sample ID: 47729RS
Date Received: 09APR97
Analytical Dilution: 1
Analytical Batch ID: 041997-8280-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	103%	77-127
Toluene-d8	103%	84-120
Bromofluorobenzene	91%	78-125

Constituent	Spike Added ug/kg	Sample Concentration ug/kg	MS Concentration ug/kg	Recovery	QC Limits
					Recovery
1,1-Dichloroethene	50.0	0.000	57.7	115	54-138
Benzene	50.0	0.000	49.3	99	70-130
Trichloroethene	50.0	0.000	54.5	109	57-132
Toluene	50.0	0.000	48.1	96	71-129
Chlorobenzene	50.0	0.000	50.9	102	72-128

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB4-4D-DUP
Date Collected: 09-APR-97
Date Analyzed: 19-APR-97
Percent Moisture: N/A

LAL Sample ID: 47729MSD
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	100%	77-127
Toluene-d8	102%	84-120
Bromofluorobenzene	87%	78-125

Constituent	Spike Added ug/kg	MSD Concentration ug/kg	Recovery	RPD	QC Limits	
					RPD	Recovery
1,1-Dichloroethene	50.0	62.6	125	8	22	54-138
Benzene	50.0	54.2	108	10	21	70-130
Trichloroethene	50.0	60.6	121	11	24	57-132
Toluene	50.0	53.2	106	10	21	71-129
Chlorobenzene	50.0	56.2	112	10	21	72-128

LAS LABORATORIES

MATRIX SPIKE DATA SUMMARY
VOLATILE ORGANICS BY GC/MS

Client Sample ID: 3-MW-3-W-4-15-97
Date Collected: 15-APR-97
Date Analyzed: 23-APR-97

LAL Sample ID: MS47881
Date Received: 17-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042397-8260-D-1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	117%	84-122
Toluene-d8	109%	87-117
Bromofluorobenzene	106%	83-118

Constituent	Spike Added ug/L	Sample Concentration ug/L	MS Concentration ug/L	% Recovery	QC Limits
					% Recovery
1,1-Dichloroethene	50.0	0.000	50.7	101	62-124
Benzene	50.0	0.000	50.9	102	68-128
Trichloroethene	50.0	0.000	46.2	92	65-125
Toluene	50.0	1.24	51.0	100	69-129
Chlorobenzene	50.0	0.000	49.8	100	68-128

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY
VOLATILE ORGANICS BY GC/MS

Client Sample ID: 3-MW-3-W-4-15-97
Date Collected: 15-APR-97
Date Analyzed: 23-APR-97

LAL Sample ID: MSD47881
Date Received: 17-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042397-8260-D-1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	120%	84-122
Toluene-d8	109%	87-117
Bromofluorobenzene	106%	83-118

Constituent	Spike Added ug/L	MD Concentration ug/L	Recovery	RPD	QC Limits	
					RPD	Recovery
1,1-Dichloroethene	50.0	58.1	116	14	14	62-124
Benzene	50.0	57.0	114	11	11	68-128
Trichloroethene	50.0	52.2	104	12	14	65-125
Toluene	50.0	57.5	112	12	13	69-129
Chlorobenzene	50.0	55.1	110	10	13	68-128

LAS LABORATORIES

MATRIX SPIKE DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: 52301-5	LAL Sample ID: 47748MS
Date Collected: 09APR97	Date Received: 09APR97
Date Analyzed: 21APR97	Analytical Dilution: 1
	Analytical Batch ID: 042197822651-E1
Percent Moisture: N/A	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	111%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	106%	78-125

Constituent	Spike Added ug/kg	Sample Concentration ug/kg	MS Concentration ug/kg	Recovery	QC Limits
					Recovery
1,1-Dichloroethene	50.0	0.000	58.6	117	54-138
Benzene	50.0	0.000	50.9	102	70-130
Trichloroethene	50.0	0.000	60.0	120	57-132
Toluene	50.0	0.000	51.2	102	71-129
Chlorobenzene	50.0	0.000	49.3	99	72-128

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: SB6-1-5
Date Collected: 09-APR-97
Date Analyzed: 21-APR-97
Percent Moisture: N/A

LAL Sample ID: 47748MSD
Date Received: 09-APR-97
Analytical Dilution: 1
Analytical Batch ID: 042197-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	113%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	105%	78-125

Constituent	Spike Added ug/kg	MSD Concentration ug/kg	Recovery	RPD	QC Limits	
					RPD	Recovery
1,1-Dichloroethene	50.0	62.6	125	7	22	54-138
Benzene	50.0	52.7	105	3	21	70-130
Trichloroethene	50.0	61.2	122	2	24	57-132
Toluene	50.0	52.7	105	3	21	71-129
Chlorobenzene	50.0	52.0	104	5	21	72-128

LAS LABORATORIES

LCS DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 19-APR-97
Percent Moisture: N/A

LAL Sample ID: 47729LCS
Date Received: N/A
Analytical Dilution: 1
Analytical Batch ID: 041997-8260-D1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	103%	77-127
Toluene-d8	105%	84-120
Bromofluorobenzene	97%	78-125

Constituent	Spike Added ug/LB	LCS Concentration ug/LB	LCS % Recovery	QC Limits
1,1-Dichloroethene	50.0	52.7	105	54-138
Benzene	50.0	49.8	100	70-130
Trichloroethene	50.0	47.7	95	57-132
Toluene	50.0	48.6	97	71-129
Chlorobenzene	50.0	47.6	95	72-128

LAS LABORATORIES

LCS DATA SUMMARY
VOLATILE ORGANICS BY GC/MS

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 22-APR-97

LAL Sample ID: 47819LCS
Date Received: N/A
Analytical Dilution: 1
Analytical Batch ID: 042297-8260-D-1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	101%	84-122
Toluene-d8	100%	87-117
Bromofluorobenzene	95%	83-118

Constituent	Spike Added ug/L	Obs Concentration ug/L	LCS Recovery	QC Limits
1,1-Dichloroethene	50.0	53.4	107	62-124
Benzene	50.0	51.4	103	68-128
Trichloroethene	50.0	51.2	102	65-125
Toluene	50.0	51.7	103	69-129
Chlorobenzene	50.0	50.1	100	68-128

LAS LABORATORIES

LCS DATA SUMMARY
GCMS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample	LAB Sample ID: 47728665
Date Collected: N/A	Date Received: N/A
Date Analyzed: 19 APR 97	Analytical Dilution: 1
Percent Moisture: N/A	Analytical Batch ID: 04199788260-E1
	Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	107%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	104%	78-125

Constituent	Spike Added ug/kg	LCS Concentration ug/kg	LCS % Recovery	QC Limits
1,1-Dichloroethene	50.0	53.1	106	54-138
Benzene	50.0	51.8	104	70-130
Trichloroethene	50.0	52.6	105	57-132
Toluene	50.0	51.4	103	71-129
Chlorobenzene	50.0	51.5	103	72-128

LAS LABORATORIES

LCS DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 21-APR-97
Percent Moisture: N/A

LAL Sample ID: 47748LCS
Date Received: N/A
Analytical Dilution: 1
Analytical Batch ID: 042197-8260-E1
Preparation Dilution: 1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	109%	77-127
Toluene-d8	104%	84-120
Bromofluorobenzene	106%	78-125

Constituent	Spike Added ug/kg	Lab Concentration ug/kg	LCS % Recovery	QC Limits
1,1-Dichloroethene	50.0	54.6	109	54-138
Benzene	50.0	53.0	106	70-130
Trichloroethene	50.0	53.5	107	57-132
Toluene	50.0	53.1	106	71-129
Chlorobenzene	50.0	52.4	105	72-128

LAS LABORATORIES

LCS DATA SUMMARY
GC/MS FOR VOLATILE ORGANICS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47805LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	22-APR-97	Analytical Dilution:	1
		Analytical Batch ID:	042297-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	106%	77-127
Toluene-d8	102%	84-120
Bromofluorobenzene	101%	78-125

Constituent	Spike Added ug/kg	DCS Concentration ug/kg	DCS % Recovery	QC Limits
1,1-Dichloroethene	50.0	50.8	102	54-138
Benzene	50.0	50.3	101	70-130
Trichloroethene	50.0	51.2	102	57-132
Toluene	50.0	51.5	103	71-129
Chlorobenzene	50.0	52.2	104	72-128

LAS LABORATORIES

VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: GC/MS-D

Date/Time Analyzed: 19-APR-97 1113

Analytical Batch ID: 041997-8260-D1

	IS1 (PFB) Area #	RT #	IS2 (DFB) Area #	RT #	IS3 (CBZ) Area #	RT #	IS4 (DCB) Area #	RT #
12 HOUR STD	947428	10.75	1905638	12.25	1760787	16.83	1448560	21.01
UPPER LIMIT	1894856	11.25	3811276	12.75	3521574	17.33	2897120	21.51
LOWER LIMIT	473714	10.25	952819	11.75	880394	16.33	724280	20.51

CUSTOMER SAMPLE NO.								
Method Blank	1064420	10.77	2095639	12.26	1971770	16.82	1340266	20.99
Lab Ctrl Sample	1089967	10.76	2172891	12.26	1940734	16.83	1521591	21.00
SB6-1-15	868526	10.77	1783357	12.26	1648460	16.83	1147593	20.98
SB6-2-5	927159	10.76	1876594	12.26	1743402	16.83	1156937	20.99
SB6-2-10	895980	10.77	1810738	12.26	1691342	16.83	1147668	20.98
SB6-2-15	869897	10.77	1709237	12.26	1583361	16.83	1090806	20.99
SB4-5S	849619	10.77	1714988	12.26	1595744	16.83	1062173	20.99
SB4-7S	755776	10.77	1565238	12.26	1380954	16.83	865064	20.99
SB4-6S	838322	10.76	1674775	12.26	1565484	16.83	1065506	20.99
SB4-4D	808045	10.76	1664223	12.26	1541290	16.83	983606	20.99
SB4-4D-DUP	791054	10.77	1599523	12.26	1435835	16.82	938350	20.99
SB4-4D-DUPMS	713179	10.76	1470891	12.25	1244205	16.83	832743	20.98
SB4-4D-DUPMSD	732362	10.76	1506655	12.26	1266162	16.83	974367	20.99

- IS1 (PFB) = Pentafluorobenzene
- IS2 (DFB) = 1,4-Difluorobenzene
- IS3 (CBZ) = Chlorobenzene-d5
- IS4 (DCB) = 1,4-Dichlorobenzene-d4

- AREA UPPER LIMIT = +100% of internal standard area
- AREA LOWER LIMIT = -50% of internal standard area
- RT UPPER LIMIT = +0.50 minutes of internal standard RT
- RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

LAS LABORATORIES

VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: GC/MS-D

Date/Time Analyzed: 22-APR-97 1015

Analytical Batch ID: 042297-8260-D-1

	IS1 (PFB)		IS2 (DFB)		IS3 (CBZ)		IS4 (DCB)	
	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	915338	10.75	1743447	12.25	1610001	16.82	1365361	20.98
UPPER LIMIT	1830676	11.25	3486894	12.75	3220002	17.32	2730722	21.4*
LOWER LIMIT	457669	10.25	871724	11.75	805001	16.32	682681	20.4*

CUSTOMER SAMPLE NO.								
Lab Ctrl Sample	919741	10.75	1786375	12.25	1630313	16.82	1363107	20.98
Lab Ctrl Sample	919741	10.75	1786375	12.25	1630313	16.82	1363107	20.98*
Method Blank	862757	10.77	1664923	12.26	1575150	16.82	1113494	20.98*
INSTRUMENT BLANK	862757	10.77	1664923	12.26	1575150	16.82	1113494	20.98*
TCLP METHOD BLANK	844455	10.77	1622789	12.25	1559701	16.83	1100924	20.98*
032650-002 TP-247MS	842994	10.76	1632311	12.26	1498054	16.83	1272591	20.98*
032650-002 TP-247MSD	845014	10.76	1642809	12.26	1501590	16.82	1249130	20.98*
M97	787025	10.77	1459604	12.26	1388162	16.82	994440	20.98*
Lab Ctrl Sample Dup	829462	10.76	1569918	12.26	1429873	16.83	1183274	21.1*
Lab Ctrl Sample Dup	829462	10.76	1569918	12.26	1429873	16.83	1183274	21.01*

- IS1 (PFB) = Pentafluorobenzene
- IS2 (DFB) = 1,4-Difluorobenzene
- IS3 (CBZ) = Chlorobenzene-d5
- IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = -50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
 * Values outside of QC limits.

LAS LABORATORIES

VOLATILE INTERNAL STANDARD

AREA AND RT SUMMARY

Instrument ID: GC/MS-E

Date/Time Analyzed: 19-APR-97 1022

Analytical Batch ID: 041997-8260-E1

	IS1 (PFB)		IS2 (DFB)		IS3 (CBZ)		IS4 (DCB)	
	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	740469	11.39	1127453	12.94	1008439	17.67	995146	21.93
UPPER LIMIT	1480938	11.89	2254906	13.44	2016878	18.17	1990292	22.43
LOWER LIMIT	370235	10.89	563727	12.44	504220	17.17	497573	21.43
CUSTOMER SAMPLE NO.								
Lab Ctrl Sample	719909	11.39	1093594	12.93	994708	17.68	882634	21.93
Method Blank	691011	11.39	1078046	12.94	975944	17.67	754706	21.91
S7-1S	497017	11.39	875996	12.93	750967	17.67	510449	21.91
SB4-1S	546788	11.39	915706	12.93	810761	17.67	567991	21.90
SB4-1D	523866	11.39	887643	12.93	807510	17.67	578290	21.90
SB4-2D	443626	11.39	847084	12.93	792570	17.67	576901	21.91
SB4-3S	537342	11.39	921074	12.93	810640	17.67	541066	21.91
SB4-3D	486351	11.39	804285	12.93	738957	17.67	541548	21.91
SB7-1-1	460317	11.39	781383	12.93	744840	17.67	555952	21.91

- IS1 (PFB) = Pentafluorobenzene
- IS2 (DFB) = 1,4-Difluorobenzene
- IS3 (CBZ) = Chlorobenzene-d5
- IS4 (DCB) = 1,4-Dichlorobenzene-d4

- AREA UPPER LIMIT = +100% of internal standard area
- AREA LOWER LIMIT = -50% of internal standard area
- RT UPPER LIMIT = +0.50 minutes of internal standard RT
- RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

LAS LABORATORIES

VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: GC/MS-E

Date/Time Analyzed: 21-APR-97 1058

Analytical Batch ID: 042197-8260-E1

	IS1 (PFB)	RT #	IS2 (DFB)	RT #	IS3 (CBZ)	RT #	IS4 (DCB)	RT
	Area #		Area #		Area #		Area #	
12 HOUR STD	807230	11.38	1205985	12.92	1093287	17.66	1089604	21.91
UPPER LIMIT	1614460	11.88	2411970	13.42	2186574	18.16	2179208	22.41
LOWER LIMIT	403615	10.88	602993	12.42	546644	17.16	544802	21.41
CUSTOMER SAMPLE NO.								
Lab Ctrl Sample	708582	11.38	1076286	12.93	982395	17.67	889840	21.91
Method Blank	841386	11.38	1270190	12.93	1067447	17.67	895057	21.91
SB4-2S	584521	11.39	988817	12.93	874394	17.67	617531	21.91
SB4-8D	617707	11.39	979489	12.94	883581	17.67	645689	21.91
SB4-7D	658604	11.39	1075514	12.93	990104	17.67	822738	21.91
SB4-6D	634471	11.39	994292	12.94	930375	17.67	777020	21.91
SB4-5D	560077	11.40	882498	12.94	803355	17.67	666971	21.91
SB4-4S	483607	11.39	830491	12.93	752117	17.67	593414	21.91
SB4-8S	563441	11.39	893568	12.93	815242	17.67	633692	21.91
SB6-1-5	528731	11.39	840705	12.93	796008	17.67	653776	21.90
SB6-1-5MS	538823	11.39	891254	12.93	820246	17.67	758566	21.90
SB6-1-5MSD	510777	11.38	897926	12.93	820682	17.67	778324	21.90

IS1 (PFB) = Pentafluorobenzene
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5
 IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = -50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
 * Values outside of QC limits.

LAS LABORATORIES

VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: GC/MS-E

Date/Time Analyzed: 22-APR-97 0925

Analytical Batch ID: 042297-8260-E1

	IS1 (PFB) Area #	RT #	IS2 (DFB) Area #	RT #	IS3 (CBZ) Area #	RT #	IS4 (DCB) Area #	RT #
12 HOUR STD	835854	11.37	1235591	12.92	1106176	17.66	1082836	21.91
UPPER LIMIT	1671708	11.87	2471182	13.42	2212352	18.16	2165672	22.41
LOWER LIMIT	417927	10.87	617796	12.42	553088	17.16	541418	21.41
CUSTOMER SAMPLE NO.								
Lab Ctrl Sample	805898	11.38	1238091	12.93	1106534	17.66	1088777	21.92
Method Blank	804764	11.38	1230732	12.93	1121449	17.66	912411	21.90
TRIP BLANK	814137	11.38	1236720	12.92	1128362	17.66	921587	21.90
SB6-1-10	623321	11.38	1005744	12.93	918948	17.66	732317	21.91

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5
IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

RUN LOGS / INJECTION LOGS

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ANA LYST	DATE	TIME OF INJ	LAL #	DESCRIPTION/CILIENT	SOL #	MATRIX/DIL	DATA FILE	TUNE FILE	METHOD FILE	DR	COMMENTS
JH	4/18/98			MSD 189302	098-70-3		704458	MD321	MS888	OK	
				MSD 119702	098-71-1		57		DS8260	OK	ALS-1
					098-72-1		60			OK	2
					098-73-1		61			OK	3
					098-74-1		62			OK	4
					098-75-1		63			OK	5
					098-76-2		64			OK	6
				BLANK	098-77-2					OK	ALS
				BERONITIN	098-78-3		D4465	MD321	MED88	OK	ALS
				YSTONUTIN	098-79-1		D4466		DS8260	OK	1
				477291CS	098-80-1		67			OK	2
				BIK	098-81-2		68			OK	3
				LCS	098-82-4		69			OK	4
				L.L.CES 37691	098-83-2		70			OK	5
				Yonitec SBL-1-D	098-84-2		71			OK	6
				SBL-2-5	098-85-2		72			OK	7
				SBL-2-10	098-86-2		73			OK	8
				SBL-2-15	098-87-2		74			OK	9
				SBL-55	098-88-2		75			OK	10
				SBL-75	098-89-2		76			OK	11
				SBL-15	098-90-2		77			OK	12
				SBL-4D	098-91-2		78			OK	13
				SBL-4B	098-92-2		79			OK	14
				SBL-10B	098-93-2		80			OK	15
				SBL-10B	098-94-2		81			OK	16
				SBL-MSD	098-95-2		82			OK	17
				RFB042097D1	978-70-3		D4482	MD321	MED88	OK	ALS
				VS004773B	978-71-12		83		MS8260A	OK	1
				47736LCS	978-72-2		84			OK	2
				47736MB	978-73-4		85			OK	3
				LCH-00112	978-74-2		86			OK	4
				LCH-00113			87			OK	5
				LCH-00131	97		88			OK	6

if Doubt not avoid original 6
 Sample for L9141-28
 used L9141-50.

LOCKHEED ANALYTICAL LAB REVIEWED BY

ANA LYST	DATE	TIME OF INJ.	LAL #	DESCRIPTION/CLIENT	SOL #	MATRIX/DIL	DATA FILE	TUNE FILE	METHOD FILE	DR	COMMENTS
AK	4/20/97	15:50	L9154-1	LCH00135	978-74-2	5.2049	D4499	M00321	M58260A	OK	
		16:29	L9154-15	LCH00137		5.0289	90			OK	
		17:00	L9154-22	LCH00135		5.2409	91			OK	
		17:42	L9154-24	LCH00139		5.2429	92			OK	IS out, Re-Analyze, Report w/ D4503
		18:24	L9154-34	LCH00140		5.3339	93			OK	
		19:06	47735MS			5.2809	94			OK	
		19:43	47736MS			5.293	95			OK	
		20:22	L9154-50	LCH00141	978-74-2	5.479	96			OK	
		21:01	L9154-57	LCH00142		5.2679	97			OK	
		21:40	L9154-6	LCH00134		5.2299	96			OK	
		12:46		BFB042197DI	978-70-3		D4499	M00321	MED8FB	OK	
		13:58		VSTD43747			24500		M58260A	OK	
		14:36		47747 LGS		5.3816	01			OK	
		15:16		47747 MR		5.0925	02			OK	report with D4492
		17:00		L9154-29 RE			03			OK	
		17:44		BFB042197D2	978-70-3		D4504	M00321	MED8FB	OK	
		19:01		VSTD020			05		D45260	OK	
		19:39		VSTD050			06			OK	
		20:17		VSTD100			07			OK	
		20:54		VSTD150			08			OK	
		21:31		VSTD200			09			OK	
		22:12		Cleaning Blank	978-74-2		10			OK	
		22:51		Cleaning Blank	978-74-2		11			OK	
		23:29		47775 CCS	978-74-2		12			OK	
		00:01		47779 MR			13			OK	
				L9177-10			14			OK	
				L9177-12			15			OK	
				L9177-14			16			OK	
				L9177-15			17			OK	
				BFB042297DI	978-70-3		D4518	M00321	MED8FB	OK	
				VSTD43919			19		D45260	OK	

Good 8260 Under Calibration

Sample not loaded Sample Broken in Laboratory

000075

LOGBOOK# LAL 96 LOG 0898 PAGE #

INSTRUMENT ID # 61MS D

LOCKHEED ANALYTICAL LAB REVIEWED BY

ANA LYST	DATE	TIME OF INJ	LAI #	DESCRIPTION/CLIENT	SOL #	MATRIX/DIL	DATA FILE	TUNE FILE	METHOD FILE	DR	COMMENTS	ALS
10	11:22	10:56	47619LCS	47619LCS	976-74-2		D4520	M00321	DMS62600	OK	For reporting purposes, sample also named 47929M8	2
		11:37	47619M8	47619M8	976-74-2		31			OK	For reporting purposes, sample also named 47929M8	3
		12:15	47619M8	TCLP method Blank	976-74-2	H ₂ O	32			OK		4
		12:54	47619M8	032450-002	976-74-2		33			OK		5
		13:33	47619M8		976-74-2		34			OK		6
		14:12	47619M8		976-74-2		25			OK	For reporting purposes, sample also named 47929M8	7
		14:50	47619M8	M97	976-74-2	H ₂ O	26			OK		8
		16:27	47619M8	034591-001 BLDG 9630			27			OK		11
		16:06	47619M8	034538-003 BLDG 9630			28			OK		12
		16:48	47619M8	034530-001 BLDG 9630		Lio Waste	29			OK		13
		17:24	47619M8	034516-003 BLDG 9630		Lio Waste	30			OK		14
		18:04	47619M8	034545-001 Trip Blank		H ₂ O	31			OK		15
		18:44	47619M8	034546-003 BLDG 9630		H ₂ O	32			OK		1
		19:22	47619M8	47619LSDMUP	976-74-2		33			OK		2
		08:55	47619M8	VSTD 47661	976-74-2		35		DMS62600	OK		1
		09:34	47661M8	47661LCS	976-74-2		36			OK		2
		10:13	47661M8	47661M8	976-74-2		37			OK		3
		10:52	47661M8	JSP - 1-w-4-15-97	976-74-2	H ₂ O	38			OK		4
		11:30	47661M8	3-MW-11-10-4-15-97	976-74-2		39			OK		5
		12:00	47661M8	3-MW-5-10-4-15-97	976-74-2		40			OK		6
		12:46	47661M8	3-MW-1-10-4-15-97	976-74-2		41			OK		7
		13:34	47661M8	3-MW-3-10-4-15-97	976-74-2		42			OK		8
		14:12	47661M8	3-MW-4-10-4-15-97	976-74-2		43			OK		11
		14:52	47661M8	3-MW-5-10-4-15-97	976-74-2		44			OK		12
		15:30	47661M8	3-MW-6-10-4-15-97	976-74-2		45			OK		13
		16:08	47661M8	3-MW-7-10-4-15-97	976-74-2		46			OK		14
		16:46	47661M8	3-MW-8-10-4-15-97	976-74-2		47			OK		15
		17:24	47661M8	3-MW-9-10-4-15-97	976-74-2		48			OK		1
		18:02	47661M8	3-MW-10-10-4-15-97	976-74-2		49			OK	1st surrogate out high, Re-Analyse	2

000060

ANA LYST	DATE	TIME OF RUN	LAL #	DESCRIPTION/CUENT	SOL #	MATRIX/DR	DATA FILE	TUNE FILE	METHOD FILE	DR	COMMENTS
1H	4/23/97	08:18		BFB-042377D1	975-70-3		D4534	MDD321	ME2BFB	OK	ALS
		08:55		VSD439621	975-71-1		35		DW5260	OK	1
		09:34	4786114	47861LCS	975-71-2		36			OK	2
		10:13	47861MB	47861MB	975-71-3		37			OK	3
		10:52	L9209-10	JSP-1-W-4-19-97	975-71-4	H ₂ O	38			OK	4
		11:30	L9209-16	3-MW-11-W-4-15-97			39			OK	5
		12:09	L9209-23	3-MW-5-W-4-15-97			40			OK	6
		12:46	L9209-23	DSW-MW-1-W-4-15-97			41			OK	7
		13:34	L9209-20	3-MW-3-W-4-15-97	975-71-2		42			OK	8
		14:12	47861MB		975-71-2		43			OK	11
		14:50	47861MMS		975-71-2		44			OK	12
		15:28	L9209-35	3-MW-3MB-4-15-97	975-71-2		45			OK	13
		16:06	L9209-36	TB-2-W-4-15-97			46			OK	14
		16:44	L9223-53	DW2-MW-4-15-97			47			OK	15
		17:24	L9223-62	TB-1-W-4-15-97			48			OK	15
		18:02	L9217-2	MW 9A31-1333			49			OK	2
											CMA 4/24/97
											ALS
		06:14		BFB-042377D1	975-70-3		D4590	MDD321	ME2BFB	OK	1
		07:53		VSD439621	975-71-1		M551		DW5260	OK	2
		08:32	47861LCS	47861LCS	975-71-2		52			OK	3
		09:11	47861MB	47861MB	975-71-2		53			OK	4
		09:50	L9223-36	PC-MW-1-W-4-15-97	975-71-2	H ₂ O	54			OK	5
		10:26	L9223-36	TB-1-W-4-15-97			55			OK	6
		11:07	47861MMS		975-71-2		56			OK	7
		11:45	47861MMS		975-71-2		57			OK	8
		12:23	L9223-41	PC-MW-2-4-16-97	975-71-2		58			OK	11
		13:01	L9223-44	PC-MW-2-AB-W-4-14-97			59			OK	12
		13:39	L9223-47	3-MW-6-W-4-16-97			60			OK	13
		14:17	L9223-50	JSP-2-W-4-16-97			61			OK	14
		14:55	L9246-10	KLB-001			62			OK	14
		15:24	L9246-8	TT 7065-1340			63			OK	16

ANA LYST	DATE OF INJ.	TIME OF INJ.	ALS NO	LAS SAMPLE ID	DESCRIPTION/ CLIENT SAMPLE ID	SOLUTION ID	MATRIX/ DILUTION	DATA FILE	TUNE FILE	METHOD FILE	DR1	COMMENTS
VN	4/11/98	1545	6	111654MSD	VN3251-2J	993-08-114	5.021	56334	ME0819	ES820XF	REP	I.S.V
V	↓	1627	7	19129-7	NL VN3951	993-08-1	0.504	35	↓	↓	REP	I.S.V. Report at ME6298
V	↓	1707	8	19171-26	RE VN3253-2	↓	5.011	36	ME0819	ME0819	OK	I.S.V. Report at ME6298
SA	4/10/98	1756	1		REAN4797E2	993-70-3	-	37	ME0819	ME0819	OK	
V	↓	1817	2		USD47692	993-70-2	-	38	ME0819	ES820XF	OK	
V	↓	1047	3	USD2020	USD47692	993-73-42	-	39	ME0819	ME0819	OK	
V	↓	1129	4	USD2052	USD47692	993-73-42	-	40	ME0819	ME0819	OK	GOOD 8260 + FREONS
V	↓	0010	5	USD100	USD47692	993-73-42	-	41	ME0819	ME0819	OK	Soil Initial Calibration
V	↓	0052	6	USD250	USD47692	993-73-42	-	42	ME0819	ME0819	OK	
V	↓	0140	7	USD2200	USD47692	993-73-42	-	43	ME0819	ME0819	OK	
VN	4/11/98	0900	1		B3041877E1	7-K. WISAP	-	44	ME0819	ME0819	OK	
V	↓	0922	2		VSD47699	993-70-3	-	45	ME0819	ME0819	OK	
V	↓	1004	3		47699 LCS	993-73-314	-	46	ME0819	ES820XF	OK	
V	↓	1046	4		47699 MB	993-73-3	-	47	ME0819	ES820XF	OK	
V	↓	1127	5	19171-46	VN3251-2J	993-73-3	5.020	48	ME0819	ES820XF	OK	
V	↓	1207	6	19171-24	VN3252-2	993-73-3	4.948	49	ME0819	ES820XF	OK	
V	↓	1251	7	19171-28	VN3254-2	993-73-3	5.000	50	ME0819	ES820XF	OK	
V	↓	1332	8	19171-30	VN3255-2	993-73-3	4.998	51	ME0819	ES820XF	OK	
V	↓	1414	9	19171-32	VN3256-2	993-73-3	4.999	52	ME0819	ES820XF	OK	
V	↓	1506	10	19171-34	VN3257-2	993-73-3	5.001	53	ME0819	ES820XF	OK	
V	↓	1549	11	19171-36	VN3258-0	993-73-3	5.020	54	ME0819	ES820XF	OK	
V	↓	1631	12	19171-48	VN6061-1	993-73-3	5.013	55	ME0819	ES820XF	OK	
V	↓	1713	13	19171-50	VN6061-5	993-73-3	5.011	56	ME0819	ES820XF	OK	
V	↓	1756	14		REAN4797E2	993-70-3	-	57	ME0819	ME0819	OK	
V	↓	1819	15		USD47692	993-73-314	-	58	ME0819	ES820XF	OK	
V	↓	2032	16		47699 LCS	993-73-314	-	59	ME0819	ES820XF	OK	
V	↓	2103	17		47699 MB	993-73-314	-	60	ME0819	ES820XF	OK	
V	↓	2155	18	19171-53	VN6061-8	993-73-3	5.0169	61	ME0819	ES820XF	OK	
V	↓	2236	19	47699 LCS	VN6061-8	993-73-314	4.999	62	ME0819	ES820XF	OK	
V	↓	2318	20	47699 MB	VN6061-8	993-73-314	5.0049	63	ME0819	ES820XF	REP	Comp out

ALS NO. - Telmer Purge and Trap Autosampler Position Number. For Data Reportable? (DR1) Column: DNR - Do Not Report; Rep - Report (OC failure, report with another analysis); OK - Report (No OC failure).

QC/MIS

ANA. LYST	DATE OF INJ.	TIME OF INJ.	ALS NO.	LAS SAMPLE ID	DESCRIPTION/CLIENT SAMPLE ID	SOLUTION ID	MATRIX/DILUTION	DATA FILE	TUNE FILE	METHOD FILE	DR?	COMMENTS
JH	4/16/92	2354	7	19171-55	VN6082-1	978-73-3	4.999g	7E6364	ME0819	ESR260X	OK	
	4/19	0041	9	19171-57	VN6082-5		5.004g	65			OK	
		0127	10	19171-59	VN6082-6		5.004g	66			OK	
		0214	11	19171-61	VN6083-1		4.999g	67			OK	
		0300	12	19171-63	VN6083-5		4.999g	68			OK	
		0346	13	19171-65	VN6083-6		5.006g	69			OK	
		0433	14	19171-62	VN3255-2		5.006g	70			REP	IS+SUER OUT
		0519	15	19171-64	VN3256-2		5.006g	71			OK	
BN	4/19	1007	-	-	8780419A7E1	978-70-3		E6372	ME0819	ME0819	OK	
		1022	1	-	V5D47728	978-70/75-2/12		73		ESR200X	OK	
		1104	2	-	H1281CS	978-73-3/14		74			OK	
		1145	3	-	47228MB	978-73-3		75			OK	
		1227	4	19171-34	PE VN3257-2		5.024	76			DNR	bad purge
		1316	5	19171-36	PEL VN3258-0		1.002	77			OK	Report with E6374
		1404	6	19171-50	PE VN6081-5		5.017	78			REP	IS+SUER
		1451	7	19145-25	ST-15		4.999g	79			OK	
		1538	9	19145-26	S84-15		4.998	80			OK	
		1624	10	19145-27	S84-1D		5.012	81			OK	
		1740	11	19145-28	S84-25		5.018	82			DNR	cont IS ↓
		1756	12	19145-29	S84-2D		5.020	83			OK	
		1842	13	19145-30	S84-3S		5.021	84			OK	
		1928	14	19145-31	S84-3D		5.016	85			OK	
		2014	15	19145-32	S87-1-1		4.999g	86			OK	
		2100	16	-	Cleanroom		-	87			DNR	
W	4/21	1028	-	-	8780419A7E1	978-70-3		E6338	ME0819	ME0819	OK	
		1058	1	-	67D47748	978-70/75-2/12		89		ESR200X	OK	
		1140	2	-	472491CS	978-73-3/14		90			REP	11.2.2.2-Tetrahydrothiophene
		1221	3	-	47248MB	978-73-3		91			OK	
		1302	4	19189-2	31661			92			OK	
		1344	5	19189-2	31661			93			OK	Report this data

ALS NO. = Telmer Purge and Trap Autosampler Position Number. For Data Reportable? (DR?) Column: DNR = Do Not Report; Rep = Report (OC failure, report with another analysis); OK = Report (No OC failure).

1997

LOCKHEED ANALYTICAL SERVICES

REVIEWED BY

INSTRUMENT ID

GC-MS E

LOGBOOK#

LAL-96 LOG-0982

PAGE #

UUUUJ-4

ANA LYST	DATE OF INJ.	TIME OF INJ.	ALS NO.	LAS SAMPLE ID	DESCRIPTION/ CLIENT SAMPLE ID	SOLUTION ID	MATRIX/ DILUTION	DATA FILE	TUNE FILE	METHOD FILE	DR?	COMMENTS
IN	4/21	1427	6	19171-34	RE VN 3257-2	978-73-3	5.011	E6394	ME0819	ESR260XF	OK	Rep. with original. 4/21/97
		1508	7	19145-28	RE SB4-25		5.018	95			OK	
		1549	8	19145-20	SB4-80		5.020	96			OK	
		1631	9	19145-21	SB4-70		5.000	97			OK	
		1713	10	19145-22	SB4-60		5.012	98			OK	
		1754	11	19145-23	SB4-50		5.018	99			OK	
		1835	12	19145-33	SB4-45		5.005	E6400			OK	
		1921	13	19145-34	SB4-85		5.015	01			OK	
		2007	14	19145-8	JB6-1-5		4.998	02			OK	
		2054	15	47748MS		978-73-3/4	5.014	03			OK	
		2142	16	47748MSB			4.998	04			OK	
IN	4/22	0401	-	-	BFB042297E1	978-70-3		E6405	ME0819	MEEBFB	OK	
		0925	1	-	VSTD47805	978-70/73-2/4		06		ESR260XF	OK	
		1006	2	-	47805 LCS	978-73-3/4		07			OK	
		1047	3	-	47805 MB	978-73-3		08			OK	
		1129	4	19145-35	TRIP BLANK			09			OK	pH=1
		1210	5	19190-1	VN44TB54			10			OK	pH=1
		1251	6	19190-3	VN107TB55			11			OK	pH=1
		1332	7	19145-9	SB6-1-10		4.999	12			OK	
		1414	8	19190-11	VN44B2-13		5.000	13			OK	
		1455	9	19190-14	VN107B1-2		5.017	14			OK	
		1536	10	19190-5	VN44B1-12.5		5.002	15			OK	
		1623	11	19190-8	VN44B1-15		5.019	16			OK	
		1708	12	-	VSTD020	978-73-1/2	WATER	17		EW8260A	OK	GOOD WATER 8260A CALIBRATION
		1754	13	-	VSTD050			18			OK	
		1840	14	-	VSTD100			19			OK	
		1927	15	-	VSTD150			20			OK	
		2013	16	-	VSTD200			21			OK	
IN	4/23	0923	-	-	BFB042397E1	978-70-3		E6422	ME0819	MEEBFB	OK	
		0950	1	-	VSTD47892	978-76-2/5/6		23		DIOXANE	DNR	

ALS NO. - Tekmar Purge and Trap Autosampler Position Number. For Data Reportable? (DR?) Column: DNR - Do Not Report; Rep - Report (QC failure, report with another analysis); OK - Report (No QC failure).

000064

EPA METHOD 8270 (Semivolatile Organics)

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	M97	LAL Sample ID:	L9145-6
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
Matrix:	Water	Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	64%	31-110
Phenol-d5	68%	27-111
Nitrobenzene-d5	71%	40-114
2-Fluorobiphenyl	68%	41-111
2,4,6-Tribromophenol	87%	34-147
Terphenyl-d14	48%	33-141

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER
Phenol	108-95-2	<10.	10.	
bis(2-Chloroethyl) ether	111-44-4	<10.	10.	
2-Chlorophenol	95-57-8	<10.	10.	
1,3-Dichlorobenzene	541-73-1	<10.	10.	
1,4-Dichlorobenzene	106-46-7	<10.	10.	
Benzyl alcohol	100-51-6	<20.	20.	
1,2-Dichlorobenzene	95-50-1	<10.	10.	
2-Methylphenol	95-48-7	<10.	10.	
bis(2-chloroisopropyl) ether	108-60-1	<10.	10.	
4-Methylphenol	106-44-5	<10.	10.	
N-Nitroso-di-n-propylamine	621-64-7	<10.	10.	
Hexachloroethane	67-72-1	<10.	10.	
Nitrobenzene	98-95-3	<10.	10.	
Isophorone	78-59-1	<10.	10.	
2-Nitrophenol	88-75-5	<10.	10.	
2,4-Dimethylphenol	105-67-9	<10.	10.	
Benzoic acid	65-85-0	<50.	50.	
bis(2-Chloroethoxy)methane	111-91-1	<10.	10.	
2,4-Dichlorophenol	120-83-2	<10.	10.	
1,2,4-Trichlorobenzene	120-82-1	<10.	10.	
Naphthalene	91-20-3	<10.	10.	
4-Chloroaniline	106-47-8	<20.	20.	
Hexachlorobutadiene	87-68-3	<10.	10.	
4-Chloro-3-methylphenol	59-50-7	<20.	20.	
2-Methylnaphthalene	91-57-6	<10.	10.	
Hexachlorocyclopentadiene	77-47-4	<10.	10.	
2,4,6-Trichlorophenol	88-06-2	<10.	10.	
2,4,5-Trichlorophenol	95-95-4	<10.	10.	
2-Chloronaphthalene	91-58-7	<10.	10.	
2-Nitroaniline	88-74-4	<50.	50.	
Dimethylphthalate	131-11-3	<10.	10.	
Acenaphthylene	208-96-8	<10.	10.	
2,6-Dinitrotoluene	606-20-2	<10.	10.	
3-Nitroaniline	99-09-2	<50.	50.	
Acenaphthene	83-32-9	<10.	10.	
2,4-Dinitrophenol	51-28-5	<50.	50.	
4-Nitrophenol	100-02-7	<50.	50.	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	M97	LAL Sample ID:	L9145-6
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
Matrix:	Water	Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<10.	10.	
2,4-Dinitrotoluene	121-14-2	<10.	10.	
Diethylphthalate	84-66-2	<10.	10.	
4-Chlorophenyl-phenylether	7005-72-3	<10.	10.	
Fluorene	86-73-7	<10.	10.	
4-Nitroaniline	100-01-6	<20.	20.	
4,6-Dinitro-2-methylphenol	534-52-1	<50.	50.	
N-Nitrosodiphenylamine (1)	86-30-6	<10.	10.	
4-Bromophenyl-phenylether	101-55-3	<10.	10.	
Hexachlorobenzene	118-74-1	<10.	10.	
Pentachlorophenol	87-86-5	<50.	50.	
Phenanthrene	85-01-8	<10.	10.	
Anthracene	120-12-7	<10.	10.	
Carbazole	86-74-8	<10.	10.	
Di-n-butylphthalate	84-74-2	7.8	10.	J
Fluoranthene	206-44-0	<10.	10.	
Pyrene	129-00-0	<10.	10.	
Butylbenzylphthalate	85-68-7	<10.	10.	
3,3'-Dichlorobenzidine	91-94-1	<20.	20.	
Benzo(a)anthracene	56-55-3	<10.	10.	
Chrysene	218-01-9	<10.	10.	
bis(2-Ethylhexyl)phthalate	117-81-7	<10.	10.	
Di-n-octylphthalate	117-84-0	<10.	10.	
Benzo(b)fluoranthene	205-99-2	<10.	10.	
Benzo(k)fluoranthene	207-08-9	<10.	10.	
Benzo(a)pyrene	50-32-8	<10.	10.	
Indeno(1,2,3-cd)pyrene	193-39-5	<10.	10.	
Dibenz(a,h)anthracene	53-70-3	<10.	10.	
Benzo(g,h,i)perylene	191-24-2	<10.	10.	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-5	LAL Sample ID:	L9145-8
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.996

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	65%	15-111
Phenol-d5	66%	21-110
Nitrobenzene-d5	70%	17-114
2-Fluorobiphenyl	77%	29-114
2,4,6-Tribromophenol	93%	33-136
Terphenyl-d14	125%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER
Phenol	108-95-2	<660	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	<660	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	<660	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	<660	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	<660	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<660	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-5	LAL Sample ID:	L9145-8
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.996

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER(s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	<660	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	<660	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo (a) anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis (2-Ethylhexyl) phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo (b) fluoranthene	205-99-2	<660	660	
Benzo (k) fluoranthene	207-08-9	<660	660	
Benzo (a) pyrene	50-32-8	<660	660	
Indeno (1,2,3-cd) pyrene	193-39-5	<660	660	
Dibenz (a,h) anthracene	53-70-3	<660	660	
Benzo (g,h,i) perylene	191-24-2	<660	660	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-10	LAL Sample ID:	L9145-9
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	60%	15-111
Phenol-d5	61%	21-110
Nitrobenzene-d5	64%	17-114
2-Fluorobiphenyl	73%	29-114
2,4,6-Tribromophenol	96%	33-136
Terphenyl-d14	123%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER
Phenol	108-95-2	<660	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	<660	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	<660	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	<660	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy) methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	<660	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<660	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-10	LAL Sample ID:	L9145-9
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (e)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	<660	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	<660	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo (a) anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis (2-Ethylhexyl) phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo (b) fluoranthene	205-99-2	<660	660	
Benzo (k) fluoranthene	207-08-9	<660	660	
Benzo (a) pyrene	50-32-8	<660	660	
Indeno (1,2,3-cd) pyrene	193-39-5	<660	660	
Dibenz (a,h) anthracene	53-70-3	<660	660	
Benzo (g,h,i) perylene	191-24-2	<660	660	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-15	LAL Sample ID:	L9145-10
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	70%	15-111
Phenol-d5	68%	21-110
Nitrobenzene-d5	72%	17-114
2-Fluorobiphenyl	81%	29-114
2,4,6-Tribromophenol	91%	33-136
Terphenyl-d14	122%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATE QUALIFIED
Phenol	108-95-2	<660	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	<660	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	<660	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	<660	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy) methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	<660	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<660	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

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SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-1-15	LAL Sample ID:	L9145-10
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	<660	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	<660	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-5	LAL Sample ID:	L9145-11
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.990

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	63%	15-111
Phenol-d5	62%	21-110
Nitrobenzene-d5	69%	17-114
2-Fluorobiphenyl	81%	29-114
2,4,6-Tribromophenol	98%	33-136
Terphenyl-d14	124%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATE QUALIFIED
Phenol	108-95-2	<650	650	
bis(2-Chloroethyl) ether	111-44-4	<650	650	
2-Chlorophenol	95-57-8	<650	650	
1,3-Dichlorobenzene	541-73-1	<650	650	
1,4-Dichlorobenzene	106-46-7	<650	650	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<650	650	
2-Methylphenol	95-48-7	<650	650	
bis(2-chloroisopropyl) ether	108-60-1	<650	650	
4-Methylphenol	106-44-5	<650	650	
N-Nitroso-di-n-propylamine	621-64-7	<650	650	
Hexachloroethane	67-72-1	<650	650	
Nitrobenzene	98-95-3	<650	650	
Isophorone	78-59-1	<650	650	
2-Nitrophenol	88-75-5	<650	650	
2,4-Dimethylphenol	105-67-9	<650	650	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<650	650	
2,4-Dichlorophenol	120-83-2	<650	650	
1,2,4-Trichlorobenzene	120-82-1	<650	650	
Naphthalene	91-20-3	<650	650	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<650	650	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<650	650	
Hexachlorocyclopentadiene	77-47-4	<650	650	
2,4,6-Trichlorophenol	88-06-2	<650	650	
2,4,5-Trichlorophenol	95-95-4	<650	650	
2-Chloronaphthalene	91-58-7	<650	650	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<650	650	
Acenaphthylene	208-96-8	<650	650	
2,6-Dinitrotoluene	606-20-2	<650	650	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<650	650	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-5	LAL Sample ID:	L9145-11
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.990

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<650	650	
2,4-Dinitrotolbene	121-14-2	<650	650	
Diethylphthalate	84-66-2	<650	650	
4-Chlorophenyl-phenylether	7005-72-3	<650	650	
Fluorene	86-73-7	<650	650	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<650	650	
4-Bromophenyl-phenylether	101-55-3	<650	650	
Hexachlorobenzene	118-74-1	<650	650	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<650	650	
Anthracene	120-12-7	<650	650	
Carbazole	86-74-8	<650	650	
Di-n-butylphthalate	84-74-2	<650	650	
Fluoranthene	206-44-0	<650	650	
Pyrene	129-00-0	<650	650	
Butylbenzylphthalate	85-68-7	<650	650	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<650	650	
Chrysene	218-01-9	<650	650	
bis(2-Ethylhexyl)phthalate	117-81-7	<650	650	
Di-n-octylphthalate	117-84-0	<650	650	
Benzo(b)fluoranthene	205-99-2	<650	650	
Benzo(k)fluoranthene	207-08-9	<650	650	
Benzo(a)pyrene	50-32-8	<650	650	
Indeno(1,2,3-cd)pyrene	193-39-5	<650	650	
Dibenz(a,h)anthracene	53-70-3	<650	650	
Benzo(g,h,i)perylene	191-24-2	<650	650	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-10	LAL Sample ID:	L9145-12
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.994

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	68%	15-111
Phenol-d5	66%	21-110
Nitrobenzene-d5	71%	17-114
2-Fluorobiphenyl	80%	29-114
2,4,6-Tribromophenol	93%	33-136
Terphenyl-d14	120%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIED (S)
Phenol	108-95-2	<660	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	<660	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	<660	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	<660	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy) methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	<660	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<660	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-10	LAL Sample ID:	L9145-12
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.994

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	<660	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	<660	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-15	LAL Sample ID:	L9145-14
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	61%	15-111
Phenol-d5	65%	21-110
Nitrobenzene-d5	68%	17-114
2-Fluorobiphenyl	79%	29-114
2,4,6-Tribromophenol	100%	33-136
Terphenyl-d14	128%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (S)
Phenol	108-95-2	<660	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	<660	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	<660	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	<660	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	<660	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<660	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS
8270 SEMI-VOLATILES

Client Sample ID:	SB6-2-15	LAL Sample ID:	L9145-14
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
Matrix:	Soil	Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	<660	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	<660	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Method Blank	LAL Sample ID:	47524MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	71%	31-110
Phenol-d5	76%	27-111
Nitrobenzene-d5	78%	40-114
2-Fluorobiphenyl	70%	41-111
2,4,6-Tribromophenol	88%	34-147
Terphenyl-d14	110%	33-141

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (S)
Phenol	108-95-2	<10.	10.	
bis(2-Chloroethyl) ether	111-44-4	<10.	10.	
2-Chlorophenol	95-57-8	<10.	10.	
1,3-Dichlorobenzene	541-73-1	<10.	10.	
1,4-Dichlorobenzene	106-46-7	<10.	10.	
Benzyl alcohol	100-51-6	<20.	20.	
1,2-Dichlorobenzene	95-50-1	<10.	10.	
2-Methylphenol	95-48-7	<10.	10.	
bis(2-chloroisopropyl) ether	108-60-1	<10.	10.	
4-Methylphenol	106-44-5	<10.	10.	
N-Nitroso-di-n-propylamine	621-64-7	<10.	10.	
Hexachloroethane	67-72-1	<10.	10.	
Nitrobenzene	98-95-3	<10.	10.	
Isophorone	78-59-1	<10.	10.	
2-Nitrophenol	88-75-5	<10.	10.	
2,4-Dimethylphenol	105-67-9	<10.	10.	
Benzoic acid	65-85-0	<50.	50.	
bis(2-Chloroethoxy)methane	111-91-1	<10.	10.	
2,4-Dichlorophenol	120-83-2	<10.	10.	
1,2,4-Trichlorobenzene	120-82-1	<10.	10.	
Naphthalene	91-20-3	<10.	10.	
4-Chloroaniline	106-47-8	<20.	20.	
Hexachlorobutadiene	87-68-3	<10.	10.	
4-Chloro-3-methylphenol	59-50-7	<20.	20.	
2-Methylnaphthalene	91-57-6	<10.	10.	
Hexachlorocyclopentadiene	77-47-4	<10.	10.	
2,4,6-Trichlorophenol	88-06-2	<10.	10.	
2,4,5-Trichlorophenol	95-95-4	<10.	10.	
2-Chloronaphthalene	91-58-7	<10.	10.	
2-Nitroaniline	88-74-4	<50.	50.	
Dimethylphthalate	131-11-3	<10.	10.	
Acenaphthylene	208-96-8	<10.	10.	
2,6-Dinitrotoluene	606-20-2	<10.	10.	
3-Nitroaniline	99-09-2	<50.	50.	
Acenaphthene	83-32-9	<10.	10.	
2,4-Dinitrophenol	51-28-5	<50.	50.	
4-Nitrophenol	100-02-7	<50.	50.	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Method Blank	LAL Sample ID:	47524MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(S)
Dibenzofuran	132-64-9	<10.	10.	
2,4-Dinitrotoluene	121-14-2	<10.	10.	
Diethylphthalate	84-66-2	<10.	10.	
4-Chlorophenyl-phenylether	7005-72-3	<10.	10.	
Fluorene	86-73-7	<10.	10.	
4-Nitroaniline	100-01-6	<20.	20.	
4,6-Dinitro-2-methylphenol	534-52-1	<50.	50.	
N-Nitrosodiphenylamine (1)	86-30-6	<10.	10.	
4-Bromophenyl-phenylether	101-55-3	<10.	10.	
Hexachlorobenzene	118-74-1	<10.	10.	
Pentachlorophenol	87-86-5	<50.	50.	
Phenanthrene	85-01-8	<10.	10.	
Anthracene	120-12-7	<10.	10.	
Carbazole	86-74-8	<10.	10.	
Di-n-butylphthalate	84-74-2	<10.	10.	
Fluoranthene	206-44-0	<10.	10.	
Pyrene	129-00-0	<10.	10.	
Butylbenzylphthalate	85-68-7	<10.	10.	
3,3'-Dichlorobenzidine	91-94-1	<20.	20.	
Benzo(a)anthracene	56-55-3	<10.	10.	
Chrysene	218-01-9	<10.	10.	
bis(2-Ethylhexyl)phthalate	117-81-7	<10.	10.	
Di-n-octylphthalate	117-84-0	<10.	10.	
Benzo(b)fluoranthene	205-99-2	<10.	10.	
Benzo(k)fluoranthene	207-08-9	<10.	10.	
Benzo(a)pyrene	50-32-8	<10.	10.	
Indeno(1,2,3-cd)pyrene	193-39-5	<10.	10.	
Dibenz(a,h)anthracene	53-70-3	<10.	10.	
Benzo(g,h,i)perylene	191-24-2	<10.	10.	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Method Blank	LAL Sample ID:	47674MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Batch ID:	050297-8270-L1
Percent Moisture:	N/A	Analytical Dilution:	1
		Preparation Dilution:	0.989

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	79%	15-111
Phenol-d5	76%	21-110
Nitrobenzene-d5	85%	17-114
2-Fluorobiphenyl	89%	29-114
2,4,6-Tribromophenol	106%	33-136
Terphenyl-d14	128%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER
Phenol	108-95-2	<650	650	
bis(2-Chloroethyl) ether	111-44-4	<650	650	
2-Chlorophenol	95-57-8	<650	650	
1,3-Dichlorobenzene	541-73-1	<650	650	
1,4-Dichlorobenzene	106-46-7	<650	650	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<650	650	
2-Methylphenol	95-48-7	<650	650	
bis(2-chloroisopropyl) ether	108-60-1	<650	650	
4-Methylphenol	106-44-5	<650	650	
N-Nitroso-di-n-propylamine	621-64-7	<650	650	
Hexachloroethane	67-72-1	<650	650	
Nitrobenzene	98-95-3	<650	650	
Isophorone	78-59-1	<650	650	
2-Nitrophenol	88-75-5	<650	650	
2,4-Dimethylphenol	105-67-9	<650	650	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy) methane	111-91-1	<650	650	
2,4-Dichlorophenol	120-83-2	<650	650	
1,2,4-Trichlorobenzene	120-82-1	<650	650	
Naphthalene	91-20-3	<650	650	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<650	650	
4-Chloro-3-methylphenol	59-50-7	<1300	1300	
2-Methylnaphthalene	91-57-6	<650	650	
Hexachlorocyclopentadiene	77-47-4	<650	650	
2,4,6-Trichlorophenol	88-06-2	<650	650	
2,4,5-Trichlorophenol	95-95-4	<650	650	
2-Chloronaphthalene	91-58-7	<650	650	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<650	650	
Acenaphthylene	208-96-8	<650	650	
2,6-Dinitrotoluene	606-20-2	<650	650	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	<650	650	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	<3300	3300	

LAS LABORATORIES

SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Method Blank	LAL Sample ID:	47674MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Batch ID:	050297-8270-L1
Percent Moisture:	N/A	Analytical Dilution:	1
		Preparation Dilution:	0.989

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (S)
Dibenzofuran	132-64-9	<650	650	
2,4-Dinitrotoluene	121-14-2	<650	650	
Diethylphthalate	84-66-2	<650	650	
4-Chlorophenyl-phenylether	7005-72-3	<650	650	
Fluorene	86-73-7	<650	650	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<650	650	
4-Bromophenyl-phenylether	101-55-3	<650	650	
Hexachlorobenzene	118-74-1	<650	650	
Pentachlorophenol	87-86-5	<3300	3300	
Phenanthrene	85-01-8	<650	650	
Anthracene	120-12-7	<650	650	
Carbazole	86-74-8	<650	650	
Di-n-butylphthalate	84-74-2	<650	650	
Fluoranthene	206-44-0	<650	650	
Pyrene	129-00-0	<650	650	
Butylbenzylphthalate	85-68-7	<650	650	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo (a) anthracene	56-55-3	<650	650	
Chrysene	218-01-9	<650	650	
bis (2-Ethylhexyl) phthalate	117-81-7	<650	650	
Di-n-octylphthalate	117-84-0	<650	650	
Benzo (b) fluoranthene	205-99-2	<650	650	
Benzo (k) fluoranthene	207-08-9	<650	650	
Benzo (a) pyrene	50-32-8	<650	650	
Indeno (1,2,3-cd) pyrene	193-39-5	<650	650	
Dibenz (a,h) anthracene	53-70-3	<650	650	
Benzo (g,h,i) perylene	191-24-2	<650	650	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	SB6-2-15	LAL Sample ID:	47674MS
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Batch ID:	050297-8270-L1
Percent Moisture:	N/A	Analytical Dilution:	1
		Preparation Dilution:	0.997

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	48%	15-111
Phenol-d5	63%	21-110
Nitrobenzene-d5	59%	17-114
2-Fluorobiphenyl	85%	29-114
2,4,6-Tribromophenol	100%	33-136
Terphenyl-d14	126%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (S)
Phenol	108-95-2	6400	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	5500	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	2300	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	5400	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	3700	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	9900	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	6200	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	9000	3300	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID: SB6-2-15
Date Collected: 09-APR-97
Date Analyzed: 02-MAY-97

LAL Sample ID: 47674MS
Date Received: 09-APR-97
Date Extracted: 23-APR-97
Analytical Batch ID: 050297-8270-L1
Analytical Dilution: 1
Preparation Dilution: 0.997

QC Group: 8270 SEMI-VOLATILES_47674
Percent Moisture: N/A

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	6000	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	8300	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	7200	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID: SB6-2-15
Date Collected: 09-APR-97
Date Analyzed: 02-MAY-97

LAL Sample ID: 47674MSD
Date Received: 09-APR-97
Date Extracted: 23-APR-97
Analytical Batch ID: 050297-8270-L1
Analytical Dilution: 1
Preparation Dilution: 0.997

QC Group: 8270 SEMI-VOLATILES_47674
Percent Moisture: N/A

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	71%	15-111
Phenol-d5	72%	21-110
Nitrobenzene-d5	75%	17-114
2-Fluorobiphenyl	90%	29-114
2,4,6-Tribromophenol	104%	33-136
Terphenyl-d14	124%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIED
Phenol	108-95-2	7300	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	7200	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	4000	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	5600	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	4900	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	10000	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	6300	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	8900	3300	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	SB6-2-15	LAL Sample ID:	47674MSD
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
		Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	6200	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	8200	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	7300	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47524LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	70%	31-110
Phenol-d5	76%	27-111
Nitrobenzene-d5	80%	40-114
2-Fluorobiphenyl	74%	41-111
2,4,6-Tribromophenol	97%	34-117
Terphenyl-d14	110%	33-141

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIED
Phenol	108-95-2	100	10.	
bis(2-Chloroethyl) ether	111-44-4	<10.	10.	
2-Chlorophenol	95-57-8	110	10.	
1,3-Dichlorobenzene	541-73-1	<10.	10.	
1,4-Dichlorobenzene	106-46-7	53.	10.	
Benzyl alcohol	100-51-6	<20.	20.	
1,2-Dichlorobenzene	95-50-1	<10.	10.	
2-Methylphenol	95-48-7	<10.	10.	
bis(2-chloroisopropyl) ether	108-60-1	<10.	10.	
4-Methylphenol	106-44-5	<10.	10.	
N-Nitroso-di-n-propylamine	621-64-7	90.	10.	
Hexachloroethane	67-72-1	<10.	10.	
Nitrobenzene	98-95-3	<10.	10.	
Isophorone	78-59-1	<10.	10.	
2-Nitrophenol	88-75-5	<10.	10.	
2,4-Dimethylphenol	105-67-9	<10.	10.	
Benzoic acid	65-85-0	<50.	50.	
bis(2-Chloroethoxy)methane	111-91-1	<10.	10.	
2,4-Dichlorophenol	120-83-2	<10.	10.	
1,2,4-Trichlorobenzene	120-82-1	62.	10.	
Naphthalene	91-20-3	<10.	10.	
4-Chloroaniline	106-47-8	<20.	20.	
Hexachlorobutadiene	87-68-3	<10.	10.	
4-Chloro-3-methylphenol	59-50-7	140	20.	
2-Methylnaphthalene	91-57-6	<10.	10.	
Hexachlorocyclopentadiene	77-47-4	<10.	10.	
2,4,6-Trichlorophenol	88-06-2	<10.	10.	
2,4,5-Trichlorophenol	95-95-4	<10.	10.	
2-Chloronaphthalene	91-58-7	<10.	10.	
2-Nitroaniline	88-74-4	<50.	50.	
Dimethylphthalate	131-11-3	<10.	10.	
Acenaphthylene	208-96-8	<10.	10.	
2,6-Dinitrotoluene	606-20-2	<10.	10.	
3-Nitroaniline	99-09-2	<50.	50.	
Acenaphthene	83-32-9	83.	10.	
2,4-Dinitrophenol	51-28-5	<50.	50.	
4-Nitrophenol	100-02-7	140	50.	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47524LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Batch ID:	041897-8270-K
		Analytical Dilution:	1
		Preparation Dilution:	1.00

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<10.	10.	
2,4-Dinitrotoluene	121-14-2	92.	10.	
Diethylphthalate	84-66-2	<10.	10.	
4-Chlorophenyl-phenylether	7005-72-3	<10.	10.	
Fluorene	86-73-7	<10.	10.	
4-Nitroaniline	100-01-6	<20.	20.	
4,6-Dinitro-2-methylphenol	534-52-1	<50.	50.	
N-Nitrosodiphenylamine (1)	86-30-6	<10.	10.	
4-Bromophenyl-phenylether	101-55-3	<10.	10.	
Hexachlorobenzene	118-74-1	<10.	10.	
Pentachlorophenol	87-86-5	130	50.	
Phenanthrene	85-01-8	<10.	10.	
Anthracene	120-12-7	<10.	10.	
Carbazole	86-74-8	<10.	10.	
Di-n-butylphthalate	84-74-2	<10.	10.	
Fluoranthene	206-44-0	<10.	10.	
Pyrene	129-00-0	100	10.	
Butylbenzylphthalate	85-68-7	<10.	10.	
3,3'-Dichlorobenzidine	91-94-1	<20.	20.	
Benzo(a)anthracene	56-55-3	<10.	10.	
Chrysene	218-01-9	<10.	10.	
bis(2-Ethylhexyl)phthalate	117-81-7	<10.	10.	
Di-n-octylphthalate	117-84-0	<10.	10.	
Benzo(b)fluoranthene	205-99-2	<10.	10.	
Benzo(k)fluoranthene	207-08-9	<10.	10.	
Benzo(a)pyrene	50-32-8	<10.	10.	
Indeno(1,2,3-cd)pyrene	193-39-5	<10.	10.	
Dibenz(a,h)anthracene	53-70-3	<10.	10.	
Benzo(g,h,i)perylene	191-24-2	<10.	10.	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample Dup	LAL Sample ID:	47524LCSDUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	77%	31-110
Phenol-d5	81%	27-111
Nitrobenzene-d5	82%	40-114
2-Fluorobiphenyl	78%	41-111
2,4,6-Tribromophenol	98%	34-147
Terphenyl-d14	117%	33-141

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIED
Phenol	108-95-2	110	10.	
bis(2-Chloroethyl) ether	111-44-4	<10.	10.	
2-Chlorophenol	95-57-8	120	10.	
1,3-Dichlorobenzene	541-73-1	<10.	10.	
1,4-Dichlorobenzene	106-46-7	57.	10.	
Benzyl alcohol	100-51-6	<20.	20.	
1,2-Dichlorobenzene	95-50-1	<10.	10.	
2-Methylphenol	95-48-7	<10.	10.	
bis(2-chloroisopropyl) ether	108-60-1	<10.	10.	
4-Methylphenol	106-44-5	<10.	10.	
N-Nitroso-di-n-propylamine	621-64-7	98.	10.	
Hexachloroethane	67-72-1	<10.	10.	
Nitrobenzene	98-95-3	<10.	10.	
Isophorone	78-59-1	<10.	10.	
2-Nitrophenol	88-75-5	<10.	10.	
2,4-Dimethylphenol	105-67-9	<10.	10.	
Benzoic acid	65-85-0	<50.	50.	
bis(2-Chloroethoxy)methane	111-91-1	<10.	10.	
2,4-Dichlorophenol	120-83-2	<10.	10.	
1,2,4-Trichlorobenzene	120-82-1	65.	10.	
Naphthalene	91-20-3	<10.	10.	
4-Chloroaniline	106-47-8	<20.	20.	
Hexachlorobutadiene	87-68-3	<10.	10.	
4-Chloro-3-methylphenol	59-50-7	140	20.	
2-Methylnaphthalene	91-57-6	<10.	10.	
Hexachlorocyclopentadiene	77-47-4	<10.	10.	
2,4,6-Trichlorophenol	88-06-2	<10.	10.	
2,4,5-Trichlorophenol	95-95-4	<10.	10.	
2-Chloronaphthalene	91-58-7	<10.	10.	
2-Nitroaniline	88-74-4	<50.	50.	
Dimethylphthalate	131-11-3	<10.	10.	
Acenaphthylene	208-96-8	<10.	10.	
2,6-Dinitrotoluene	606-20-2	<10.	10.	
3-Nitroaniline	99-09-2	<50.	50.	
Acenaphthene	83-32-9	87.	10.	
2,4-Dinitrophenol	51-28-5	<50.	50.	
4-Nitrophenol	100-02-7	130	50.	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample Dup	LAL Sample ID:	47524LCSDUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
Dibenzofuran	132-64-9	<10.	10.	
2,4-Dinitrotoluene	121-14-2	96.	10.	
Diethylphthalate	84-66-2	<10.	10.	
4-Chlorophenyl-phenylether	7005-72-3	<10.	10.	
Fluorene	86-73-7	<10.	10.	
4-Nitroaniline	100-01-6	<20.	20.	
4,6-Dinitro-2-methylphenol	534-52-1	<50.	50.	
N-Nitrosodiphenylamine (1)	86-30-6	<10.	10.	
4-Bromophenyl-phenylether	101-55-3	<10.	10.	
Hexachlorobenzene	118-74-1	<10.	10.	
Pentachlorophenol	87-86-5	140	50.	
Phenanthrene	85-01-8	<10.	10.	
Anthracene	120-12-7	<10.	10.	
Carbazole	86-74-8	<10.	10.	
Di-n-butylphthalate	84-74-2	<10.	10.	
Fluoranthene	206-44-0	<10.	10.	
Pyrene	129-00-0	110	10.	
Butylbenzylphthalate	85-68-7	<10.	10.	
3,3'-Dichlorobenzidine	91-94-1	<20.	20.	
Benzo (a) anthracene	56-55-3	<10.	10.	
Chrysene	218-01-9	<10.	10.	
bis (2-Ethylhexyl) phthalate	117-81-7	<10.	10.	
Di-n-octylphthalate	117-84-0	<10.	10.	
Benzo (b) fluoranthene	205-99-2	<10.	10.	
Benzo (k) fluoranthene	207-08-9	<10.	10.	
Benzo (a) pyrene	50-32-8	<10.	10.	
Indeno (1,2,3-cd) pyrene	193-39-5	<10.	10.	
Dibenz (a,h) anthracene	53-70-3	<10.	10.	
Benzo (g,h,i) perylene	191-24-2	<10.	10.	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47674LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Batch ID:	050297-8270-L1
Percent Moisture:	N/A	Analytical Dilution:	1
		Preparation Dilution:	0.999

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	63%	15-111
Phenol-d5	71%	21-110
Nitrobenzene-d5	74%	17-114
2-Fluorobiphenyl	91%	29-114
2,4,6-Tribromophenol	105%	33-136
Terphenyl-d14	128%	32-151

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTIFICATION LIMIT ug/Kg	DATA QUALIFIED (S)
Phenol	108-95-2	7400	660	
bis(2-Chloroethyl) ether	111-44-4	<660	660	
2-Chlorophenol	95-57-8	7000	660	
1,3-Dichlorobenzene	541-73-1	<660	660	
1,4-Dichlorobenzene	106-46-7	3700	660	
Benzyl alcohol	100-51-6	<1300	1300	
1,2-Dichlorobenzene	95-50-1	<660	660	
2-Methylphenol	95-48-7	<660	660	
bis(2-chloroisopropyl) ether	108-60-1	<660	660	
4-Methylphenol	106-44-5	<660	660	
N-Nitroso-di-n-propylamine	621-64-7	5600	660	
Hexachloroethane	67-72-1	<660	660	
Nitrobenzene	98-95-3	<660	660	
Isophorone	78-59-1	<660	660	
2-Nitrophenol	88-75-5	<660	660	
2,4-Dimethylphenol	105-67-9	<660	660	
Benzoic acid	65-85-0	<3300	3300	
bis(2-Chloroethoxy)methane	111-91-1	<660	660	
2,4-Dichlorophenol	120-83-2	<660	660	
1,2,4-Trichlorobenzene	120-82-1	4900	660	
Naphthalene	91-20-3	<660	660	
4-Chloroaniline	106-47-8	<1300	1300	
Hexachlorobutadiene	87-68-3	<660	660	
4-Chloro-3-methylphenol	59-50-7	10000	1300	
2-Methylnaphthalene	91-57-6	<660	660	
Hexachlorocyclopentadiene	77-47-4	<660	660	
2,4,6-Trichlorophenol	88-06-2	<660	660	
2,4,5-Trichlorophenol	95-95-4	<660	660	
2-Chloronaphthalene	91-58-7	<660	660	
2-Nitroaniline	88-74-4	<3300	3300	
Dimethylphthalate	131-11-3	<660	660	
Acenaphthylene	208-96-8	<660	660	
2,6-Dinitrotoluene	606-20-2	<660	660	
3-Nitroaniline	99-09-2	<3300	3300	
Acenaphthene	83-32-9	6400	660	
2,4-Dinitrophenol	51-28-5	<3300	3300	
4-Nitrophenol	100-02-7	9600	3300	

LAS LABORATORIES

SPIKED SAMPLE RESULT
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47674LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
		Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.999

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER(S)
Dibenzofuran	132-64-9	<660	660	
2,4-Dinitrotoluene	121-14-2	6300	660	
Diethylphthalate	84-66-2	<660	660	
4-Chlorophenyl-phenylether	7005-72-3	<660	660	
Fluorene	86-73-7	<660	660	
4-Nitroaniline	100-01-6	<3300	3300	
4,6-Dinitro-2-methylphenol	534-52-1	<3300	3300	
N-Nitrosodiphenylamine (1)	86-30-6	<660	660	
4-Bromophenyl-phenylether	101-55-3	<660	660	
Hexachlorobenzene	118-74-1	<660	660	
Pentachlorophenol	87-86-5	10000	3300	
Phenanthrene	85-01-8	<660	660	
Anthracene	120-12-7	<660	660	
Carbazole	86-74-8	<660	660	
Di-n-butylphthalate	84-74-2	<660	660	
Fluoranthene	206-44-0	<660	660	
Pyrene	129-00-0	7400	660	
Butylbenzylphthalate	85-68-7	<660	660	
3,3'-Dichlorobenzidine	91-94-1	<1300	1300	
Benzo(a)anthracene	56-55-3	<660	660	
Chrysene	218-01-9	<660	660	
bis(2-Ethylhexyl)phthalate	117-81-7	<660	660	
Di-n-octylphthalate	117-84-0	<660	660	
Benzo(b)fluoranthene	205-99-2	<660	660	
Benzo(k)fluoranthene	207-08-9	<660	660	
Benzo(a)pyrene	50-32-8	<660	660	
Indeno(1,2,3-cd)pyrene	193-39-5	<660	660	
Dibenz(a,h)anthracene	53-70-3	<660	660	
Benzo(g,h,i)perylene	191-24-2	<660	660	

LAS LABORATORIES

MATRIX SPIKE DATA SUMMARY
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID: SB6-2-15
Date Collected: 09-APR-97
Date Analyzed: 02-MAY-97

LAL Sample ID: 47674MS
Date Received: 09-APR-97
Date Extracted: 23-APR-97
Analytical Batch ID: 050297-8270-L1
Analytical Dilution: 1
Preparation Dilution: 0.997

QC Group: 8270 SEMI-VOLATILES_47674
Percent Moisture: N/A

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	48%	15-111
Phenol-d5	63%	21-110
Nitrobenzene-d5	59%	17-114
2-Fluorobiphenyl	85%	29-114
2,4,6-Tribromophenol	100%	33-136
Terphenyl-d14	126%	32-151

Constituent	Spike Added ug/Kg	Sample Concentration ug/Kg	MS Concentration ug/Kg	%	QC Limits	
					Recovery	Recovery
Phenol	9970	0.000	6390	64	28-110	
2-Chlorophenol	9970	0.000	5480	55	22-110	
1,4-Dichlorobenzene	6640	0.000	2250	34	21-110	
N-Nitroso-di-n-propylamine	6640	0.000	5380	81	24-110	
1,2,4-Trichlorobenzene	6640	0.000	3700	56	32-110	
4-Chloro-3-methylphenol	9970	0.000	9930	100	35-112	
Acenaphthene	6640	0.000	6160	93	31-117	
4-Nitrophenol	9970	0.000	8990	90	29-127	
2,4-Dinitrotoluene	6640	0.000	5990	90	51-	
Pentachlorophenol	9970	0.000	8320	83	41-	
Pyrene	6640	0.000	7230	109	45-135	

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	SB6-2-15	LAL Sample ID:	47674MSD
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
		Analytical Batch ID:	050297-8270-L1
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	0.997

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	71%	15-111
Phenol-d5	72%	21-110
Nitrobenzene-d5	75%	17-114
2-Fluorobiphenyl	90%	29-114
2,4,6-Tribromophenol	104%	33-136
Terphenyl-d14	124%	32-151

Constituent	Spike Added ug/Kg	MSD Concentration ug/Kg	Recovery	RPD	QC Limits	
					RPD	Recovery
Phenol	9970	7280	73	13	35	28-110
2-Chlorophenol	9970	7230	73	28	50	22-110
1,4-Dichlorobenzene	6650	4020	60	56*	27	21-110
N-Nitroso-di-n-propylamine	6650	5560	84	3	38	24-110
1,2,4-Trichlorobenzene	6650	4870	73	27*	23	32-110
4-Chloro-3-methylphenol	9970	10200	102	3	33	35-112
Acenaphthene	6650	6310	95	2	19	31-117
4-Nitrophenol	9970	8940	90	1	50	29-127
2,4-Dinitrotoluene	6650	6180	93	3	47	51-112
Pentachlorophenol	9970	8150	82	2	47	41-133
Pyrene	6650	7250	109	0	36	45-135

LAS LABORATORIES

LCS DATA SUMMARY
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47524LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	70%	31-110
Phenol-d5	76%	27-111
Nitrobenzene-d5	80%	40-114
2-Fluorobiphenyl	74%	41-111
2,4,6-Tribromophenol	97%	38-147
Terphenyl-d14	110%	33-141

Constituent	Spike Added ug/L	LCS Concentration ug/L	LCS Recovery %	QC Limits
Phenol	150	104	69	11-118
2-Chlorophenol	150	107	71	19-123
1,4-Dichlorobenzene	100	52.5	53	13-110
N-Nitroso-di-n-propylamine	100	89.5	90	35-125
1,2,4-Trichlorobenzene	100	62.0	62	19-113
4-Chloro-3-methylphenol	150	137	91	28-134
Acenaphthene	100	82.5	83	46-116
4-Nitrophenol	150	135	90	10-125
2,4-Dinitrotoluene	100	91.8	92	33-133
Pentachlorophenol	150	130	87	10-162
Pyrene	100	99.7	100	60-123

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample Dup	LAL Sample ID:	47524LCS DUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	18-APR-97	Date Extracted:	15-APR-97
		Analytical Batch ID:	041897-8270-K
QC Group:	8270 SEMI-VOLATILES_47524	Analytical Dilution:	1
		Preparation Dilution:	1.00

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	77%	31-110
Phenol-d5	81%	27-111
Nitrobenzene-d5	82%	40-114
2-Fluorobiphenyl	78%	41-111
2,4,6-Tribromophenol	98%	34-147
Terphenyl-d14	117%	33-141

Constituent	Spike Added ug/L	LCS DUP Concentration ug/L	% Recovery	RPD	QC Limits	
					RPD	% Recovery
Phenol	150	111	74	7	42	11-118
2-Chlorophenol	150	116	77	8	40	19-123
1,4-Dichlorobenzene	100	56.7	57	8	28	13-110
N-Nitroso-di-n-propylamine	100	98.2	98	9	38	35-125
1,2,4-Trichlorobenzene	100	64.9	65	5	28	19-113
4-Chloro-3-methylphenol	150	140	93	2	42	28-134
Acenaphthene	100	87.0	87	5	31	46-116
4-Nitrophenol	150	133	89	1	50	10-125
2,4-Dinitrotoluene	100	96.2	96	5	38	33-133
Pentachlorophenol	150	144	96	10	50	10-162
Pyrene	100	105	105	5	31	60-123

LAS LABORATORIES

LCS DATA SUMMARY
SEMI-VOLATILE ORGANICS BY GC/MS

Client Sample ID:	Lab Ctrl Sample	LAL Sample ID:	47674LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	02-MAY-97	Date Extracted:	23-APR-97
QC Group:	8270 SEMI-VOLATILES_47674	Analytical Batch ID:	050297-8270-L1
Percent Moisture:	N/A	Analytical Dilution:	1
		Preparation Dilution:	0.999

SURROGATE	RECOVERY	QC Limits
2-Fluorophenol	63%	15-111
Phenol-d5	71%	21-110
Nitrobenzene-d5	74%	17-114
2-Fluorobiphenyl	91%	29-114
2,4,6-Tribromophenol	105%	33-136
Terphenyl-d14	128%	32-151

Constituent	Spike Added ug/Kg	LCS Concentration ug/Kg	LCS % Recovery	QC Limits
Phenol	9990	7360	74	28-110
2-Chlorophenol	9990	7020	70	22-110
1,4-Dichlorobenzene	6660	3660	55	21-110
N-Nitroso-di-n-propylamine	6660	5630	85	24-110
1,2,4-Trichlorobenzene	6660	4880	73	32-110
4-Chloro-3-methylphenol	9990	10400	104	35-112
Acenaphthene	6660	6370	96	31-117
4-Nitrophenol	9990	9560	96	29-127
2,4-Dinitrotoluene	6660	6270	94	51-112
Pentachlorophenol	9990	10400	104	41-133
Pyrene	6660	7370	111	45-135

LAS LABORATORIES

SEMI-VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: hpk

Date/Time Analyzed: 18-APR-97 1459

Analytical Batch ID: 041897-8270-K

		IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
		Area #	RT #	Area #	RT #	Area #	RT
=====		=====	=====	=====	=====	=====	=====
12 HOUR STD		179644	5.00	547136	6.24	309737	8.62
UPPER LIMIT		359288	5.50	1094272	6.74	619474	9.12
LOWER LIMIT		89822	4.50	273568	5.74	154869	8.12
=====		=====	=====	=====	=====	=====	=====
CUSTOMER	LAS						
SAMPLE ID	SAMPLE ID						
032650-001 GRAPHITE BLOC	47539MSD	164819	5.01	540122	6.24	309041	8.6
Method Blank	47524MB	161774	5.01	531372	6.24	306323	8.6
Lab Ctrl Sample	47524LCS	160474	5.01	519657	6.24	307592	8.6
Lab Ctrl Sample Dup	47524LCSDUP	167945	5.01	564228	6.24	321150	8.6
M97	L9145-6	147719	5.01	486499	6.24	282606	8.6
032650-001 GRAPHITE BLOC	47539MSD RE	222238	5.01	735929	6.24	418837	8.6

IS1 (DCB) = 1,4-Dichlorobenzene-d4
 IS2 (NPT) = Naphthalene-d8
 IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = -50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
 * Values outside of QC limits.

LAS LABORATORIES

SEMI-VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: hpk

Date/Time Analyzed: 18-APR-97 1459

Analytical Batch ID: 041897-8270-K

		IS4 (PHN)		ISS (CRY)		IS6 (PRY)	
		Area #	RT #	Area #	RT #	Area #	RT
-----		-----		-----		-----	
12 HOUR STD		397210	11.19	263282	16.35	208289	18.16
UPPER LIMIT		794420	11.69	526564	16.85	416578	19.46
LOWER LIMIT		198605	10.69	131641	15.85	104145	18.46
-----		-----		-----		-----	
CUSTOMER	LAS						
SAMPLE ID	SAMPLE ID						
032650-001 GRAPHITE BLOC	47539MSD	410345	11.19	250041	16.34	188986	18.9
Method Blank	47524MB	417796	11.18	269626	16.33	209264	18.9
Lab Ctrl Sample	47524LCS	444389	11.19	257357	16.33	207447	18.9
Lab Ctrl Sample Dup	47524LCSDUP	418812	11.19	256823	16.33	222922	18.9
M97	L9145-6	375546	11.19	238306	16.33	220302	18.9
032650-001 GRAPHITE BLOC	47539MSD RE	579804	11.18	346502	16.33	269571	18.9

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

LAS LABORATORIES

SEMI-VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: hpl

Date/Time Analyzed: 02-MAY-97 1453

Analytical Batch ID: 050297-8270-L1

		IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
		Area #	RT #	Area #	RT #	Area #	RT #

12 HOUR STD		182248	5.89	642125	7.29	284539	9.89
UPPER LIMIT		364496	6.39	1284250	7.79	569078	10.39
LOWER LIMIT		91124	5.39	321063	6.79	142270	9.39

CUSTOMER	LAS						
SAMPLE ID	SAMPLE ID						
Method Blank	47674MB	203153	5.90	680883	7.29	313123	9.90
Lab Ctrl Sample	47674LCS	199783	5.90	673797	7.30	292462	9.90
SB6-1-5	L9145-8	203854	5.90	713715	7.29	322760	9.90
SB6-1-10	L9145-9	166792	5.90	558647	7.29	254281	9.80
SB6-1-15	L9145-10	137780	5.89	479857	7.28	222331	9.80
SB6-2-5	L9145-11	163803	5.89	539641	7.28	237425	9.80
SB6-2-10	L9145-12	213613	5.89	727730	7.28	309954	9.80
SB6-2-15	L9145-14	192498	5.89	627368	7.28	283353	9.80
SB6-2-15MS	47674MS	182253	5.89	623321	7.29	270029	9.80
SB6-2-15MSD	47674MSD	222517	5.89	732437	7.29	326043	9.80
Method Blank	48016MB	219343	5.89	748342	7.28	324014	9.80
Lab Ctrl Sample	48016LCS	166628	5.89	560295	7.29	253287	9.80
Lab Ctrl Sample Dup	48016LCSDUP	194842	5.89	656127	7.29	273430	9.80

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

LAS LABORATORIES

SEMI-VOLATILE INTERNAL STANDARD
AREA AND RT SUMMARY

Instrument ID: hpl

Date/Time Analyzed: 02-MAY-97 1453

Analytical Batch ID: 050297-8270-L1

		IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
		Area #	RT #	Area #	RT #	Area #	RT
=====		=====	=====	=====	=====	=====	=====
12 HOUR STD		390596	12.57	324617	17.80	300158	20.45
UPPER LIMIT		781192	13.07	649234	18.30	600316	20.95
LOWER LIMIT		195298	12.07	162309	17.30	150079	19.95
=====		=====	=====	=====	=====	=====	=====
CUSTOMER	LAS						
SAMPLE ID	SAMPLE ID						
Method Blank	47674MB	447148	12.58	347260	17.81	325385	20.45
Lab Ctrl Sample	47674LCS	408808	12.58	324067	17.80	308463	20.45
SB6-1-5	L9145-8	425019	12.57	313116	17.80	287341	20.45
SB6-1-10	L9145-9	359187	12.57	286663	17.80	271148	20.45
SB6-1-15	L9145-10	301633	12.57	225814	17.79	210569	20.45
SB6-2-5	L9145-11	337093	12.56	279404	17.79	263773	20.45
SB6-2-10	L9145-12	416494	12.57	310160	17.80	291357	20.45
SB6-2-15	L9145-14	393272	12.57	301922	17.79	287197	20.45
SB6-2-15MS	47674MS	372871	12.57	301344	17.80	287414	20.45
SB6-2-15MSD	47674MSD	468424	12.57	379657	17.80	366011	20.45
Method Blank	48016MB	437786	12.56	327667	17.79	307125	20.45
Lab Ctrl Sample	48016LCS	365248	12.57	321581	17.80	303928	20.45
Lab Ctrl Sample Dup	48016LCSDUP	388390	12.57	369157	17.81	373175	20.45

IS4 (PHN) = Phenanthrene-d10
 IS5 (CRY) = Chrysene-d12
 IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = -50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside of QC limits with an asterisk.
 * Values outside of QC limits.

RUN LOGS/EXTRACTION SHEETS

ANA (Y6)	DATE OF INJ	TIME OF INJ	IAS SAMPLE ID	DESCRIPTION/CLIENT SAMPLE ID	SOLUTION ID	MATRIX/DILUTION	DATA FILE	BATCH ID	METHOD FILE	TAPE ID	DRY	COMMENTS
	1/11/11	11:12	1101001	1101001			1101001					
	1/11/11	11:12	1101002	1101002			1101002					
	1/11/11	11:12	1101003	1101003			1101003					
	1/11/11	11:12	1101004	1101004			1101004					
	1/11/11	11:12	1101005	1101005			1101005					
	1/11/11	11:12	1101006	1101006			1101006					
	1/11/11	11:12	1101007	1101007			1101007					
	1/11/11	11:12	1101008	1101008			1101008					
	1/11/11	11:12	1101009	1101009			1101009					
	1/11/11	11:12	1101010	1101010			1101010					
	1/11/11	11:12	1101011	1101011			1101011					
	1/11/11	11:12	1101012	1101012			1101012					
	1/11/11	11:12	1101013	1101013			1101013					
	1/11/11	11:12	1101014	1101014			1101014					
	1/11/11	11:12	1101015	1101015			1101015					
	1/11/11	11:12	1101016	1101016			1101016					
	1/11/11	11:12	1101017	1101017			1101017					
	1/11/11	11:12	1101018	1101018			1101018					
	1/11/11	11:12	1101019	1101019			1101019					
	1/11/11	11:12	1101020	1101020			1101020					
	1/11/11	11:12	1101021	1101021			1101021					
	1/11/11	11:12	1101022	1101022			1101022					
	1/11/11	11:12	1101023	1101023			1101023					
	1/11/11	11:12	1101024	1101024			1101024					
	1/11/11	11:12	1101025	1101025			1101025					
	1/11/11	11:12	1101026	1101026			1101026					
	1/11/11	11:12	1101027	1101027			1101027					
	1/11/11	11:12	1101028	1101028			1101028					
	1/11/11	11:12	1101029	1101029			1101029					
	1/11/11	11:12	1101030	1101030			1101030					
	1/11/11	11:12	1101031	1101031			1101031					
	1/11/11	11:12	1101032	1101032			1101032					
	1/11/11	11:12	1101033	1101033			1101033					
	1/11/11	11:12	1101034	1101034			1101034					
	1/11/11	11:12	1101035	1101035			1101035					
	1/11/11	11:12	1101036	1101036			1101036					
	1/11/11	11:12	1101037	1101037			1101037					
	1/11/11	11:12	1101038	1101038			1101038					
	1/11/11	11:12	1101039	1101039			1101039					
	1/11/11	11:12	1101040	1101040			1101040					
	1/11/11	11:12	1101041	1101041			1101041					
	1/11/11	11:12	1101042	1101042			1101042					
	1/11/11	11:12	1101043	1101043			1101043					
	1/11/11	11:12	1101044	1101044			1101044					
	1/11/11	11:12	1101045	1101045			1101045					
	1/11/11	11:12	1101046	1101046			1101046					
	1/11/11	11:12	1101047	1101047			1101047					
	1/11/11	11:12	1101048	1101048			1101048					
	1/11/11	11:12	1101049	1101049			1101049					
	1/11/11	11:12	1101050	1101050			1101050					
	1/11/11	11:12	1101051	1101051			1101051					
	1/11/11	11:12	1101052	1101052			1101052					
	1/11/11	11:12	1101053	1101053			1101053					
	1/11/11	11:12	1101054	1101054			1101054					
	1/11/11	11:12	1101055	1101055			1101055					
	1/11/11	11:12	1101056	1101056			1101056					
	1/11/11	11:12	1101057	1101057			1101057					
	1/11/11	11:12	1101058	1101058			1101058					
	1/11/11	11:12	1101059	1101059			1101059					
	1/11/11	11:12	1101060	1101060			1101060					

GC/MS EVOA DMW

For Data Reportable (DR) Column: DMW - Do Not Report; Rep - Report (GC failure, report with another analysis); OK - Report (No GC failure)

ANA LYS	DATE OF INJ	TIME OF INJ	LAS SAMPLE ID	REVIEWED BY	DESCRIPTION / CLIENT SAMPLE ID	SOLUTION ID	MATRIX / DILUTION	DATA FILE	BATCH ID	METHOD FILE	TAPE ID	DRY	COMMENTS
	1/19/01	17:17	42216		42216	0766-45-20	100	1228002	1001111	1027002		UNK	
			42217		42217	0766-45-20	100	1228003				UNK	st- 799-xxx internal
			42218		42218	0766-45-20	100	1228004				UNK	OK
			42219		42219	0766-45-20	100	1228005				UNK	OK
			42220		42220	0766-45-20	100	1228006				UNK	OK
			42221		42221	0766-45-20	100	1228007				UNK	OK
			42222		42222	0766-45-20	100	1228008				UNK	OK
			42223		42223	0766-45-20	100	1228009				UNK	OK
			42224		42224	0766-45-20	100	1228010				UNK	OK
			42225		42225	0766-45-20	100	1228011				UNK	OK
			42226		42226	0766-45-20	100	1228012				UNK	OK
			42227		42227	0766-45-20	100	1228013				UNK	OK
			42228		42228	0766-45-20	100	1228014				UNK	OK
			42229		42229	0766-45-20	100	1228015				UNK	OK
			42230		42230	0766-45-20	100	1228016				UNK	OK
			42231		42231	0766-45-20	100	1228017				UNK	OK
			42232		42232	0766-45-20	100	1228018				UNK	OK
			42233		42233	0766-45-20	100	1228019				UNK	OK
			42234		42234	0766-45-20	100	1228020				UNK	OK
			42235		42235	0766-45-20	100	1228021				UNK	OK
			42236		42236	0766-45-20	100	1228022				UNK	OK
			42237		42237	0766-45-20	100	1228023				UNK	OK
			42238		42238	0766-45-20	100	1228024				UNK	OK
			42239		42239	0766-45-20	100	1228025				UNK	OK
			42240		42240	0766-45-20	100	1228026				UNK	OK
			42241		42241	0766-45-20	100	1228027				UNK	OK
			42242		42242	0766-45-20	100	1228028				UNK	OK
			42243		42243	0766-45-20	100	1228029				UNK	OK
			42244		42244	0766-45-20	100	1228030				UNK	OK
			42245		42245	0766-45-20	100	1228031				UNK	OK
			42246		42246	0766-45-20	100	1228032				UNK	OK
			42247		42247	0766-45-20	100	1228033				UNK	OK
			42248		42248	0766-45-20	100	1228034				UNK	OK
			42249		42249	0766-45-20	100	1228035				UNK	OK
			42250		42250	0766-45-20	100	1228036				UNK	OK
			42251		42251	0766-45-20	100	1228037				UNK	OK
			42252		42252	0766-45-20	100	1228038				UNK	OK
			42253		42253	0766-45-20	100	1228039				UNK	OK
			42254		42254	0766-45-20	100	1228040				UNK	OK
			42255		42255	0766-45-20	100	1228041				UNK	OK
			42256		42256	0766-45-20	100	1228042				UNK	OK
			42257		42257	0766-45-20	100	1228043				UNK	OK
			42258		42258	0766-45-20	100	1228044				UNK	OK
			42259		42259	0766-45-20	100	1228045				UNK	OK
			42260		42260	0766-45-20	100	1228046				UNK	OK

For Data Reportable? (DR?) Column: DR? - Do Not Report; Rep - Report (QC failure, report with another analysis); CR - Report (file QC failure)

OC MS 8 VOA UNK

HTF=AKH 05/15/99
DIVE

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs08)
EXTRACTION SHEET FOR: 8270 SEMI-VOLATILES EXTRACTION
WORKSHEET NUMBER: 8270 SEMI-VOLATILES_47524

standing spine
material

LAB #	GC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/EXTR CREATED	(VOL) AMT EXTR SP	SURR ML	SAMPLE PH	1ST COOK FINAL VOL MLS	TOTAL VOL ON GPC	2ND COOK FINAL VOL MLS	BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
47524LCS	LCS	Lab Ctrl Sample Dup		15-APR-97	4-15-99	1.0	7	0.5	N/A	N/A	1.0ml	2/ml
L9145-6	LCS	M97	09-APR-97	09-APR-97	1.000ml		7					
L9177-16	LCS	BLDG. 374/RM. 3810-00	108-APR-97	12-APR-97	1.000ml		7					
L9177-18	LCS	BLDG. 374/RM. 3810-02	108-APR-97	12-APR-97	980ml		7					
L9177-19	LCS	BLDG. 374/RM. 3810-03	108-APR-97	12-APR-97	980ml		7					
L9177-20	LCS	BLDG. 374/RM. 3810-04	108-APR-97	12-APR-97	980ml		7					
47524MB	MB	Method Blank		15-APR-97	1.000ml		7					
47524LCS	LCS	Lab Ctrl Sample		15-APR-97	1.000ml		7					
47524LCS	LCS	Spike Lot Sample		15-APR-97	1.000ml		7					

QUB 04-15-97

EXTRACTION METHOD: Continuum - 85200
 EXTRACTION STARTED : 4-15-97 EXTRACTION COMPLETED : 4-17-97
 DATE & TIME STARTED (acid): 4-15-97 2:00 PM DATE & TIME COMPLETED (acid): 4-16-97 8:00 AM
 DATE & TIME STARTED (BN) : 4-16-97 9:00 AM DATE & TIME COMPLETED (BN) : 4-17-97 12:00 PM
 GC BATCH# : 8270 SEMI-VOLATILES_47524
 SURR ID # : 0859-83-3 CONC: 100/100 MECL2 : 36240
 MS ID # : 0859-60-3 CONC: 100/100 ACETONE: N/A
 SIGNED: Steve Ottis
 SIGNED: James Michels
 SPOIKED WITNESS: James Michels
 SIGNED: _____
 REVIEWED BY: James Michels DATE: 4-18-97
 EXTRACT COC: RECEIVED BY: _____
 RECEIVED BY: _____ DATE: _____

HT = 01/23
01/19/97
01/19/97
01/19/97

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs08)

EXTRACTION SHEET FOR: 8270 SEMI-VOLATILES EXTRACTION

WORKSHEET NUMBER: 8270 SEMI-VOLATILES_47674

Subsamps
in VOA

LAL #	GC TR.	CLIENT ID	DATE COLLECTED	DATE RECEIVED/ CREATED	VOL. (μL) EXTR	SAMPLE PH	SURR ML	MS ML	1ST COOK FINAL VOL MLS	TOTAL VOL ON GPC	2ND COOK FINAL VOL MLS	BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9145-8	2	S86-1-5	09-APR-97	09-APR-97	OK 4-23-97	N/A	2.0		20.5ml	N/A	N/A	2.0ml	≈ 1/2 ml
L9145-9		S86-1-10	09-APR-97	09-APR-97	30.12								
L9145-10		S86-1-15	09-APR-97	09-APR-97	30.01								
L9145-11		S86-2-5	09-APR-97	09-APR-97	30.10								
L9145-12		S86-2-10	09-APR-97	09-APR-97	30.30								
L9145-14		S86-2-15	09-APR-97	09-APR-97	30.19								
47674MB	MB	Method Blank	09-APR-97	09-APR-97	30.10								
47674LCS	LCS	Lab Ctrl Sample	17-APR-97	17-APR-97	30.33			2.0					
47674MS	MS	Matrix Spike	09-APR-97	17-APR-97	30.04								
47674MSD	MSD	Matrix Spike Dup	09-APR-97	17-APR-97	30.10								
SP-HKEL01-47674	SP-HKEL01	Spike tot Sample	09-APR-97	17-APR-97	30.09								

04/20/97

EXTRACTION METHOD: Sollicitation - 350A

EXTRACTION STARTED : 4-23-97

DATE & TIME STARTED (ocld): N/A

DATE & TIME STARTED (BN) : N/A

GC BATCH# : 8270 SEMI-VOLATILES_47674

SURR ID # : 0859-83-3

MS ID # : 0859-60-3

EXTRACTION COMPLETED : 4-23-97

DATE & TIME COMPLETED (ocld): N/A

DATE & TIME COMPLETED (BN) : N/A

LOT #'S

MECL2 : 36240

ACETONE : 36036

MS2004 : K39636

SIGNED: [Signature]

SIGNED: [Signature]

SPIKED WITNESS: [Signature]

SIGNED: [Signature]

REVIEWED BY: [Signature]

DATE: 4/21

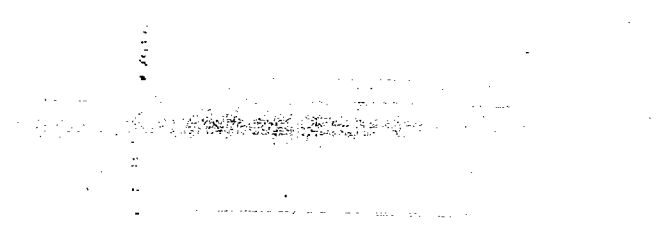
EXTRACT CAC: [Signature]

RECEIVED BY: [Signature]

NARRATIVE

EPA METHOD 8015M (Total Petroleum Hydrocarbon)

SAMPLE RESULTS FORMS AND QC SUMMARIES



LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: M97
Date Collected: 09-APR-97
Date Analyzed: 15-APR-97
Date Extracted: 11-APR-97
Matrix: Water

LAS Sample ID: L9145-2
Date Received: 09-APR-97
Analytical Batch ID: 041597-8015-D-1
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	106%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER (S)
Diesel Range Organics	TPH	<1.0	1.0	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-5S	LAS Sample ID:	L9145-15
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	3.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	82%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH <89.	89.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-7S	LAS Sample ID:	L9145-16
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	82%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-6S	LAS Sample ID:	L9145-17
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	73%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: SB4-4D
Date Collected: 09-APR-97
Date Analyzed: 23-APR-97
Date Extracted: 22-APR-97
Matrix: Soil
Percent Moisture: N/A

LAS Sample ID: L9145-18
Date Received: 09-APR-97
Analytical Batch ID: 041897-8015-D-7
Analytical Dilution: 1
Preparation Dilution: 0.99
QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	70%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH <30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-4D-DUP	LAS Sample ID:	L9145-19
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	99%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH <30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-8D	LAS Sample ID:	L9145-20
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	3.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	72%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<89.	89.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SB4-7D	LAS Sample ID:	L9145-21
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	70%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	POL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: SB4-6D
Date Collected: 09-APR-97
Date Analyzed: 23-APR-97
Date Extracted: 22-APR-97
Matrix: Soil
Percent Moisture: N/A

LAS Sample ID: L9145-22
Date Received: 09-APR-97
Analytical Batch ID: 041897-8015-D-7
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	81%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	POL mg/kg	DATA
				QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: SB4-5D
Date Collected: 09-APR-97
Date Analyzed: 23-APR-97
Date Extracted: 22-APR-97
Matrix: Soil
Percent Moisture: N/A

LAS Sample ID: L9145-23
Date Received: 09-APR-97
Analytical Batch ID: 041897-8015-D-7
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	50%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	S7-1S	LAS Sample ID:	L9145-25
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	3.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	80±	25-162

CONSTITUENT	CAS NO	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH <90.	90.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SB4-1S	LAS Sample ID:	L9145-26
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-8
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	88%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-1D	LAS Sample ID:	L9145-27
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-8
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	87%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SB4-2S	LAS Sample ID:	L9145-28
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-8
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	3.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	88%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH <90.	90.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-2D	LAS Sample ID:	L9145-29
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	0.99
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	74%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-3S	LAS Sample ID:	L9145-30
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	109%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	41.	30.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID: SB4-3D
Date Collected: 08-APR-97
Date Analyzed: 24-APR-97
Date Extracted: 22-APR-97
Matrix: Soil
Percent Moisture: N/A

LAS Sample ID: L9145-31
Date Received: 09-APR-97
Analytical Batch ID: 042497-8015-D-1
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	95%	25-162

CONSTITUENT	CAS NO	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SB7-1-1	LAS Sample ID:	L9145-32
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	89%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	POL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-4S	LAS Sample ID:	L9145-33
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	104%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH 37.	30.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB4-8S	LAS Sample ID:	L9145-34
Date Collected:	09-APR-97	Date Received:	09-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042497-8015-D-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	102%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA
				QUALIFIER(S)
Diesel Range Organics	TPH	79.	30.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: Method Blank
Date Collected: N/A
Date Analyzed: 15-APR-97
Date Extracted: 11-APR-97

LAS Sample ID: 47391MB
Date Received: N/A
Analytical Batch ID: 041597-8015-D-1
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	73%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<1.0	1.0	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Analyzed: 23-APR-97
 Date Extracted: 22-APR-97
 Percent Moisture: N/A

LAS Sample ID: 47616MB
 Date Received: N/A
 Analytical Batch ID: 041897-8015-D-7
 Analytical Dilution: 1
 Preparation Dilution: 0.99
 QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	88%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<30.	30.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: SB4-1D
 Date Collected: 08-APR-97
 Date Analyzed: 23-APR-97
 Date Extracted: 22-APR-97
 Percent Moisture: N/A

LAS Sample ID: 47616MSD
 Date Received: 09-APR-97
 Analytical Batch ID: 041897-8015-D-7
 Analytical Dilution: 1
 Preparation Dilution: 1.0
 QC Group: 8015M - TPH_47616

SUBROGATE	RECOVERY	QC Limits
n-OCTACOSANE	85%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	440	30	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	SB4-1D	LAS Sample ID:	47616MS
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
		Preparation Dilution:	0.99
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	117%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PCI mg/kg	DATA QUALIFIER(S)
Diesel Range Organics		TPH 610	30.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: Lab Ctrl Sample
Date Collected: N/A
Date Analyzed: 23-APR-97
Date Extracted: 22-APR-97
Percent Moisture: N/A

LAS Sample ID: 47616LCS
Date Received: N/A
Analytical Batch ID: 041897-8015-D-7
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	65%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	460	30.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47391LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	130%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	20.	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	47391LCS DUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	102%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	15.	1.0	

LAS LABORATORIES

MATRIX SPIKE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	SB4-1D	LAS Sample ID:	47616MS
Date Collected:	08-APR-97	Date Received:	09-APR-97
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
		Preparation Dilution:	0.99
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	117%	25-162

Constituent	Spike Added mg/kg	Sample Concentration mg/kg	MS Concentration mg/kg	Recovery	QC Limits
					Recovery
Diesel Range Organics	499	0.590	608	122	51-153

LAS LABORATORIES

MATRIX SPIKE DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: SB4-1D	LAS Sample ID: 47616MSD
Date Collected: 08-APR-97	Date Received: 09-APR-97
Date Analyzed: 23-APR-97	Analytical Batch ID: 041897-8015-D-7
Date Extracted: 22-APR-97	Analytical Dilution: 1
	Preparation Dilution: 1.0
Percent Moisture: N/A	QC Group: 8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	85±	25-162

Constituent	Spike Added mg/kg	MSD Concentration mg/kg	± Recovery	RPD	QC Limits	
					RPD	± Recovery
Diesel Range Organics	500	436	87	33*	30	51-1

LAS LABORATORIES

LCS DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: Lab Ctrl Sample
 Date Collected: N/A
 Date Analyzed: 15-APR-97
 Date Extracted: 11-APR-97

LAS Sample ID: 47391LCS
 Date Received: N/A
 Analytical Batch ID: 041597-8015-D-1
 Analytical Dilution: 1
 Preparation Dilution: 1.0
 QC Group: 8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	130%	26-152

Constituent	Spike Added mg/L	LCS Concentration mg/L	LCS + Recovery	QC Limits
Diesel Range Organics	15.1	20.2	134	61-143

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: Lab Ctrl Sample Dup
 Date Collected: N/A
 Date Analyzed: 15-APR-97
 Date Extracted: 11-APR-97

LAS Sample ID: 47391LCSDUP
 Date Received: N/A
 Analytical Batch ID: 041597-8015-D-1
 Analytical Dilution: 1
 Preparation Dilution: 1.0
 QC Group: 8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	102%	26-152

Constituent	Spike Added mg/L	LCS DUP Concentration mg/L	* Recovery	RPD	QC Limits	
					RPD	* Recovery
Diesel Range Organics	15.1	14.6	97	32*	20	61-143

LAS LABORATORIES

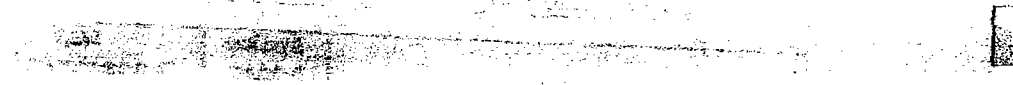
LCS DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47616LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	23-APR-97	Analytical Batch ID:	041897-8015-D-7
Date Extracted:	22-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
Percent Moisture:	N/A	QC Group:	8015M - TPH_47616

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	65%	25-162

Constituent	Spike Added mg/kg	LCS Concentration mg/kg	LCS Recovery	QC Limits
Diesel Range Organics	502	464.	92	51-153

RUN LOGS/EXTRACTION SHEETS



Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ DI	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/8/97 10:36	CH2CL2		1	80151040897-D104089701.d01	80151040897-D.MET	NO	
DA	4/8/97 11:21	RI 0608.36.1		1	80151040897-D104089701.d02	80151040897-D.MET	OK	
DA	4/8/97 12:06	1D 0990.04.1		1	80151040897-D104089701.d03	80151040897-D.MET	OK	
DA	4/8/97 12:52	3D 0990.04.3		1	80151040897-D104089701.d04	80151040897-D.MET	OK	
DA	4/8/97 13:37	5D 0990.04.5		1	80151040897-D104089701.d05	80151040897-D.MET	OK	
DA	4/8/97 14:22	0 OCCS 0990.08.1		1	80151040897-D104089701.d06	80151040897-D.MET	OK	
DA	4/8/97 15:10	3D 0990.04.3		1	80151040897-D104089701.d07	80151040897-D.MET	OK	
DA	4/8/97 16:06	CH2CL2		1	80151040897-D104089701.d08	80151040897-D.MET	NO	
DA	4/8/97 16:51	47090MB		0.1667	80151040897-D104089701.d09	80151040897-D.MET	OK	
DA	4/8/97 17:36	47080LCS		0.1667	80151040897-D104089701.d10	80151040897-D.MET	OK	
DA	4/8/97 18:21	47090MS		0.1851	80151040897-D104089701.d11	80151040897-D.MET	OK	
DA	4/8/97 19:08	47080MSD		0.1887	80151040897-D104089701.d12	80151040897-D.MET	OK	
DA	4/8/97 19:51	L9070.13		0.1837	80151040897-D104089701.d13	80151040897-D.MET	OK	
DA	4/8/97 20:37	L9070.16		0.2092	80151040897-D104089701.d14	80151040897-D.MET	OK	
DA	4/8/97 21:22	L9070.18		0.1787	80151040897-D104089701.d15	80151040897-D.MET	OK	
DA	4/8/97 22:07	L9070.19		0.1939	80151040897-D104089701.d16	80151040897-D.MET	OK	
DA	4/8/97 22:52	L9070.21		0.1899	80151040897-D104089701.d17	80151040897-D.MET	OK	
DA	4/8/97 23:37	L9070.2		0.1872	80151040897-D104089701.d18	80151040897-D.MET	OK	
DA	4/8/97 0:22	L9070.4		0.1822	80151040897-D104089701.d19	80151040897-D.MET	OK	
DA	4/8/97 1:07	3D 0990.04.3		1	80151040897-D104089701.d20	80151040897-D.MET	OK	
DA	4/8/97 1:52	3D 0990.04.3		1	80151040897-D104089701.d21	80151040897-D.MET	NO	
DA	4/8/97 16:09	CH2CL2		1	80151040897-D104089701.d22	80151040897-D.MET	OK	
DA	4/8/97 16:54	L9105.1		0.005	80151040897-D104089701.d23	80151040897-D.MET	OK	
DA	4/8/97 17:40	L9105.2 (1R)		0.005	80151040897-D104089701.d24	80151040897-D.MET	OK	
DA	4/8/97 18:24	L9105.3 (2R)		0.005	80151040897-D104089701.d25	80151040897-D.MET	OK	
DA	4/8/97 19:09	L9105.4 (3R)		0.005	80151040897-D104089701.d26	80151040897-D.MET	OK	
DA	4/8/97 19:54	L9105.5		0.005	80151040897-D104089701.d27	80151040897-D.MET	OK	
DA	4/8/97 20:39	L9105.6		0.005	80151040897-D104089701.d28	80151040897-D.MET	OK	
DA	4/8/97 21:24	L9105.7		0.005	80151040897-D104089701.d29	80151040897-D.MET	OK	
DA	4/11/97 8:43	3D 0990.04.3		1	80151040897-D104089701.d30	80151040897-D.MET	NO	
DA	4/11/97 9:34	3D 0990.04.3		1	80151040897-D104089701.d31	80151040897-D.MET	OK	
DA	4/11/97 11:44	CH2CL2		1	80151040897-D104089701.d32	80151040897-D.MET	NO	
DA	4/11/97 12:29	47258MB		0.1667	80151040897-D104089701.d33	80151040897-D.MET	OK	
DA	4/11/97 13:14	47258LCS		0.1667	80151040897-D104089701.d34	80151040897-D.MET	OK	
DA	4/11/97 13:59	47258MS		0.1662	80151040897-D104089701.d35	80151040897-D.MET	OK	
DA	4/11/97 14:44	47258MSD		0.1663	80151040897-D104089701.d36	80151040897-D.MET	OK	
DA	4/11/97 15:28	L9094.52		0.1647	80151040897-D104089701.d37	80151040897-D.MET	OK	
DA	4/11/97 16:14	L9094.53		0.165	80151040897-D104089701.d38	80151040897-D.MET	OK	
DA	4/11/97 16:59	L8094.54		0.1667	80151040897-D104089701.d39	80151040897-D.MET	OK	
DA	4/11/97 17:44	L9094.55		0.1663	80151040897-D104089701.d40	80151040897-D.MET	OK	
DA	4/11/97 18:28	L9094.56		0.1663	80151040897-D104089701.d41	80151040897-D.MET	OK	
DA	4/11/97 19:14	L9094.57		0.1646	80151040897-D104089701.d42	80151040897-D.MET	OK	
DA	4/11/97 19:59	L9094.58		0.1666	80151040897-D104089701.d43	80151040897-D.MET	OK	
DA	4/11/97 20:44	L9094.60		0.1669	80151040897-D104089701.d44	80151040897-D.MET	OK	
DA	4/11/97 21:29	3D 0990.04.3		1	80151040897-D104089701.d45	80151040897-D.MET	NO	
DA	4/11/97 22:14	3D 0990.04.3		1	80151040897-D104089701.d46	80151040897-D.MET	OK	
DA	4/11/97 22:59	L9094.61		0.1667	80151040897-D104089701.d47	80151040897-D.MET	OK	
DA	4/11/97 23:44	L9094.62		0.1612	80151040897-D104089701.d48	80151040897-D.MET	OK	
DA	4/12/97 0:29	L9094.63		0.1664	80151040897-D104089701.d49	80151040897-D.MET	OK	

nlst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil	Raw Data File	Method File	Reported	Re-Analyzed
DA	4/12/97 1:13	L9094.64		0.1669	8015040897-D104089701.d50	8015040897-D.MET	OK	
DA	4/12/97 1:58	L9094.65		0.1669	8015040897-D104089701.d61	8015040897-D.MET	OK	
DA	4/12/97 2:43	L9094.66		0.1666	8015040897-D104089701.d62	8015040897-D.MET	OK	
DA	4/12/97 3:27	L9094.67		0.1663	8015040897-D104089701.d53	8015040897-D.MET	OK	
DA	4/12/97 4:12	L9094.68		0.1664	8015040897-D104089701.d54	8015040897-D.MET	OK	
DA	4/12/97 4:57	3D.0890.04.3		1	8015040897-D104089701.d55	8015040897-D.MET	OK	
DA	4/12/97 5:42	3D.0890.04.3		1	8015040897-D104089701.d56	8015040897-D.MET	NO	
DA	4/12/97 6:26	CH2CL2		1	8015040897-D104089701.d57	8015040897-D.MET	NO	
DA	4/12/97 7:12	L9105.8		1	8015040897-D104089701.d58	8015040897-D.MET	OK	
DA	4/12/97 7:56	L9105.9 (1R)		1	8015040897-D104089701.d59	8015040897-D.MET	OK	
DA	4/12/97 8:41	L9105.10 (2R)		1	8015040897-D104089701.d60	8015040897-D.MET	OK	
DA	4/12/97 9:26	L9105.11 (3R)		1	8015040897-D104089701.d61	8015040897-D.MET	OK	
DA	4/12/97 10:11	L9105.12		1	8015040897-D104089701.d62	8015040897-D.MET	OK	
DA	4/12/97 10:56	L9105.13		1	8015040897-D104089701.d63	8015040897-D.MET	OK	
DA	4/12/97 11:41	L9105.14		1	8015040897-D104089701.d64	8015040897-D.MET	OK	
DA	4/12/97 12:26	3D.0890-04.3		1	8015040897-D104089701.d65	8015040897-D.MET	OK	
DA	4/14/97 13:04	3D.0890-04.3		1	8015040897-D104089701.d66	8015040897-D.MET	OK	
DA	4/14/97 14:19	CH2CL2		1	8015040897-D104089701.d67	8015040897-D.MET	OK	
DA	4/14/97 15:04	47353MSB		0.1665	8015040897-D104089701.d68	8015040897-D.MET	OK	
DA	4/14/97 15:49	47353MCS		0.1663	8015040897-D104089701.d69	8015040897-D.MET	OK	
DA	4/14/97 16:34	47353MS		0.1663	8015040897-D104089701.d70	8015040897-D.MET	OK	
DA	4/14/97 17:18	47353MSD		0.1671	8015040897-D104089701.d71	8015040897-D.MET	OK	
DA	4/14/97 18:03	L9108.29		0.1807	8015040897-D104089701.d72	8015040897-D.MET	OK	
DA	4/14/97 18:48	L9108.32		0.1814	8015040897-D104089701.d73	8015040897-D.MET	OK	
DA	4/14/97 19:33	L9108.43		0.1663	8015040897-D104089701.d74	8015040897-D.MET	OK	
DA	4/14/97 20:18	L9108.48		0.1726	8015040897-D104089701.d75	8015040897-D.MET	OK	
DA	4/14/97 21:04	L9108.71		0.1706	8015040897-D104089701.d76	8015040897-D.MET	OK	
DA	4/14/97 21:49	L9108.75		0.2065	8015040897-D104089701.d77	8015040897-D.MET	OK	
DA	4/14/97 22:34	L9108.78		0.1686	8015040897-D104089701.d78	8015040897-D.MET	OK	
DA	4/14/97 23:19	L9108.81		0.1704	8015040897-D104089701.d79	8015040897-D.MET	OK	
DA	4/15/97 0:04	3D.0890-04.3		1	8015040897-D104089701.d80	8015040897-D.MET	OK	
DA	4/15/97 0:49	3D.0890-04.3		1	8015040897-D104089701.d81	8015040897-D.MET	NO	
DA	4/15/97 1:34	L9108.86		0.189	8015040897-D104089701.d82	8015040897-D.MET	OK	
DA	4/15/97 2:19	L9108.86		0.27	8015040897-D104089701.d83	8015040897-D.MET	OK	
DA	4/15/97 3:03	L9108.92		0.1717	8015040897-D104089701.d84	8015040897-D.MET	OK	
DA	4/15/97 3:48	L9129.10		0.1994	8015040897-D104089701.d85	8015040897-D.MET	OK	
DA	4/15/97 4:33	L9129.12		0.2199	8015040897-D104089701.d86	8015040897-D.MET	OK	
DA	4/15/97 7:36	L9129.4		1	8015040897-D104089701.d87	8015040897-D.MET	NO	NEED 1:50
DA	4/15/97 8:20	L9129.8		1	8015040897-D104089701.d88	8015040897-D.MET	NO	NEED 1:26
DA	4/15/97 9:05	CH2CL2		1	8015040897-D104089701.d89	8015040897-D.MET	NO	
DA	4/15/97 9:50	L9129.4 1:50		9.033	8015040897-D104089701.d90	8015040897-D.MET	OK	
DA	4/15/97 10:35	L9129.8 1:25		5.6676	8015040897-D104089701.d91	8015040897-D.MET	OK	
DA	4/15/97 11:20	3D.0890-04.3		1	8015040897-D104089701.d92	8015040897-D.MET	OK	

Analyt	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/15/97 12:06	3D 0990.04.3		1	80151041597-D104159701.d01	80151040897-D.MET	OK	
DA	4/15/97 12:52	CH2CL2		1	80151041597-D104159701.d02	80151040897-D.MET	NO	
DA	4/15/97 13:37	47391MB		0.005	80151041597-D104159701.d03	80151040897-D.MET	OK	
DA	4/15/97 14:22	47391LCS		0.005	80151041597-D104159701.d04	80151040897-D.MET	OK	
DA	4/15/97 15:07	47391LCS DUP		0.005	80151041597-D104159701.d05	80151040897-D.MET	OK	
DA	4/15/97 15:52	L9142.10		0.005	80151041597-D104159701.d06	80151040897-D.MET	OK	
DA	4/15/97 16:37	L9142.26		0.005	80151041597-D104159701.d07	80151040897-D.MET	OK	
DA	4/15/97 17:22	L9145.2		0.005	80151041597-D104159701.d08	80151040897-D.MET	OK	
DA	4/15/97 18:07	L9155.10		0.005	80151041597-D104159701.d09	80151040897-D.MET	OK	
DA	4/15/97 18:52	L9155.26		0.005	80151041597-D104159701.d10	80151040897-D.MET	OK	
DA	4/15/97 19:37	L9158.77		0.005	80151041597-D104159701.d11	80151040897-D.MET	OK	
DA	4/15/97 20:22	L9166.1		0.005	80151041597-D104159701.d12	80151040897-D.MET	OK	
DA	4/15/97 21:07	L9166.2		0.005	80151041597-D104159701.d13	80151040897-D.MET	OK	
DA	4/15/97 21:52	3D 0990.04.3		1	80151041597-D104159701.d14	80151040897-D.MET	NO	
DA	4/15/97 22:37	3D 0990.04.3		1	80151041597-D104159701.d15	80151040897-D.MET	NO	
DA	4/15/97 23:22	CH2CL2		1	80151041597-D104159701.d16	80151040897-D.MET	NO	
DA	4/16/97 0:07	47414MB		0.1667	80151041597-D104159701.d17	80151040897-D.MET	OK	
DA	4/16/97 0:52	47414LCS		0.1667	80151041597-D104159701.d18	80151040897-D.MET	OK	
DA	4/16/97 1:37	47414MS		0.1661	80151041597-D104159701.d19	80151040897-D.MET	OK	
DA	4/16/97 2:22	47414MSD		0.1662	80151041597-D104159701.d20	80151040897-D.MET	OK	
DA	4/16/97 3:07	L9111.38		0.1663	80151041597-D104159701.d21	80151040897-D.MET	OK	
DA	4/16/97 3:51	L9111.36		0.1664	80151041597-D104159701.d22	80151040897-D.MET	OK	
DA	4/16/97 4:36	L9111.37		0.1664	80151041597-D104159701.d23	80151040897-D.MET	OK	
DA	4/16/97 5:22	L9111.39		0.1669	80151041597-D104159701.d24	80151040897-D.MET	OK	
DA	4/16/97 6:06	L9111.40		0.1656	80151041597-D104159701.d25	80151040897-D.MET	OK	
DA	4/16/97 6:52	L9111.41		0.1671	80151041597-D104159701.d26	80151040897-D.MET	OK	
DA	4/16/97 7:36	L9111.42		0.1654	80151041597-D104159701.d27	80151040897-D.MET	OK	
DA	4/16/97 8:21	L9111.44		0.1655	80151041597-D104159701.d28	80151040897-D.MET	OK	
DA	4/16/97 9:07	3D 0990.04.3		1	80151041597-D104159701.d29	80151040897-D.MET	OK	
DA	4/16/97 9:52	L9111.45		0.1689	80151041597-D104159701.d30	80151040897-D.MET	OK	
DA	4/16/97 10:37	L9111.46		0.1661	80151041597-D104159701.d31	80151040897-D.MET	OK	
DA	4/16/97 11:22	L9111.47		0.1667	80151041597-D104159701.d32	80151040897-D.MET	OK	
DA	4/16/97 12:07	L9111.48		0.1622	80151041597-D104159701.d33	80151040897-D.MET	OK	
DA	4/16/97 12:52	L9111.49		0.1643	80151041597-D104159701.d34	80151040897-D.MET	OK	
DA	4/16/97 13:37	L9111.50		0.1671	80151041597-D104159701.d35	80151040897-D.MET	OK	
DA	4/16/97 14:21	L9111.51		0.1655	80151041597-D104159701.d36	80151040897-D.MET	OK	
DA	4/16/97 15:07	L9111.35		0.1667	80151041597-D104159701.d37	80151040897-D.MET	OK	
DA	4/16/97 15:52	L9111.59		0.1783	80151041597-D104159701.d38	80151040897-D.MET	OK	
DA	4/16/97 16:37	3D 0990.04.3		1	80151041597-D104159701.d39	80151040897-D.MET	OK	
DA	4/17/97 8:41	3D 0990.04.3		1	80151041597-D104159701.d40	80151040897-D.MET	OK	
DA	4/17/97 10:11	3D 0990.04.3		1	80151041597-D104159701.d41	80151040897-D.MET	NO	
DA	4/17/97 10:56	CH2CL2		1	80151041597-D104159701.d42	80151040897-D.MET	NO	
DA	4/17/97 11:42	47415MB		0.1667	80151041597-D104159701.d43	80151040897-D.MET	OK	
DA	4/17/97 12:26	47415LCS		0.1667	80151041597-D104159701.d44	80151040897-D.MET	OK	
DA	4/17/97 13:12	47415MS		0.1664	80151041597-D104159701.d45	80151040897-D.MET	OK	
DA	4/17/97 13:57	47415MSD		0.1671	80151041597-D104159701.d46	80151040897-D.MET	OK	
DA	4/17/97 14:42	L9112.8		0.1639	80151041597-D104159701.d47	80151040897-D.MET	OK	
DA	4/17/97 15:27	L9112.18		0.1682	80151041597-D104159701.d48	80151040897-D.MET	OK	
DA	4/17/97 16:12	L9112.3		0.1661	80151041597-D104159701.d49	80151040897-D.MET	OK	

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/17/97 16:58	L9112.29		0.1653	80151041597-D104159701.d50	80151040897-D.MET	OK	
DA	4/17/97 17:42	L9154.4		0.1665	80151041597-D104159701.d51	80151040897-D.MET	OK	
DA	4/17/97 18:28	L9154.11		0.1656	80151041597-D104159701.d52	80151040897-D.MET	OK	
DA	4/17/97 19:13	3D 0990.04.3		1	80151041597-D104159701.d53	80151040897-D.MET	OK	
DA	4/17/97 19:57	3D 0990.04.3		1	80151041597-D104159701.d54	80151040897-D.MET	NO	
DA	4/17/97 20:43	L9154.18		0.1667	80151041597-D104159701.d55	80151040897-D.MET	OK	
DA	4/17/97 21:28	L9154.25		0.1659	80151041597-D104159701.d56	80151040897-D.MET	OK	
DA	4/17/97 22:13	L9154.32		0.1674	80151041597-D104159701.d57	80151040897-D.MET	OK	
DA	4/17/97 22:58	L9154.43		0.1667	80151041597-D104159701.d58	80151040897-D.MET	OK	
DA	4/17/97 23:43	L9154.53		0.1667	80151041597-D104159701.d59	80151040897-D.MET	OK	
DA	4/18/97 0:28	L9154.60		0.1654	80151041597-D104159701.d60	80151040897-D.MET	OK	
DA	4/18/97 1:13	3D 0990.04.3		1	80151041597-D104159701.d61	80151040897-D.MET	OK	
DA	4/18/97 1:58	3D 0990.04.3		1	80151041597-D104159701.d62	80151040897-D.MET	NO	

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/18/97 13:31	CH2CL2		1	80151041897-D104189701.d01	80151041897-D.MET	NO	
DA	4/18/97 14:17	RT 0608 36 1		1	80151041897-D104189701.d02	80151041897-D.MET	OK	
DA	4/18/97 15:02	1D 0990 04 1		1	80151041897-D104189701.d03	80151041897-D.MET	OK	
DA	4/18/97 15:47	3D 0990 04 3		1	80151041897-D104189701.d04	80151041897-D.MET	OK	
DA	4/18/97 16:33	5D 0990 04 5		1	80151041897-D104189701.d05	80151041897-D.MET	OK	
DA	4/18/97 17:18	D_QCCS 0990 08 1		1	80151041897-D104189701.d06	80151041897-D.MET	OK	
DA	4/18/97 18:04	1D 0990 04 1		1	80151041897-D104189701.d07	80151041897-D.MET	NO	
DA	4/18/97 18:49	3D 0990 04 3		1	80151041897-D104189701.d08	80151041897-D.MET	NO	
DA	4/18/97 18:34	5D 0990 04 5		1	80151041897-D104189701.d09	80151041897-D.MET	NO	
DA	4/18/97 20:19	3D 0990 04 3		1	80151041897-D104189701.d10	80151041897-D.MET	OK	
DA	4/18/97 21:04	3D 0990 04 3		1	80151041897-D104189701.d11	80151041897-D.MET	NO	
DA	4/18/97 21:49	CH2CL2		1	80151041897-D104189701.d12	80151041897-D.MET	NO	
DA	4/18/97 22:34	47417MB		0.1662	80151041897-D104189701.d13	80151041897-D.MET	OK	
DA	4/18/97 23:19	47417LCS		0.165	80151041897-D104189701.d14	80151041897-D.MET	OK	
DA	4/19/97 0:04	47417MS		0.1664	80151041897-D104189701.d15	80151041897-D.MET	OK	
DA	4/19/97 0:49	47417MSD		0.1647	80151041897-D104189701.d16	80151041897-D.MET	OK	
DA	4/19/97 1:34	L9141-105		0.1651	80151041897-D104189701.d17	80151041897-D.MET	OK	
DA	4/19/97 2:19	L9141-108		0.1627	80151041897-D104189701.d18	80151041897-D.MET	OK	
DA	4/19/97 3:04	L9141-107		0.1631	80151041897-D104189701.d19	80151041897-D.MET	OK	
DA	4/19/97 3:49	L9141-108		0.1615	80151041897-D104189701.d20	80151041897-D.MET	OK	
DA	4/19/97 4:33	L9141-109		0.166	80151041897-D104189701.d21	80151041897-D.MET	OK	
DA	4/19/97 5:19	L9141-110		0.1648	80151041897-D104189701.d22	80151041897-D.MET	OK	
DA	4/19/97 6:03	L9143 4		0.1662	80151041897-D104189701.d23	80151041897-D.MET	OK	
DA	4/19/97 6:48	L9143 11		0.1649	80151041897-D104189701.d24	80151041897-D.MET	OK	
DA	4/19/97 7:33	3D 0990-04 3		1	80151041897-D104189701.d25	80151041897-D.MET	NO	
DA	4/19/97 8:18	3D 0990-04 3		1	80151041897-D104189701.d26	80151041897-D.MET	OK	
DA	4/19/97 9:03	L9143-17		0.1638	80151041897-D104189701.d27	80151041897-D.MET	OK	
DA	4/19/97 9:48	L9143-24		0.1666	80151041897-D104189701.d28	80151041897-D.MET	OK	
DA	4/18/97 10:33	L9143-31		0.1632	80151041897-D104189701.d29	80151041897-D.MET	OK	
DA	4/18/97 11:18	L9143-38		0.1641	80151041897-D104189701.d30	80151041897-D.MET	OK	
DA	4/18/97 12:04	L9143-45		0.1652	80151041897-D104189701.d31	80151041897-D.MET	OK	
DA	4/18/97 12:48	L9143-55		0.1644	80151041897-D104189701.d32	80151041897-D.MET	OK	
DA	4/18/97 13:34	L9143-66		0.1664	80151041897-D104189701.d33	80151041897-D.MET	OK	
DA	4/18/97 14:18	L9143-73		0.1644	80151041897-D104189701.d34	80151041897-D.MET	OK	
DA	4/18/97 15:03	L9143-80		0.1657	80151041897-D104189701.d35	80151041897-D.MET	OK	
DA	4/18/97 15:48	L9143-87		0.1653	80151041897-D104189701.d36	80151041897-D.MET	OK	
DA	4/18/97 16:33	3D 0990-04 3		1	80151041897-D104189701.d37	80151041897-D.MET	OK	
DA	4/18/97 17:19	3D 0990-04 3		1	80151041897-D104189701.d38	80151041897-D.MET	OK	
DA	4/21/97 12:27	3D 0990-04 3		1	80151041897-D104189701.d39	80151041897-D.MET	OK	
DA	4/21/97 14:15	CH2CL2		1	80151041897-D104189701.d40	80151041897-D.MET	OK	
DA	4/21/97 15:00	47617MB		1	80151041897-D104189701.d41	80151041897-D.MET	OK	
DA	4/21/97 15:45	47617LCS		1	80151041897-D104189701.d42	80151041897-D.MET	OK	
DA	4/21/97 16:31	47617MS		1	80151041897-D104189701.d43	80151041897-D.MET	OK	
DA	4/21/97 17:16	47617MSD		1	80151041897-D104189701.d44	80151041897-D.MET	OK	
DA	4/21/97 18:01	L9171-25		1	80151041897-D104189701.d45	80151041897-D.MET	OK	
DA	4/21/97 18:46	L9171-27		1	80151041897-D104189701.d46	80151041897-D.MET	OK	
DA	4/21/97 19:31	L9171-29		1	80151041897-D104189701.d47	80151041897-D.MET	OK	
DA	4/21/97 20:16	L9171-31		1	80151041897-D104189701.d48	80151041897-D.MET	OK	
DA	4/21/97 21:01	L9171-33		1	80151041897-D104189701.d49	80151041897-D.MET	OK	

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/21/97 21:47	L9171.35		1	80151041897-D104189701.d50	80151041897-D.MET		
DA	4/21/97 22:32	L9171.37		1	80151041897-D104189701.d51	80151041897-D.MET		
DA	4/21/97 23:17	L9171.39		1	80151041897-D104189701.d52	80151041897-D.MET		
DA	4/22/97 0:02	L9171.41		1	80151041897-D104189701.d53	80151041897-D.MET		
DA	4/22/97 0:47	L9171.43		1	80151041897-D104189701.d54	80151041897-D.MET		
DA	4/22/97 1:31	3D.0990.04.3		1	80151041897-D104189701.d55	80151041897-D.MET		
DA	4/22/97 2:16	3D.0990.04.3		1	80151041897-D104189701.d56	80151041897-D.MET		
DA	4/22/97 3:01	L9171.45		1	80151041897-D104189701.d57	80151041897-D.MET		
DA	4/22/97 3:47	L9171.47		1	80151041897-D104189701.d58	80151041897-D.MET		
DA	4/22/97 4:32	L9171.49		1	80151041897-D104189701.d59	80151041897-D.MET		
DA	4/22/97 5:17	L9171.51		1	80151041897-D104189701.d60	80151041897-D.MET		
DA	4/22/97 6:02	L9171.54		1	80151041897-D104189701.d61	80151041897-D.MET		
DA	4/22/97 6:47	L9171.56		1	80151041897-D104189701.d62	80151041897-D.MET		
DA	4/22/97 7:32	L9171.58		1	80151041897-D104189701.d63	80151041897-D.MET		
DA	4/22/97 8:16	L9171.60		1	80151041897-D104189701.d64	80151041897-D.MET		
DA	4/22/97 9:01	L9171.62		1	80151041897-D104189701.d65	80151041897-D.MET		
DA	4/22/97 9:46	L9171.64		1	80151041897-D104189701.d66	80151041897-D.MET		
DA	4/22/97 10:31	3D.0990.04.3		1	80151041897-D104189701.d67	80151041897-D.MET		
DA	4/22/97 11:17	3D.0990.04.3		1	80151041897-D104189701.d68	80151041897-D.MET		
DA	4/22/97 12:02	47617MS 1.50		1	80151041897-D104189701.d69	80151041897-D.MET		
DA	4/22/97 12:47	47617MSD 1.50		1	80151041897-D104189701.d70	80151041897-D.MET		
DA	4/22/97 13:32	L9171.35.1.4		1	80151041897-D104189701.d71	80151041897-D.MET		
DA	4/22/97 15:02	L9171.39.1.50		1	80151041897-D104189701.d72	80151041897-D.MET		
DA	4/22/97 16:48	L9171.41.1.50		1	80151041897-D104189701.d73	80151041897-D.MET		
DA	4/22/97 16:33	L9171.43.1.2		1	80151041897-D104189701.d74	80151041897-D.MET		
DA	4/22/97 17:18	RT-2		1	80151041897-D104189701.d75	80151041897-D.MET		
DA	4/22/97 18:03	TEST		1	80151041897-D104189701.d76	80151041897-D.MET		
DA	4/22/97 18:48	3D.0990.04.3		1	80151041897-D104189701.d77	80151041897-D.MET		
DA	4/22/97 19:33	3D.0990.04.3		1	80151041897-D104189701.d78	80151041897-D.MET		
DA	4/23/97 7:33	3D.0990.04.3		1	80151041897-D104189701.d79	80151041897-D.MET		
DA	4/23/97 8:18	CH2CL2		1	80151041897-D104189701.d80	80151041897-D.MET		
DA	4/23/97 8:04	47616MB		0.1657	80151041897-D104189701.d81	80151041897-D.MET		
DA	4/23/97 8:49	47616LCS		0.1666	80151041897-D104189701.d82	80151041897-D.MET		
DA	4/23/97 10:34	47616MS		0.1658	80151041897-D104189701.d83	80151041897-D.MET		
DA	4/23/97 11:20	47616MSD		0.1659	80151041897-D104189701.d84	80151041897-D.MET		
DA	4/23/97 12:05	L9145-15		0.4936	80151041897-D104189701.d85	80151041897-D.MET		
DA	4/23/97 12:50	L9145-16		0.1666	80151041897-D104189701.d86	80151041897-D.MET		
DA	4/23/97 13:35	L9145-17		0.1666	80151041897-D104189701.d87	80151041897-D.MET		
DA	4/23/97 14:21	L9145-18		0.1657	80151041897-D104189701.d88	80151041897-D.MET		
DA	4/23/97 15:06	L9145-21		0.1664	80151041897-D104189701.d89	80151041897-D.MET		
DA	4/23/97 15:51	L9145-20		0.4965	80151041897-D104189701.d90	80151041897-D.MET		
DA	4/23/97 16:37	L9145-22		0.166	80151041897-D104189701.d91	80151041897-D.MET		
DA	4/23/97 17:22	L9145-23		0.4981	80151041897-D104189701.d92	80151041897-D.MET		
DA	4/23/97 18:07	L9145-25		0.4981	80151041897-D104189701.d93	80151041897-D.MET		
DA	4/23/97 18:52	3D.0990.04.3		1	80151041897-D104189701.d94	80151041897-D.MET		
DA	4/23/97 19:38	3D.0990.04.3		1	80151041897-D104189701.d95	80151041897-D.MET		
DA	4/23/97 20:22	L9145-26		0.1664	80151041897-D104189701.d96	80151041897-D.MET		
DA	4/23/97 21:08	L9145-27		0.166	80151041897-D104189701.d97	80151041897-D.MET		
DA	4/23/97 21:53	L9145-28		0.5	80151041897-D104189701.d98	80151041897-D.MET		

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ DA	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/23/97 22:38	L9145 29		0.1658	8015\042497-D\04249701.d01	8015\041897-D.MET	OK	
DA	4/23/97 23:23	L9145 30		0.1661	8015\042497-D\04249701.d02	8015\041897-D.MET	OK	
DA	4/24/97 0:09	L9145 31		0.1662	8015\042497-D\04249701.d03	8015\041897-D.MET	OK	
DA	4/24/97 0:54	L9145 32		0.1665	8015\042497-D\04249701.d04	8015\041897-D.MET	OK	
DA	4/24/97 1:39	L9145 33		0.1664	8015\042497-D\04249701.d05	8015\041897-D.MET	OK	
DA	4/24/97 2:24	L9145 34		0.1666	8015\042497-D\04249701.d06	8015\041897-D.MET	OK	
DA	4/24/97 3:09	L9145 19		0.1661	8015\042497-D\04249701.d07	8015\041897-D.MET	OK	
DA	4/24/97 3:54	3D 0990 04 3		1	8015\042497-D\04249701.d08	8015\041897-D.MET	OK	

DATE 05
 RE=0111

LAS LABORATORIES

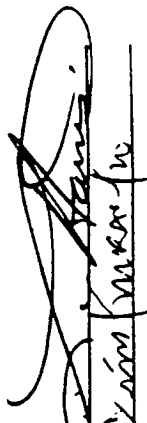
TRACKING SHEET DATA REPORT (bs09)

EXTRACTION SHEET FOR: 8015M - TPH Extraction

WORKSHEET NUMBER: 8015M - TPH_47391

LAB #	GC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/CREATED	VOL OUT EXTR	WATER SAMPLE PH	SUMR ML	IMS ML	BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9142-10		LCH00032	07-APR-97	09-APR-97	4-11-97	1	2.0		5.0ml	24ml
L9142-26		LCH00034	08-APR-97	09-APR-97	1000ml	1				
L9145-2		M97	09-APR-97	09-APR-97	1000ml	7				
L9155-10		LCH00143	09-APR-97	10-APR-97	1000ml	1				
L9155-26		LCH00144	09-APR-97	10-APR-97	1000ml	1				
L9158-77		COMPOSITE *	09-APR-97	10-APR-97	1000ml	1				
L9166-1		M10	10-APR-97	11-APR-97	1000ml	7				
L9166-2		M21	10-APR-97	11-APR-97	1000ml	7				
47391MB	MB	Method Blank		11-APR-97	1000ml	7		1.0		
47391LCS	LCS	Lab Ctrl Sample		11-APR-97	1000ml	7				
47391LCS DUP	LCS D	Lab Ctrl Sample Dup		11-APR-97	1000ml	7				
SP1KEL047391	SP1KEL04	Spike-101-Sample		11-APR-97						UB 04-11-97

Diesel spike
 matrix spike

SIGNED: 
 SPIKE WITNESS: Sam Markin

EXTRACTION METHOD: Sp. Funnel
 DATE STARTED: 4-11-97
 DATE COMPLETED: 4-11-97

GC BATCH# : 8015M - TPH_47391
 Surr ID # : 0859-85.2
 MS ID # : 0859-11-3
 LOT #S :
 CONC: 2.0ug/ml MECL2 : 36240
 CONC: 5.0ug/ml ACETONE: N/A

REVIEWED BY: North L. Brown 04/11/97
 DATE: 4/11/97

EXTRACT COC: RECEIVED BY: RMB

NARRATIVE
 L9168-77 is a composite of 8 samples. 125ml each of the 8 samples were composited to form the one liter sample extracted as L9158-77, at the client's request. MS 04-11-97

HT = 04/22
DWE 05/09

LAS LABORATORIES
TRACKING SHEET DATA REPORT (bs09)
EXTRACTION SHEET FOR: 8015M - TPH Extraction
WORKSHEET NUMBER: 8015M - TPH 47616

Subsample Lab
in year

Diesel spike
Matrix

LAL #	GC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/ CREATED	VOL% EXTR	WATER SAMPLE PH	SURR ML	MS ML	INCR TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9145-15		S84-5S	09-APR-97	09-APR-97	4.22%	NA	2.0	50ml		~4ml
L9145-16		S84-7S	09-APR-97	09-APR-97	30.01%					
L9145-17		S84-6S	09-APR-97	09-APR-97	30.02%					
L9145-18		S84-4D	09-APR-97	09-APR-97	30.17%					
L9145-21		S84-7D	09-APR-97	09-APR-97	30.05%					
L9145-20		S84-8D	09-APR-97	09-APR-97	10.07%					
L9145-22		S84-6D	09-APR-97	09-APR-97	30.18%					
L9145-23		S84-5D	09-APR-97	09-APR-97	30.03%					
L9145-25		S7-1S	08-APR-97	09-APR-97	10.04%					
L9145-26		S84-1S	08-APR-97	09-APR-97	30.04%					
L9145-27		S84-1D	08-APR-97	09-APR-97	30.13%					
L9145-28		S84-2S	08-APR-97	09-APR-97	10.00%					
L9145-29		S84-2D	08-APR-97	09-APR-97	30.15%					

EXTRACTION METHOD: NIEST ACTION SHAKER

DATE STARTED: 4-22-97 DATE COMPLETED: 4-22-97

GC BATCH # : 8015M - TPH 47616

SURR ID # : 0859-96-1

MS ID # : 0859-97-3

LOT #S

CONC: 200 ug/ml MECL2 : 35240

CONC: 5.0% MECL2 : NA

MA2804: 139634

SIGNED: Paul Spunck
SPIKE WITNESS: Spice Cotton

REVIEWED BY: Paul Spunck DATE: 4/22/97

EXTRACT COC: RECEIVED BY: Spice DATE: 4/22/97
 * Due to anticipated matrix effects only Wagoner of sample used. L9145-15, L9145-20, L9145-25, L9145-28, C. Spunck 4-22-97

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs09)

EXTRACTION SHEET FOR: 8015M - TPH Extraction

WORKSHEET NUMBER: 8015M - TPH_47616

LAB #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/CREATED	VOL/MT EXTR	WATER SAMPLE PH	SURR ML	MS BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9145-30		SB4-35	08-APR-97	09-APR-97	30.11g	N/A	2.0	5.0ml	~4ml
L9145-31		SB4-30	08-APR-97	09-APR-97	30.08g				
L9145-32		SB7-1-1	08-APR-97	09-APR-97	30.03g				
L9145-33		SB4-45	09-APR-97	09-APR-97	30.04g				
L9145-34		SB4-85	09-APR-97	09-APR-97	30.08g				
L9145-19		SB4-40-DUP	09-APR-97	09-APR-97	30.11g				
47616MB	MB	Method Blank		16-APR-97	30.18g				
47616LCS	LCS	Lab Ctr'l Sample		16-APR-97	30.01g			1.6	
47616MS	MS	Matrix Spike	08-APR-97	16-APR-97	30.16g				
47616MSD	MSD	Matrix Spike Dup	08-APR-97	16-APR-97	30.14g				
SPHRET047616	SPHRET047616	SPHRET047616		16-APR-97					0.050416-97

EXTRACTION METHOD: _____ DATE COMPLETED: _____ SIGNED: _____

DATE STARTED: _____ LOT #'S _____ SPIKE WITNESS: _____

QC BATCH# : 8015M - TPH_47616 MA2504: _____

SURR ID # : _____ CONC: _____ MECL2 : _____

MS ID # : _____ CONC: _____ ACETONE: _____

REVIEWED BY: _____ DATE: _____

EXTRACT COC: RECEIVED BY: _____

NARRATIVE

8015 Soils Conversion Values ug/mL Concentration To mg/kg

1. Surrogate Concentration In ug/mL: _____ 200 _____

Sample Name	Mass In Grams	Percent Solid	Amount Of Surr. (ug/kg) Found	Volume Of Surr. Used ml	Final Volume Of Extract ml	Extract Con. ug/ml If 100% Rec.	Sample mg/kg If 100% Rec.	Factor ug/mL EC To mg/kg SC
L9145-15	10.13	100.00		2	5	80	39.48667325	0.49358
L9145-16	30.01	100.00		2	5	80	13.32889037	0.16661
L9145-17	30.02	100.00		2	5	80	13.324445037	0.16656
L9145-18	30.17	100.00		2	5	80	13.25820351	0.16573
L9145-21	30.05	100.00		2	5	80	13.31114809	0.16639
L9145-20	10.07	100.00		2	5	80	39.72194638	0.49652
L9145-22	30.12	100.00		2	5	80	13.28021248	0.16600
L9145-23	30.03	100.00		2	5	80	13.32001332	0.16650
L9145-25	10.04	100.00		2	5	80	39.84063745	0.49801
L9145-26	30.04	100.00		2	5	80	13.31557923	0.16644
L9145-27	30.13	100.00		2	5	80	13.27580485	0.16595
L9145-28	10	100.00		2	5	80	40	0.50000
L9145-29	30.15	100.00		2	5	80	13.26699834	0.16584
L9145-30	30.11	100.00		2	5	80	13.28462305	0.16606
L9145-31	30.08	100.00		2	5	80	13.29787234	0.16622
L9145-32	30.03	100.00		2	5	80	13.32001332	0.16650
L9145-33	30.04	100.00		2	5	80	13.31557923	0.16644
L9145-34	30.02	100.00		2	5	80	13.324445037	0.16656
L9145-19	30.11	100.00		2	5	80	13.28462305	0.16606
47616MB	30.18	100.00		2	5	80	13.25381047	0.16567
47616LCS	30.01	100.00		2	5	80	13.32889037	0.16661
47616MS	30.16	100.00		2	5	80	13.26259947	0.16578
47616MSD	30.14	100.00		2	5	80	13.27140013	0.16589



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

**pH, METALS, AND
TOTAL PETROLEUM HYDROCARBON ORGANICS**

LOG-IN NUMBER	<u>L9157</u>
QUOTATION NUMBER	<u>Q707146</u>
DOCUMENT FILE NUMBER	<u>0410171</u>



**PROVIDING SOLUTIONS
FOR THE FUTURE**

Soil Samples
Areas: 5, 1, 2, 9, 8

COPY

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 10, 1997. The samples were logged in as L9157 and were prepared and analyzed in batch 409 km3 for total metals. The samples were analyzed by Method 6010 ICP Trace and Method 7471 Mercury. (SDG #L9145S3)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The duplicate sample precision for barium and arsenic were outside of acceptance limits. All associated samples are flagged with an "**".

Shellee McGrath
Prepared By

May 7, 1997
Date

CHAIN OF CUSTODY RECORD

Client/Project Name KMCC		Project Location HENDERSON, NV		ANALYSES	
Project No. 4020-CCH-200		Field Logbook No.		Total Cr	
Sampler: (Signature) <i>R. Peckels</i>		Chain of Custody Tape No.		PT	
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS
S05-1-1	4/9/97	1305		soil	samples
S05-1-3	4/9/97			soil	S05-2-1
S05-1-5	4/9/97	1310		soil	S05-2-3
S05-1-7	4/9/97			soil	delivered to lab
S05-1-10	4/9/97	1320		soil	4/9/97 without
S05-2-1	4/9/97			soil	ACC
S05-2-3	4/9/97			soil	
S05-2-5	4/9/97	1431		soil	
Relinquished by: (Signature) <i>R. Peckels</i>		Date	Time	Received by: (Signature)	
		4/9/97	1530	<i>Tom Wenzel</i>	
Relinquished by: (Signature) <i>Tom Wenzel</i>		Date	Time	Received by: (Signature)	
		4-10-97	1510	<i>Tom Wenzel</i>	
Relinquished by: (Signature)		Date	Time	Received for Laboratory: (Signature)	
				<i>Tom Wenzel</i> KAS	
Sample Disposal Method:		Disposed of by: (Signature)			
SAMPLE COLLECTOR		ANALYTICAL LABORATORY			
ENSR Consulting and Engineering 1220 Avenida Acaso Camarillo, Ca. 93010 (805) 388-3775		LAS - MARY FORD 702 361 3975 1-4			
		ENSR			
		No 2856			

410171

CHAIN OF CUSTODY RECORD

Client/Project Name KNYC		Project Location HENDERSEN, NV		ANALYSES			
Project No. 4020 004-200		Field Logbook No.					
Sampler: (Signature) <i>D. Proebels</i>		Chain of Custody Tape No.		REMARKS			
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	Received by: (Signature)	Date	Time
SB1-6-5	4/10/97	1032		soil	<i>[Signature]</i>	4-10-97	1530
SB1-6-10	4/10/97	1037		soil	<i>[Signature]</i>	4-10-97	1530
SB1-7-1	4/10/97	1130		soil	<i>[Signature]</i>	4-10-97	1530
SB1-7-5	4/10/97	1121		soil	<i>[Signature]</i>	4-10-97	1530
SB1-7-10	4/10/97	1126		soil	<i>[Signature]</i>	4-10-97	1530
Relinquished by: (Signature) <i>[Signature]</i>		Date 4/10/97		Time 1530		Received by: (Signature) <i>[Signature]</i>	
Relinquished by: (Signature) <i>[Signature]</i>		Date 4-10-97		Time 1530		Received by: (Signature) <i>[Signature]</i>	
Relinquished by: (Signature) <i>[Signature]</i>		Date		Time		Received for Laboratory: (Signature) <i>[Signature]</i>	
Sample Disposal Method:		Disposed of by: (Signature) <i>[Signature]</i>		Date		Time	
SAMPLE COLLECTOR				ANALYTICAL LABORATORY			
ENSR Consulting and Engineering 1220 Avenida Acaso Camarillo, Ca. 93010 (805) 388-3775				LAS Mary Ford 702 361 7455			

ENSR

No. 2861

0410171

CASE NARRATIVE INORGANIC NON METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 10, 1997. The samples were logged in as L9157 and prepared and analyzed in batch 410-KM for:

A. Method 9045 pH

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Internal Quality Control

- All Internal Quality Control were within acceptable limits.

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 10, 1997. The samples were logged in as L9157 and were prepared and analyzed in batch 410 km for total metals. The samples were analyzed by Method 6010 ICP Trace and Method 7471 Mercury. (SDG #L9157S)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOILS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 10, 1997. The samples were logged in as L9157 and were prepared and analyzed in batch 409 km4 for chromium. The samples were analyzed by Method 6010 ICP Metals. (SDG #L9145S4)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The duplicate sample precision for chromium was outside of acceptance limits. All associated samples are flagged with an "**".
- The matrix spike recovery for chromium exceeded the 75-125% acceptance limit, however, the sample concentration is considered significant (i.e., greater than four times the spiking level) relative to the amount spiked into the sample. Therefore, the data are not qualified.

Shellee McGrath
Prepared By

May 7, 1997
Date

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.

**CASE NARRATIVE
ORGANIC ANALYSES**

Analytical Method 8015M

Analytical Batch 042397-8015-L-3

NOTE: Client sample FTAS02NEB (L9156-22) was the native sample used for the Matrix Spike (47615MS) and Matrix Spike Duplicate (47615MSD). All associated client data for the native sample FTAS02NEB (L9156-22), 47615MS, and 47615MSD can be found in the data package for login L9156.

X Qualifier- Client samples S9-1RE (L9157-64) and S8-1RE (L9157-65) were quantified as Diesel Range Organics but both samples contained heavier hydrocarbons. The results were based on the area of the peaks that were within the Retention Time Marker of Diesel Range Organics.

The samples were extracted within the required holding time on April 22, 1997 and analyzed within the required holding time on April 23 and 24, 1997. The initial calibration met criteria. All continuing calibrations met criteria except for Gasoline in the ending continuing. There were no target compounds detected in the Method Blank (47615MB). The recovery of surrogate n-Octacosane was within QC limits except in the 47615MSD, which was slightly high due to matrix effect. The recovery of Diesel Range Organics was within QC limits in the 47615MS, 47615MSD, and Laboratory Control Sample (47615LCS). The Relative Percent Difference (RPD) between the 47615MS and 47615MSD recoveries was within QC limits.

Prepared By
Patricia Lonergan

May 7, 1997

**SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY**

DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. <i>[pesticide/PCB analyses only]</i>
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to <u>surrogates</u> being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	<i>Estimated value</i> – (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	<i>For CLP Reporting Only</i> – The percent difference between the concentrations detected on both GC columns was greater than 25 percent <i>[pesticide/PCB analyses only]</i> .
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "as received" basis. A value in the % moisture cell indicates that data are reported based on a "dry weight" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a ¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b ¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC Summary Form.

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil 4 S 7471 MERCURY		Hold:08-MAY-97		
Soil 4 S 9045 PH		Hold:17-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-9	SB1-6-10	10-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil 4 S 6010 ICP METALS		Hold:07-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:07-OCT-97		
Soil 4 S 7471 MERCURY		Hold:08-MAY-97		
Soil 4 S 9045 PH		Hold:17-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-10	SB1-7-1	10-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil 4 S 6010 ICP METALS		Hold:07-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:07-OCT-97		
Soil 4 S 7471 MERCURY		Hold:08-MAY-97		
Soil 4 S 9045 PH		Hold:17-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-11	SB1-7-5	10-APR-97	10-APR-97	10-M
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil 4 S 6010 ICP METALS		Hold:07-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:07-OCT-97		
Soil 4 S 7471 MERCURY		Hold:08-MAY-97		
Soil 4 S 9045 PH		Hold:17-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-12	SB1-7-10	10-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil 4 S 6010 ICP METALS		Hold:07-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:07-OCT-97		
Soil 4 S 7471 MERCURY		Hold:08-MAY-97		
Soil 4 S 9045 PH		Hold:17-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-13	SB5-1-1	09-APR-97	10-APR-97	10-MAY-
Temp 2; diesel				
Location: RFG01-04A				
Soil 4 S 8015M - TPH		Hold:23-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-1 Temp 2; Hold; Location: RFG01-04A Soil 4 S NONE	SB5-2-7	09-APR-97	10-APR-97	10-MAY-97
		Hold: 19-APR-97		
L9157-2 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-2-10	09-APR-97	10-APR-97	10-MAY-97
		Hold: 23-APR-97 Hold: 10-APR-97		
L9157-3 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-3-1	09-APR-97	10-APR-97	10-MAY-97
		Hold: 23-APR-97 Hold: 10-APR-97		
L9157-4 Temp 2; Hold; Location: RFG01-04A Soil 4 S NONE	SB5-3-3	09-APR-97	10-APR-97	10-MAY-97
		Hold: 19-APR-97		
L9157-5 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-3-5	09-APR-97	10-APR-97	10-MAY-97
		Hold: 23-APR-97 Hold: 10-APR-97		
L9157-6 Temp 2; Hold; Location: RFG01-04A Soil 4 S NONE	SB5-3-7	09-APR-97	10-APR-97	10-MAY-97
		Hold: 19-APR-97		
L9157-7 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-3-10	09-APR-97	10-APR-97	10-MAY-97
		Hold: 23-APR-97 Hold: 10-APR-97		
L9157-8 Temp 2; RCRA 8 METALS Location: RFG01-04A Soil 4 S 6010 ICP METALS Soil 4 S 6010 ICP TRACE	SB1-6-5	10-APR-97	10-APR-97	10-MAY-97
		Hold: 07-OCT-97 Hold: 07-OCT-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
<hr/>				
L9157-22	SB1-1-5	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-09A				
Soil	4 S 010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
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L9157-23	SB1-1-10	09-APR-97	10-APR-97	10-MAY-9
Temp 2; RCRA 8 METALS				
Location: RFG01-09A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
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L9157-24	SB1-2-1	09-APR-97	10-APR-97	10-MAY-9
Temp 2; RCRA 8 METALS				
Location: RFG01-09A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
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L9157-25	SB1-2-5	09-APR-97	10-APR-97	10-MAY-9
Temp 2; RCRA 8 METALS				
Location: RFG01-09A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-14 Temp 2; hold Location: RFG01-04A Soil 4 S NONE	SB5-1-3	09-APR-97	10-APR-97	10-MAY-
		Hold:19-APR-97		
L9157-15 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-1-5	09-APR-97	10-APR-97	10-MAY-
		Hold:23-APR-97 Hold:10-APR-97		
L9157-16 Temp 2; hold Location: RFG01-04A Soil 4 S NONE	SB5-1-7	09-APR-97	10-APR-97	10-MAY-
		Hold:19-APR-97		
L9157-17 Temp 2; diesel Location: RFG01-04A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-1-10	09-APR-97	10-APR-97	10-MAY-
		Hold:23-APR-97 Hold:10-APR-97		
L9157-18 Temp 2; diesel Location: RFG01-4B Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-2-1	09-APR-97	10-APR-97	10-MAY-9
		Hold:23-APR-97 Hold:10-APR-97		
L9157-19 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB5-2-3	09-APR-97	10-APR-97	10-MAY-9
		Hold:19-APR-97		
L9157-20 Temp 2; diesel Location: RFG01-09A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-2-5	09-APR-97	10-APR-97	10-MAY-9
		Hold:23-APR-97 Hold:10-APR-97		
L9157-21 Temp 2; RCRA 8 METALS Location: RFG01-09A	SB1-1-1	09-APR-97	10-APR-97	10-MAY-9

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-31	SB1-4-5	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
L9157-32	SB1-4-10	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
L9157-33	SB1-5-1	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
L9157-34	SB1-5-5	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-04A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		
L9157-35	SB1-5-10	09-APR-97	10-APR-97	10-MAY-
Temp 2; RCRA 8 METALS				
Location: RFG01-09A				
Soil	4 S 6010 ICP METALS	Hold:06-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:06-OCT-97		
Soil	4 S 7471 MERCURY	Hold:07-MAY-97		
Soil	4 S 9045 PH	Hold:16-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-APR-97		

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 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-26 Temp 2; RCRA 8 METALS Location: RFG01-04A	SB1-2-10	09-APR-97	10-APR-97	10-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-27 Temp 2; RCRA 8 METALS Location: RFG01-09A	SB1-3-1	09-APR-97	10-APR-97	10-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-28 Temp 2; RCRA 8 METALS Location: RFG01-04A	SB1-3-5	09-APR-97	10-APR-97	10-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-29 Temp 2; RCRA 8 METALS Location: RFG01-09A	SB1-3-10	09-APR-97	10-APR-97	10-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-30 Temp 2; RCRA 8 METALS Location: RFG01-04A	SB1-4-1	09-APR-97	10-APR-97	10-MAY-97
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		

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 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-42 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-2D	09-APR-97	10-APR-97	10-MAY-
		Hold:19-APR-97		
L9157-43 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-5S	09-APR-97	10-APR-97	10-MAY-
		Hold:06-OCT-97 Hold:16-APR-97 Hold:10-APR-97		
L9157-44 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-4D	09-APR-97	10-APR-97	10-MAY-
		Hold:19-APR-97		
L9157-45 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-6S	09-APR-97	10-APR-97	10-MAY-
		Hold:06-OCT-97 Hold:16-APR-97 Hold:10-APR-97		
L9157-46 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-7S	09-APR-97	10-APR-97	10-MAY-
		Hold:06-OCT-97 Hold:16-APR-97 Hold:10-APR-97		
L9157-47 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-8S	09-APR-97	10-APR-97	10-MAY-
		Hold:06-OCT-97 Hold:16-APR-97 Hold:10-APR-97		
L9157-48 Temp 2; hold Location: RFG01-4B Soil 4 S NONE	SB2-6D	09-APR-97	10-APR-97	10-MAY-
		Hold:19-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-36 Temp 2; RCRA 8 METALS Location: RFG01-09A	SB1-6-1	09-APR-97	10-APR-97	10-MAY-
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 6010 ICP TRACE		Hold:06-OCT-97		
Soil 4 S 7471 MERCURY		Hold:07-MAY-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-37 Temp 2; 6010=Cr only Location: RFG01-09A	SB2-2S	09-APR-97	10-APR-97	10-MAY-
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-38 Temp 2; 6010=Cr only Location: RFG01-09A	SB2-3S	09-APR-97	10-APR-97	10-MAY-9
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-39 Temp 2; 6010=Cr only Location: RFG01-09A	SB2-4S	09-APR-97	10-APR-97	10-MAY-9
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-40 Temp 2; 6010=Cr only Location: RFG01-09A	SB2-1D	09-APR-97	10-APR-97	10-MAY-9
Soil 4 S 6010 ICP METALS		Hold:06-OCT-97		
Soil 4 S 9045 PH		Hold:16-APR-97		
Soil 4 S PERCENT SOLIDS		Hold:10-APR-97		
L9157-41 Temp 2; hold Location: RFG01-4B	SB2-3D	09-APR-97	10-APR-97	10-MAY-9
Soil 4 S NONE		Hold:19-APR-97		

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-56 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-10D	10-APR-97	10-APR-97	10-MAY--
		Hold:20-APR-97		
L9157-57 Temp 2; 6010= Cr only Location: RFG01-04A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-12S	10-APR-97	10-APR-97	10-MAY-9
		Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97		
L9157-58 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-13S	10-APR-97	10-APR-97	10-MAY-9
		Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97		
L9157-59 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-13S-DUP	10-APR-97	10-APR-97	10-MAY-9
		Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97		
L9157-60 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-13D	10-APR-97	10-APR-97	10-MAY-9
		Hold:20-APR-97		
L9157-61 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-11D	10-APR-97	10-APR-97	10-MAY-9
		Hold:20-APR-97		
L9157-62 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-12D	10-APR-97	10-APR-97	10-MAY-9
		Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97		

C410171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-49 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-8S-DUP	09-APR-97	10-APR-97	10-MAY-97 Hold:06-OCT-97 Hold:16-APR-97 Hold:10-APR-97
L9157-50 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-7D	09-APR-97	10-APR-97	10-MAY-97 Hold:19-APR-97
L9157-51 Temp 2; hold Location: RFG01-04A Soil 4 S NONE	SB2-8D	09-APR-97	10-APR-97	10-MAY-97 Hold:19-APR-97
L9157-52 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-9D	10-APR-97	10-APR-97	10-MAY-97 Hold:20-APR-97
L9157-53 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-9S	10-APR-97	10-APR-97	10-MAY-97 Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97
L9157-54 Temp 2; 6010=Cr only Location: RFG01-04A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-10S	10-APR-97	10-APR-97	10-MAY-97 Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97
L9157-55 Temp 2; 6010=Cr only Location: RFG01-09A Soil 4 S 6010 ICP METALS Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB2-11S	10-APR-97	10-APR-97	10-MAY-97 Hold:07-OCT-97 Hold:17-APR-97 Hold:10-APR-97

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CHAIN OF CUSTODY RECORD

Client/Project Name K-MCC		Project Location Henderson, NV		ANALYSES		
Project No. 4020-CC4-200		Field Logbook No.				
Sampler: (Signature) <i>D. Pochals</i>		Chain of Custody Tape No.				
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS	
SB5-2-7	4/9/97	—		sample soil	hold	
SB5-2-10	4/9/97	1440		sample soil	X	
SB5-3-1	4/9/97	1455		sample soil	X	
SB5-3-3	4/9/97	—		soil	hold	
SB5-3-5	4/9/97	1510		soil	X	
SB5-3-7	4/9/97			soil	hold	
SB5-3-10	4/9/97	1525		soil	X	
Relinquished by: (Signature) <i>D. Pochals</i>		Date	Time	Received by: (Signature) <i>Jim Wending</i>		
Relinquished by: (Signature) <i>Jim Wending</i>		4/9/97	1530	Received by: (Signature) <i>[Signature]</i>		
Relinquished by: (Signature)		4/10/97	1540	Received for Laboratory (Signature) <i>[Signature]</i>		
Sample Disposal Method:		Disposed of by: (Signature) <i>[Signature]</i>				
SAMPLE COLLECTOR		ANALYTICAL LABORATORY				
ENSR Consulting and Engineering 1220 Avenida Acaso Camarillo, Ca. 93010 (805) 388-3775		LAs Mary Feick				
ENSR		2858				

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 07:46 pm

Login Number: L9157
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9157-63 Temp 2; hold Location: RFG01-09A Soil 4 S NONE	SB2-5D	09-APR-97	10-APR-97	10-MAY-97
		Hold:19-APR-97		
L9157-64 Temp 2; diesel Location: RFG01-09A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	S9-1RE	10-APR-97	10-APR-97	10-MAY-97
		Hold:24-APR-97 Hold:10-APR-97		
L9157-65 Temp 2; diesel Location: RFG01-09A Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	S8-1RE	10-APR-97	10-APR-97	10-MAY-97
		Hold:24-APR-97 Hold:10-APR-97		
L9157-66 Temp 2; RCRA 8 METALS Location: RFG01-4B Soil 4 S 6010 ICP METALS Soil 4 S 6010 ICP TRACE Soil 4 S 7471 MERCURY Soil 4 S 9045 PH Soil 4 S PERCENT SOLIDS	SB1-7-10D	10-APR-97	10-APR-97	10-MAY-97
		Hold:07-OCT-97 Hold:07-OCT-97 Hold:08-MAY-97 Hold:17-APR-97 Hold:10-APR-97		
L9157-67 Temp 2; diesel Location: RFG01-4B Soil 4 S 8015M - TPH Soil 4 S PERCENT SOLIDS	SB5-3-10D	09-APR-97	10-APR-97	10-MAY-97
		Hold:23-APR-97 Hold:10-APR-97		
L9157-68 Location: Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S TROYER	REPORT TYPE	11-APR-97	11-APR-97	11-MAY-97

Signature: *Gail Ackerman*
 Date: 4-11-97

0410171

CHAIN OF CUSTODY RECORD

Client/Project Name: **KMCC**
 Project Location: **HENDERSON, NV**
 Project No.: **4020-004-200**
 Field Logbook No.:

Analyses: **COIN D, PH, Total Cr, Nitrate, Arsenic, Total**

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	PH	Total Cr	Nitrate	Arsenic	Total	REMARKS
S05-1-1	4/9/97	1305		soil		X				SAMPLES
S05-1-3	4/9/97			soil	held					S05-2-1
S05-1-5	4/9/97	1310		soil	held	X				S05-2-3
S05-1-7	4/9/97			soil	held	X				delivered to lab
S05-1-10	4/9/97	1320		soil		X				4/9/97 without
S05-2-1	4/9/97			soil		X				ACC
S05-2-3	4/9/97			soil	held	X				
S05-2-5	4/9/97	1428		soil		X				

Relinquished by: (Signature) *[Signature]* Date: 4/9/97 Time: 1530
 Received by: (Signature) *[Signature]* Date: 4-10-97 Time: 1530

Relinquished by: (Signature) *[Signature]* Date: 4-10-97 Time: 1510
 Received by: (Signature) *[Signature]* Date: 4-10-97 Time: 1530

Relinquished by: (Signature) *[Signature]* Date:
 Received for Laboratory: (Signature) *[Signature]* Date: 4-10-97 Time: 1530

Sample Disposal Method:
 Disposed of by: (Signature) *[Signature]* Date:
 Time:

SAMPLE COLLECTOR: **ENSR Consulting and Engineering**
 1220 Avenida Acaso
 Camarillo, Ca. 93010
 (805) 388-3775

ANALYTICAL LABORATORY: **ENSR**
 LAS - MARY FORD
 702 361 3155

0410171

CHAIN OF CUSTODY RECORD

Client/Project Name KMCC		Project Location HENDERSON, NV		ANALYSES	
Project No. 4020-COM-200		Field Logbook No.		PH	
Sampler: (Signature) <i>[Signature]</i>		Chain of Custody Tape No.		EAC/TCO	
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS
SBI-1-1	4/9/97	1705		SBI	X
SBI-1-5	4/9/97	1710		SBI	X
SBI-1-10	4/9/97	1715		SBI	X
SBI-2-1	4/9/97	1630		SBI	X
SBI-2-5	4/9/97	1635		SBI	X
SBI-2-10	4/9/97	1640		SBI	X
SBI-3-1	4/9/97	1750		SBI	X
SBI-3-5	4/9/97	1755		SBI	X
Relinquished by: (Signature) <i>[Signature]</i>					
Relinquished by: (Signature) <i>[Signature]</i>		Date	Time	Received by: (Signature)	
		4/10/97	1530	<i>[Signature]</i>	
Relinquished by: (Signature) <i>[Signature]</i>		Date	Time	Received by: (Signature)	
		4-10-97	1530	<i>[Signature]</i>	
Sample Disposal Method:		Date	Time	Received for Laboratory: (Signature)	
		4-10-97	1530	<i>[Signature]</i> LAS	
SAMPLE COLLECTOR		Disposed of by: (Signature)		Date	Time
				4-10-97	1530

ENSR

No 2859

ANALYTICAL LABORATORY
 LAS
 Mary Ford
 (805) 388-3775

ENSR Consulting and Engineering
 1220 Avenida Acaso
 Camarillo, Ca. 93010
 (805) 388-3775

0410171

CHAIN OF CUSTODY RECORD

Client/Project Name KNICC			Project Location Henderson, NV			ANALYSES					
Project No. 4020-004-200			Field Logbook No.								
Sampler: (Signature) <i>AP Poehls</i>			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	PH GC/IC/TOCC					REMARKS	
SBI-3-10	4/9/97	1800		soil	X	X					
SBI-4-1	4/9/97	0855		soil	X	X					
SBI-4-5	4/9/97	0902		soil	X	X					
SBI-4-10	4/9/97	0910		soil	X	X					
SBI-5-1	4/9/97	0943		soil	X	X					
SBI-5-5	4/9/97	0949		soil	X	X					
SBI-5-10	4/9/97	0955		soil	X	X					
SBI-6-1	4/9/97	1025		soil	X	X					
Relinquished by: (Signature) <i>AP Poehls</i>				Date 4/10/97	Time 1530	Received by: (Signature) <i>Sm...</i>				Date 4-10-97	Time 1530
Relinquished by: (Signature) <i>...</i>				Date 4-10-97	Time 1530	Received by: (Signature) <i>...</i>				Date 4-10-97	Time 1530
Relinquished by: (Signature) <i>...</i>				Date	Time	Received for Laboratory: (Signature) <i>...</i> LAS				Date 4-10-97	Time 15.30
Sample Disposal Method:				Disposed of by: (Signature) <i>...</i>				Date	Time		
SAMPLE COLLECTOR ENSR Consulting and Engineering 1220 Avenida Acaso Camarillo, Ca. 93010 (805) 388-3775				ANALYTICAL LABORATORY LAS Mary Fred 702 361 3155				ENSR NO 2860			

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CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		Analysis Requested							
Dennis Hildebrand Chemical Corp.		HENDERSEN NV									
Field Sample No./Identification	Date	Time	Grab	Comp	Sample Container (Size/Type)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	PH	Lab ID	Remarks
SBZ-25	4/9/97	1536	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-25	4/9/97	1544	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-45	4/9/97	1609	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-1D	4/9/97	1619	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-3D	4/9/97	1622	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-2D	4/9/97	1646	X		6" SS Sleeve	SOIL	ICE	NA	X		
SBZ-5S	4/9/97	1653	X		6" SS Sleeve	SOIL	ICE	NA	X		HOLD
SBZ-4D	4/9/97	1702	X		6" SS Sleeve	SOIL	ICE	NA	X		HOLD
SBZ-6S	4/9/97	1731	X		6" SS Sleeve	SOIL	ICE	NA	X		HOLD
SBZ-7S	4/9/97	1733	X		6" SS Sleeve	SOIL	ICE	NA	X		

Relinquished by (Print Name)	Signature	Date	Received by (Print Name)	Signature	Date
DAVID DICKIN	<i>David Dickin</i>	4/10/97	HORRERO LOPEZ	<i>Horroero Lopez</i>	4/10/97
Relinquished by (Print Name)	Signature	Time	Received by (Print Name)	Signature	Time
DAVID DICKIN	<i>David Dickin</i>	15:15	CHRIS MASON KIMS	<i>Chris Mason Kims</i>	15:28
Relinquished by (Print Name)	Signature	Date	Received by (Print Name)	Signature	Date
			CHRIS MASON KIMS	<i>Chris Mason Kims</i>	4/10/97
Relinquished by (Print Name)	Signature	Time	Received by (Print Name)	Signature	Time
			CHRIS MASON KIMS	<i>Chris Mason Kims</i>	15:20
Relinquished by (Print Name)	Signature	Date	Received by (Print Name)	Signature	Date

C410171

LNS

CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		Analyte Requested					
McBride Chemical Corp		Wenderson, NV							
Project Number		Field Logbook No							
4C20-00A-200									
Sampler (Print Name) / Initiator		Chain of Custody Tape No							
David Dierin									
Signature		Send Results/Report to (Print Name)							
<i>David Dierin</i>		EPA/Conrad							
Field Sample No. / Identification	Date	Time	Grab Comp	Sample Container (Standard)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	Lab ID	Remarks
SBZ-85	4/9/97	1757	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-6D	4/9/97	1753	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-85-24	4/9/97	1813	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-7D	4/9/97	1816	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-85D	4/9/97	1821	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-9D	4/10/97	0841	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-45	4/10/97	0859	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-105	4/10/97	0904	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-115	4/10/97	0915	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
SBZ-10D	4/10/97	0924	X	6" SS Sleeve	Soil	ICE	NA	X	Hold
Relinquished by (Print Name) DAVID DIERIN		Date	4/10/97	Received by (Print Name) Conrad		Date	4-10-97	Analytical Laboratory (Destination) LFA	
Signature <i>David Dierin</i>		Time	1324	Signature <i>Conrad</i>		Time	1529		
Relinquished by (Print Name)		Date		Received by (Print Name) CHRIS MARGOLINS		Date	4-10-97		
Signature		Time		Signature <i>Chris Margolins</i>		Time	1529		
Relinquished by (Print Name)		Date		Received by (Print Name)		Date			
Signature		Time		Received by (Print Name)		Date			

C410171



CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		Analysis Requested							
Kee Chemical Corp		HENDERSON, NV		TEPH (BOLTS)							
Project Number		Field Logbook No		Lab ID							
A020-00A-200											
Sampler (Print Name) / Address		Chain of Custody Tape No		Remarks							
David Dickine											
Signature		Send Results/Report to									
<i>David Dickine</i>		ENSR / CAMPBELL									
Field Sample No / Identification	Date	Time	Grab	Comp	Sample Container (Strainer)	Sample Type (Liquid, Sludge, Etc)	Preservative	Field Filtered	Field ID	Remarks	
S02-125	4/10/97	0943	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-135	4/10/97	0952	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-135											
S02-135-DP	4/10/97	0959	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-13D	4/10/97	1044	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-11D	4/10/97	1056	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-12D	4/10/97	1107	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-5D	4/9/97	1713	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-1RE	4/10/97	1137	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
S02-1RE	4/10/97	1219	X		6" SS sleeve	SOIL	ICE	NA	X	NO ID	
Relinquished by (Print Name) David Dickine		Date	4/10/97	Time	1529	Received by (Print Name) Francisco Lopez		Date	4/10/97	Time	1529
Signature <i>David Dickine</i>						Signature <i>Francisco Lopez</i>					
Relinquished by (Print Name)		Date		Time		Received by (Print Name) CHRIS MCGEE		Date	4-10-97	Time	15:29
Signature						Signature <i>Chris McGee</i>					
Relinquished by (Print Name)		Date		Time		Received by (Print Name)		Date		Time	
Signature						Signature					

LAS

C4110171



Sample Login
Login Review Checklist

Lot Number L9157

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

SAMPLE SUMMARY REPORT

	YES	NO	N/A	Comment
1. Are all sample ID's correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Are all samples present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Are all matrices indicated correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Are all analyses on the COC logged in for the appropriate samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	+ see discrepancy analysis ch.
5. Are all analyses logged in for the correct container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Are samples logged in according to LAS batching procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LOGIN CHAIN OF CUSTODY

	YES	NO	N/A	Comment
1. Are the collect, receive, and due dates correct for every sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Have all appropriate comments been indicated in the comment section?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SAMPLE RECEIVING CHECKLIST

	YES	NO	N/A	Comment
1. Are all discrepancies between the COC and the login noted (if applicable)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Kami Tanya 4-11-97
primary review signature date

[Signature]
secondary review signature

4/11/97
date

C41C171

LAS LABORATORIES, INC.

Sample Receiving Checklist

Client Name: KEER McC

Job No:

Cooler ID:

11C-3

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 2°C

temperature of temp. blank upon receipt:

yes no n/a *Comments/Discrepancies

custody seals present

custody seals intact

chain of custody present

blue ice (or equiv.) present

blue ice (or equiv.) frozen

rad survey completed

SAMPLE CONDITION UPON RECEIPT

all bottles labeled

bottle custody seal present

bottle custody seal intact

samples intact

proper container used for sample

sample volume sufficient for analysis

proper pres. indicated on the COC

VOA's contain headspace

are samples bi-phasic (if so, indicate sample ID's):

MISCELLANEOUS ITEMS

samples with short holding times

samples to subcontract

yes no n/a *Comments/Discrepancies

ADDITIONAL COMMENTS/DISCREPANCIES 2 samples were split as duplicates per D.J. at ENSR 4-11-97

SBI-7-10D for pH + metals + metals + SPS-3-10D for SPSMP + Turbidity 4-11-97

Completed by / date: [Signature] 4-10-97

sent to the client (date/time): [Signature] 4-11-97

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt

** = please review this information and return via facsimile to the appropriate CSR (702)361-8146

C41C171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDS Number	Matrix	Method
REPORT TYPE	L9157-68 L9157-68 L9157-68		Water Water Water	GC2 INORG TYPE 2 TROYER
S8-1RE	L9157-65 L9157-65		Soil Soil	8015M - TPH PERCENT SOLID
S9-1RE	L9157-64 L9157-64		Soil Soil	8015M - TPH PERCENT SOLID.
SBI-1-1	L9157-21 L9157-21 L9157-21 L9157-21 L9157-21		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRAC 7471 MERCURY 9045 PH PERCENT SOLID
SBI-1-10	L9157-23 L9157-23 L9157-23 L9157-23 L9157-23		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRAC 7471 MERCURY 9045 PH PERCENT SOLID
SBI-1-5	L9157-22 L9157-22 L9157-22 L9157-22 L9157-22		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRACE 7471 MERCURY 9045 PH PERCENT SOLIDS
SBI-2-1	L9157-24 L9157-24 L9157-24 L9157-24 L9157-24		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRAC 7471 MERCURY 9045 PH PERCENT SOLID
SBI-2-10	L9157-26 L9157-26 L9157-26 L9157-26 L9157-26		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRAC 7471 MERCURY 9045 PH PERCENT SOLIDS
SBI-2-5	L9157-25 L9157-25 L9157-25 L9157-25 L9157-25		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRACE 7471 MERCURY 9045 PH PERCENT SOLID
SBI-3-1	L9157-27 L9157-27 L9157-27 L9157-27 L9157-27		Soil Soil Soil Soil Soil	6010 ICP METAL 6010 ICP TRAC 7471 MERCURY 9045 PH PERCENT SOLID
SBI-3-10	L9157-29 L9157-29		Soil Soil	6010 ICP METALS 6010 ICP TR

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
SB1-3-5	L9157-29		Soil	7471 MERCURY
	L9157-29		Soil	9045 PH
	L9157-29		Soil	PERCENT SOLID
SB1-4-1	L9157-28		Soil	6010 ICP META
	L9157-28		Soil	6010 ICP TRAC
	L9157-28		Soil	7471 MERCURY
	L9157-28		Soil	9045 PH
	L9157-28		Soil	PERCENT SOLID
SB1-4-10	L9157-30		Soil	6010 ICP META
	L9157-30		Soil	6010 ICP TRAC
	L9157-30		Soil	7471 MERCURY
	L9157-30		Soil	9045 PH
	L9157-30		Soil	PERCENT SOLIDS
SB1-4-5	L9157-32		Soil	6010 ICP METAL
	L9157-32		Soil	6010 ICP TRACE
	L9157-32		Soil	7471 MERCURY
	L9157-32		Soil	9045 PH
	L9157-32		Soil	PERCENT SOLIDS
SB1-5-1	L9157-31		Soil	6010 ICP METAL
	L9157-31		Soil	6010 ICP TRACE
	L9157-31		Soil	7471 MERCURY
	L9157-31		Soil	9045 PH
	L9157-31		Soil	PERCENT SOLIDS
SB1-5-10	L9157-33		Soil	6010 ICP METALS
	L9157-33		Soil	6010 ICP TRACE
	L9157-33		Soil	7471 MERCURY
	L9157-33		Soil	9045 PH
	L9157-33		Soil	PERCENT SOLIDS
SB1-5-5	L9157-35		Soil	6010 ICP METALS
	L9157-35		Soil	6010 ICP TRACE
	L9157-35		Soil	7471 MERCURY
	L9157-35		Soil	9045 PH
	L9157-35		Soil	PERCENT SOLIDS
SB1-6-1	L9157-34		Soil	6010 ICP METALS
	L9157-34		Soil	6010 ICP TRACE
	L9157-34		Soil	7471 MERCURY
	L9157-34		Soil	9045 PH
	L9157-34		Soil	PERCENT SOLIDS
SB1-6-10	L9157-36		Soil	6010 ICP METALS
	L9157-36		Soil	6010 ICP TRACE
	L9157-36		Soil	7471 MERCURY
	L9157-36		Soil	9045 PH
	L9157-36		Soil	PERCENT SOLIDS
SB1-6-10	L9157-9		Soil	6010 ICP METALS
	L9157-9		Soil	6010 ICP TRACE
	L9157-9		Soil	7471 MERCURY

C410171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9157-9		Soil	9045 PH
	L9157-9		Soil	PERCENT SOLI
SB1-6-5	L9157-8		Soil	6010 ICP MET
	L9157-8		Soil	6010 ICP TRA
	L9157-8		Soil	7471 MERCURY
	L9157-8		Soil	9045 PH
	L9157-8		Soil	PERCENT SOLI
SB1-7-1	L9157-10		Soil	6010 ICP MET
	L9157-10		Soil	6010 ICP TRA
	L9157-10		Soil	7471 MERCURY
	L9157-10		Soil	9045 PH
	L9157-10		Soil	PERCENT SOLI
SB1-7-10	L9157-12		Soil	6010 ICP MET
	L9157-12		Soil	6010 ICP TRAC
	L9157-12		Soil	7471 MERCURY
	L9157-12		Soil	9045 PH
	L9157-12		Soil	PERCENT SOLIL
SB1-7-10D	L9157-66		Soil	6010 ICP MET
	L9157-66		Soil	6010 ICP TRAC
	L9157-66		Soil	7471 MERCURY
	L9157-66		Soil	9045 PH
	L9157-66		Soil	PERCENT SOLI
SB1-7-5	L9157-11		Soil	6010 ICP META
	L9157-11		Soil	6010 ICP TRAC
	L9157-11		Soil	7471 MERCURY
	L9157-11		Soil	9045 PH
	L9157-11		Soil	PERCENT SOLID
SB2-10D	L9157-56		Soil	NONE
SB2-10S	L9157-54		Soil	6010 ICP META
	L9157-54		Soil	9045 PH
	L9157-54		Soil	PERCENT SOLII
SB2-11D	L9157-61		Soil	NONE
SB2-11S	L9157-55		Soil	6010 ICP META
	L9157-55		Soil	9045 PH
	L9157-55		Soil	PERCENT SOLID
SB2-12D	L9157-62		Soil	6010 ICP META
	L9157-62		Soil	9045 PH
	L9157-62		Soil	PERCENT SOLIE
SB2-12S	L9157-57		Soil	6010 ICP META
	L9157-57		Soil	9045 PH
	L9157-57		Soil	PERCENT SOLII
SB2-13D	L9157-60		Soil	NONE
SB2-13S	L9157-58		Soil	6010 ICP MET

0410171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9157-58		Soil	9045 PH
	L9157-58		Soil	PERCENT SOLID
SB2-13S-DUP	L9157-59		Soil	6010 ICP MET.
	L9157-59		Soil	9045 PH
	L9157-59		Soil	PERCENT SOLID
SB2-1D	L9157-40		Soil	6010 ICP METAL
	L9157-40		Soil	9045 PH
	L9157-40		Soil	PERCENT SOLID
SB2-2D	L9157-42		Soil	NONE
SB2-2S	L9157-37		Soil	6010 ICP METAL
	L9157-37		Soil	9045 PH
	L9157-37		Soil	PERCENT SOLID
SB2-3D	L9157-41		Soil	NONE
SB2-3S	L9157-38		Soil	6010 ICP METAL
	L9157-38		Soil	9045 PH
	L9157-38		Soil	PERCENT SOLID
SB2-4D	L9157-44		Soil	NONE
SB2-4S	L9157-39		Soil	6010 ICP METAL
	L9157-39		Soil	9045 PH
	L9157-39		Soil	PERCENT SOLIDS
SB2-5D	L9157-63		Soil	NONE
SB2-5S	L9157-43		Soil	6010 ICP METAL
	L9157-43		Soil	9045 PH
	L9157-43		Soil	PERCENT SOLIDS
SB2-6D	L9157-48		Soil	NONE
SB2-6S	L9157-45		Soil	6010 ICP METAL
	L9157-45		Soil	9045 PH
	L9157-45		Soil	PERCENT SOLIDS
SB2-7D	L9157-50		Soil	NONE
SB2-7S	L9157-46		Soil	6010 ICP METAL
	L9157-46		Soil	9045 PH
	L9157-46		Soil	PERCENT SOLIDS
SB2-8D	L9157-51		Soil	NONE
SB2-8S	L9157-47		Soil	6010 ICP METAL
	L9157-47		Soil	9045 PH
	L9157-47		Soil	PERCENT SOLIDS
SB2-8S-DUP	L9157-49		Soil	6010 ICP METAL
	L9157-49		Soil	9045 PH

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LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L9157-49		Soil	PERCENT SOLID
SB2-9D	L9157-52		Soil	NONE
SB2-9S	L9157-53		Soil	6010 ICP MET
	L9157-53		Soil	9045 PH
	L9157-53		Soil	PERCENT SOLID
SB5-1-1	L9157-13		Soil	8015M - TPH
	L9157-13		Soil	PERCENT SOLID
SB5-1-10	L9157-17		Soil	8015M - TPH
	L9157-17		Soil	PERCENT SOLID
SB5-1-3	L9157-14		Soil	NONE
SB5-1-5	L9157-15		Soil	8015M - TPH
	L9157-15		Soil	PERCENT SOLID
SB5-1-7	L9157-16		Soil	NONE
SB5-2-1	L9157-18		Soil	8015M - TPH
	L9157-18		Soil	PERCENT SOLID
SB5-2-10	L9157-2		Soil	8015M - TPH
	L9157-2		Soil	PERCENT SOLID
SB5-2-3	L9157-19		Soil	NONE
SB5-2-5	L9157-20		Soil	8015M - TPH
	L9157-20		Soil	PERCENT SOLID
SB5-2-7	L9157-1		Soil	NONE
SB5-3-1	L9157-3		Soil	8015M - TPH
	L9157-3		Soil	PERCENT SOLID
SB5-3-10	L9157-7		Soil	8015M - TPH
	L9157-7		Soil	PERCENT SOLID
SB5-3-10D	L9157-67		Soil	8015M - TPH
	L9157-67		Soil	PERCENT SOLID
SB5-3-3	L9157-4		Soil	NONE
SB5-3-5	L9157-5		Soil	8015M - TPH
	L9157-5		Soil	PERCENT SOLID
SB5-3-7	L9157-6		Soil	NONE

041071

NON-METALS

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-4-1

Date Collected: 09-APR-97

Matrix: Soil

Login Number: L9157

Date Received: 10-APR-97

Percent Solids: 94

Constituent	Method	Batch	Value	MDL	REL	DI	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.6	0.1	0.1	1		pH Units	17-APR-97	L9157-30

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-4-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.88

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.7	0.1	0.1	1		pH Units	17-APR-97	L9157-31

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-4-10
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 89.98

Constituent	Method	Batch	Value	MDL	ADD	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.6	0.1	0.1	1		pH Units	17-APR-97	L9157-31

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-5-1

Date Collected: 09-APR-97

Matrix: Soil

Login Number: L9157

Date Received: 10-APR-97

Percent Solids: 83.68

Constituent	Method	Batch	Value	MCL	SDL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.6	0.1	0.1	1		pH Units	17-APR-97	L9157-33

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-5-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 83.85

Constituent	Method	Batch	Value	MDL	ADD	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9	0.1	0.1	1		pH Units	17-APR-97	L9157-34

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-5-10
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 88.1

Constituent	Method	Batch	Value	MDL	REL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.5	0.1	0.1	1		pH Units	18-APR-97	L9157-35

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-6-1
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 72.6

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.8	0.1	0.1	1		pH Units	18-APR-97	L9157-36

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-2S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 97.65

Constituent	Method	Batch	Value	MDL	APL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.6	0.1	0.1	1		pH Units	18-APR-97	L9157-37

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-3S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 89.34

Constituent	Method	Batch	Value	MOL	MDL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47575	10.3	0.1	0.1	1		pH Units	18-APR-97	L9157-36

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-4S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 83.95

Constituent	Method	Acch	Value	MDL	RD	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	10.4	0.1	0.1	1		pH Units	18-APR-97	L9157-39

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-1D
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 93.56

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.9	0.1	0.1	1		pH Units	18-APR-97	L9157-40

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-2-1
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.15

Constituent	Method	Batch	Value	MDL	ADL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.2	0.1	0.1	1		pH Units	17-APR-97	L9157-24

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-2-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.47

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.3	0.1	0.1	1		pH Units	17-APR-97	L9157-25

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-2-10

Date Collected: 09-APR-97

Matrix: Soil

Login Number: L9157

Date Received: 10-APR-97

Percent Solids: 91.26

Constituent	Method	Batch	Value	MDL	RDT	D(1)	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.7	0.1	0.1	1		pH Units	17-APR-97	L9157-26

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-5S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.33

Constituent	Method	Batch	Value	MDL	IDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.7	0.1	0.1	1		pH Units	18-APR-97	L9157-43

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-1-1
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 94.32

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.9	0.1	0.1	1		pH Units	17-APR-97	L9157-21

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-1-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.49

Constituent	Method	Batch	Value	MDL	MDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.6	0.1	0.1	1		pH Units	17-APR-97	L9157-2

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-1-10
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 92.37

Constituent	Method	Batch	Value	MDL	SDG	D/I	Goal	Units	Analyzed	Lab ID
PH	9045	47574	8.2	0.1	0.1	1		pH Units	17-APR-97	L9157-23

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-6S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 95.22

Constituent	Method	Batch	Value	MDL	RED	DII	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.1	0.1	0.1	1		pH Units	18-APR-97	L9157-45

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-7S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 90.19

Constituent	Method	Batch	Value	MDL	SDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.7	0.1	0.1	1		pH Units	18-APR-97	L9157-46

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-8S
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 88.78

Constituent	Method	Batch	Value	MDL	SDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	10	0.1	0.1	1		pH Units	18-APR-97	L9157-47

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Object Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-3-1
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 87.33

Constituent	Method	Batch	Value	MCL	RDL	HL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.6	0.1	0.1	1		pH Units	17-APR-97	L9157-27

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-3-5
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 85.95

Constituent	Method	Batch	Value	MDL	SDL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.5	0.1	0.1	1		pH Units	17-APR-97	L9157-28

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-3-10

Date Collected: 09-APR-97

Matrix: Soil

Login Number: L9157

Date Received: 10-APR-97

Percent Solids: 88.69

Constituent	Method	Batch	Value	MCL	SDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.7	0.1	0.1	1		pH Units	17-APR-97	L9157-29

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-8S-DUP
Date Collected: 09-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 89.45

Constituent	Method	Batch	Value	MDL	RDL	DI	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.9	0.1	0.1	1		pH Units	18-APR-97	L9157-49

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-9S
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 94.97

Constituent	Method	Batch	Value	MCL	RDL	DIT	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.5	0.1	0.1	1		pH Units	18-APR-97	L9157-53

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: Y UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-10S
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.1

Constituent	Method	Batch	Value	MCL	SDL	Chi	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.8	0.1	0.1	1		pH Units	18-APR-97	L9157-54

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-11S
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 93.15

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.6	0.1	0.1	1		pH Units	18-APR-97	L9157-55

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-12S
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.88

Constituent	Method	Batch	Value	MCL	REL	DII	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.5	0.1	0.1	1		pH Units	18-APR-97	L9157-57

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-13S
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.13

Constituent	Method	Batch	Value	MDL	REL	DI	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.9	0.1	0.1	1		pH Units	10-APR-97	L9157-58

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-13S-DUP
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.76

Constituent	Method	Batch	Value	MDL	RDL	Eff	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.9	0.1	0.1	1		pH Units	18-APR-97	L9157-59

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-6-5
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 93.34

Constituent	Method	Batch	Value	MDL	SDL	DU	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.4	0.1	0.1	1		pH Units	17-APR-97	L9157-8

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-6-10
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.14

Constituent	Method	Acch	Value	MCL	SDL	RII	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.6	0.1	0.1	1		pH Units	17-APR-97	L9157-9

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-12D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 94.85

Constituent	Method	Batch	Value	MCL	MDL	Bill	Qual	Units	Analyzed	Lab ID
PH	9045	47575	9.4	0.1	0.1	1		pH Units	18-APR-97	L9157-62

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-1
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 80.84

Constituent	Method	Batch	Value	MOL	BDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47574	9.2	0.1	0.1	1		pH Units	17-APR-97	L9157-10

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-5
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 92.86

Constituent	Method	Batch	Value	MCL	IDL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.4	0.1	0.1	1		pH Units	17-APR-97	L9157-11

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-10D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 91.87

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	47575	8.8	0.1	0.1	1		pH Units	18-APR-97	L9157-66

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee + Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-10
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9157
Date Received: 10-APR-97
Percent Solids: 92.64

Constituent	Method	Batch	Value	MDL	ADL	DIL	Qual	Units	Analyzed	Lab ID
PH	9045	47574	8.9	0.1	0.1	1		pH Units	17-APR-97	L9157-12

AS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Client/SDG Number: L9157

Sample	Batch ID	Date Analyzed	Client ID	ZAL ID	Sample ID	SDP Result	SDP Result	Units	XPD	Units	XPD	Units
	47574	17-APR-97	SBI-7-1	L9157-10	47574DUP	9.20	9.19	pH Units	0.010			20
	47575	18-APR-97	SBI-5-10	L9157-35	47575DUP	9.48	9.51	pH Units	0.030			20

NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: Y UNITS: mg

The duplicate precision for pH is the absolute difference.

METALS

SOILS

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-1-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 94.32

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	3.2	0.6	2.	1	*	mg/kg	30-APR-97	L9157-21
BARIUM, TOTAL	6010	47626	173	0.2	40	1	*	mg/kg	30-APR-97	L9157-21
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-21
CHROMIUM, TOTAL	6010	47626	11.4	0.2	2.	1		mg/kg	30-APR-97	L9157-21
LEAD, TOTAL	6010	47626	8	0.4	0.6	1		mg/kg	30-APR-97	L9157-21
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-21
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-21
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-21

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-1-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 91.49

Constituent	Method	Batch	Value	MDC	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	4.4	0.6	2.	1	*	mg/kg	30-APR-97	L9157-22
BARIUM, TOTAL	6010	47626	131	0.2	40	1	*	mg/kg	30-APR-97	L9157-22
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-22
CHROMIUM, TOTAL	6010	47626	9.9	0.2	2.	1		mg/kg	30-APR-97	L9157-22
LEAD, TOTAL	6010	47626	5.1	0.4	0.6	1		mg/kg	30-APR-97	L9157-22
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-22
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-22
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-22

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SBI-6-5
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 93.34

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	4.2	0.6	2.	1	*	mg/kg	30-APR-97	L9157-8
BARIUM, TOTAL	6010	47626	164	0.2	40	1	*	mg/kg	30-APR-97	L9157-8
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-8
CHROMIUM, TOTAL	6010	47626	15.8	0.2	2.	1		mg/kg	30-APR-97	L9157-8
LEAD, TOTAL	6010	47626	8.9	0.4	0.6	1		mg/kg	30-APR-97	L9157-8
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-8
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-8
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-8

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-6-10
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 91.14

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47626	6.7	0.6	2.	1	*	mg/kg	30-APR-97	L9157-9
BARIUM, TOTAL	6010	47626	197	0.2	40	1	*	mg/kg	30-APR-97	L9157-9
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-9
CHROMIUM, TOTAL	6010	47626	13.8	0.2	2.	1		mg/kg	30-APR-97	L9157-9
LEAD, TOTAL	6010	47626	7	0.4	0.6	1		mg/kg	30-APR-97	L9157-9
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-9
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-9
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-9

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-7-1
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 80.84

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	6.6	0.7	2.	1	*	mg/kg	30-APR-97	L9157-10
BARIUM, TOTAL	6010	47626	168	0.2	40	1	*	mg/kg	30-APR-97	L9157-10
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-10
CHROMIUM, TOTAL	6010	47626	31.3	0.2	2.	1		mg/kg	30-APR-97	L9157-10
LEAD, TOTAL	6010	47626	184	0.4	0.7	1		mg/kg	30-APR-97	L9157-10
SELENIUM, TOTAL	6010	47626	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-10
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-10
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-10

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-7-5
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 92.86

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	18.3	0.6	2.	1	*	mg/kg	30-APR-97	L9157-11
BARIUM, TOTAL	6010	47626	812	0.2	40	1	*	mg/kg	30-APR-97	L9157-11
CADMIUM, TOTAL	6010	47626	0.428	0.4	1.	1	B	mg/kg	30-APR-97	L9157-11
CHROMIUM, TOTAL	6010	47626	37.7	0.2	2.	1		mg/kg	30-APR-97	L9157-11
LEAD, TOTAL	6010	47626	60.6	0.4	0.6	1		mg/kg	30-APR-97	L9157-11
SELENIUM, TOTAL	6010	47626	<9.	9.	10	10	U	mg/kg	30-APR-97	L9157-11
SILVER, TOTAL	6010	47626	0.6	0.4	2.	1	B	mg/kg	30-APR-97	L9157-11
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-11

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-10
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S3
Date Received: 10-APR-97
Percent Solids: 92.64

Constituent	Method	Batch	Value	MCL	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47626	5.1	0.6	2.	1	*	mg/kg	30-APR-97	L9157-12
BARIUM, TOTAL	6010	47626	178	0.2	40	1	*	mg/kg	30-APR-97	L9157-12
CADMIUM, TOTAL	6010	47626	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-12
CHROMIUM, TOTAL	6010	47626	14.6	0.2	2.	1		mg/kg	30-APR-97	L9157-12
LEAD, TOTAL	6010	47626	8.9	0.4	0.6	1		mg/kg	30-APR-97	L9157-12
SELENIUM, TOTAL	6010	47626	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-12
SILVER, TOTAL	6010	47626	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-12
MERCURY	7471	47630	<0.1	0.1	0.1	1	U	mg/kg	21-APR-97	L9157-12

PHOD BLANK DATA SUMMARY

Pin/SDG Number: L9145S3

Element	Batch ID	Date Analyzed	Lab ID	MS Result	MS	SDG	Units	Dist
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.6	0.6	2.	mg/kg	U
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.2	0.2	40	mg/kg	U
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	1.	mg/kg	U
PHOD, TOTAL	47626	30-APR-97	47626MB	0.5	0.2	2.	mg/kg	B
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	0.6	mg/kg	U
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.8	0.8	1.	mg/kg	U
PHOD, TOTAL	47626	30-APR-97	47626MB	<0.4	0.4	2.	mg/kg	U
PHOD, TOTAL	47630	21-APR-97	47630MB	<0.1	0.1	0.1	mg/kg	U

AME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

DUPLICATE DATA SUMMARY

Well/SDG Number: L9145S3

Sample Type	Batch ID	Date Analyzed	Client ID	LAB ID	Sample ID	SRP Result	DUP Result	Units	RPD	Date Qual	RPD Limit
NIC, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	11.4	24.5	mg/kg	72.6	a	20
IM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	1010	1450	mg/kg	35.6	a	20
NUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<0.4	<0.4	mg/kg		b	20
MIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	21.4	19.1	mg/kg	11.0		20
TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	56.4	52.0	mg/kg	8.1		20
MIUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<4.	<4.	mg/kg		b	20
SR, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626DUP	<0.4	<0.4	mg/kg		b	20
dry	47630	21-APR-97	SB4-1S	L9145-26	47630DUP	<0.1	<0.1	mg/kg		b	20

ME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

Relative Percent Difference (RPD) for duplicate analysis exceeded acceptance limits. The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

RIX SPIKE DATA SUMMARY

in/SDG Number: L9145S3

Type	Batch ID	Date Analyzed	Client ID	AN ID	Sample ID	MS Result	SMP Result	Score Value	Units	# Mac	OC Qual	OC Limits
CHL, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	95.8	11.4	96.4	mg/kg	87		75-125
PM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	1310	1010	386.	mg/kg	78		75-125
NUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	9.35	<0.4	9.64	mg/kg	97		75-125
NUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	54.6	21.4	38.6	mg/kg	86		75-125
TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	139.	56.4	96.4	mg/kg	85		75-125
NUM, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	106.	<4.	96.4	mg/kg	110		75-125
R, TOTAL	47626	30-APR-97	SB4-1S	L9145-26	47626MS	9.57	<0.4	9.64	mg/kg	99		75-125
RY	47630	21-APR-97	SB4-1S	L9145-26	47630MS	0.502	<0.1	0.476	mg/kg	105		75-125

FILE: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

DATA SUMMARY

In/SDG Number: L9145S3

Type	Batch ID	Date Analyzed	Lab ID	LCS Result	Known Value	Units	Rec	Date Qual	CC Limits
IC, TOTAL	47626	30-APR-97	47626LCSS	343.	349.	mg/kg	98		49-149
M, TOTAL	47626	30-APR-97	47626LCSS	99.7	111.	mg/kg	90		17-184.7
IM, TOTAL	47626	30-APR-97	47626LCSS	48.3	46.9	mg/kg	103		52-144
IUM, TOTAL	47626	30-APR-97	47626LCSS	123.	115.	mg/kg	107		54-141.7
TOTAL	47626	30-APR-97	47626LCSS	52.0	52.4	mg/kg	99		53-142
IUM, TOTAL	47626	30-APR-97	47626LCSS	183.	185.	mg/kg	99		52-149
R, TOTAL	47626	30-APR-97	47626LCSS	171.	154.	mg/kg	111		45-146
IC, TOTAL	47626	30-APR-97	47626LCSM	0.470	0.500	mg/l	94		80-120
M, TOTAL	47626	30-APR-97	47626LCSM	1.97	2.00	mg/l	99		80-120
IM, TOTAL	47626	30-APR-97	47626LCSM	0.0490	0.0500	mg/l	98		80-120
IUM, TOTAL	47626	30-APR-97	47626LCSM	0.204	0.200	mg/l	102		80-120
TOTAL	47626	30-APR-97	47626LCSM	0.493	0.500	mg/l	99		80-120
IUM, TOTAL	47626	30-APR-97	47626LCSM	0.439	0.500	mg/l	88		80-120
R, TOTAL	47626	30-APR-97	47626LCSM	0.0491	0.0500	mg/l	98		80-120
ITY	47630	21-APR-97	47630LCSS	16.6	13.1	mg/kg	126		48-156
ITY	47630	21-APR-97	47630LCSM	0.000935	0.00100	mg/l	94		80-120

ME: genmetqc2 TYPE (S-SDG, L-LogIn): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-1D
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 93.56

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	131	0.8	2.	1	*	mg/kg	19-APR-97	L9157-40

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-2S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 97.65

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	108	0.8	2.	1	*	mg/kg	19-APR-97	L9157-37

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-3S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 89.34

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	92.6	0.9	2.	1	*	mg/kg	19-APR-97	L9157-38

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-4S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L914554
Date Received: 10-APR-97
Percent Solids: 83.95

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	261.	1.	2.	1	*	mg/kg	19-APR-97	L9157-39

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB2-5S

Date Collected: 09-APR-97

Matrix: Soil

SDG Number: L9145S4

Date Received: 10-APR-97

Percent Solids: 91.33

Constituent	Method	Batch	Value	MDC	RDL	DLI	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	13	0.9	2.	1	*	mg/kg	19-APR-97	L9157-43

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-6S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 95.22

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	24.8	0.8	2.	1	*	mg/kg	19-APR-97	L9157-45

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-7S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 90.19

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	224	0.9	2.	1	*	mg/kg	19-APR-97	L9157-46

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-8S
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 88.78

Constituent	Method	Batch	Value	MDC	RDL	DL	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	1890	0.9	2.	1	*	mg/kg	19-APR-97	L9157-47

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB2-8S-DUP

Date Collected: 09-APR-97

Matrix: Soil

SDG Number: L9145S4

Date Received: 10-APR-97

Percent Solids: 89.45

Constituent	Method	Batch	Value	MCL	RDL	DLI	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	1680	0.9	2.	1	*	mg/kg	19-APR-97	L9157-49

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-9S
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 94.97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	493	0.8	2.	1	*	mg/kg	19-APR-97	L9157-53

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB2-10S

Date Collected: 10-APR-97

Matrix: Soil

SDG Number: L9145S4

Date Received: 10-APR-97

Percent Solids: 91.1

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	1560	0.9	2.	1	*	mg/kg	19-APR-97	L9157-54

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-11S
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 93.15

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	1130	0.9	2.	1	*	mg/kg	19-APR-97	L9157-55

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-12S
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 91.88

Constituent	Method	Batch	Value	MDC	RDL	D13	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	884	0.9	2.	1	*	mg/kg	19-APR-97	L9157-57

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB2-13S

Date Collected: 10-APR-97

Matrix: Soil

SDG Number: L9145S4

Date Received: 10-APR-97

Percent Solids: 91.13

Constituent	Method	Batch	Value	MDC	RDL	DIL	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	532	0.9	2.	1	*	mg/kg	19-APR-97	L9157-58

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-13S-DUP
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 91.76

Constituent	Method	Batch	Value	MDL	RDL	GL	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	47620	481	0.9	2.	1	*	mg/kg	19-APR-97	L9157-59

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-12D
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9145S4
Date Received: 10-APR-97
Percent Solids: 94.85

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	47620	86	0.8	2.	1	*	mg/kg	19-APR-97	L9157-62

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Client ID	EAL ID	Sample ID	MS Result	SWP Result	Known Value	Units	Rec	Date Qual	QC Limits
THROMIUM	47620	19-APR-97	SB2-1S	L9145-24	47620MS	1240	1030	40.0	mg/kg	529	a	75-125

PT NAME: genmetqc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

- The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.

IAS Laboratories, Inc.

ICS DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	LAL ID	ICS Result	Open Value	Units	Req	Data Qual	OS Limits
THROMIUM	47620	19-APR-97	47620LCSS	122.	115.	mg/kg	106		54-141.7
THROMIUM	47620	19-APR-97	47620LCSM	0.207	0.200	mg/l	104		80-120

LIST NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Lab. ID	MR Result	MR	ROI	Units	Max. Qual.
CHROMIUM	47620	19-APR-97	47620MB	<0.8	0.8	2.	mg/kg	U

PT NAME: gemmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9145S4

Analyte	Batch ID	Date Analyzed	Client ID	LAB ID	Sample ID	SRP Result	DDP Result	DDP Units	Date Qual	RPD Limit
CHROMIUM	47620	19-APR-97	SB2-1S	L9145-24	47620DUP	1030	1380	mg/kg	29.7 *	20

TEST NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

* Relative Percent Difference (RPD) for duplicate analysis exceeded acceptance limits.

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

LogIn/SDG Number: L9157S

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SWP Result	Known Value	Units	% Rec	Data Qual	QC Limit
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	97.8	5.07	102.	mg/kg	91		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	572.	183.	408.	mg/kg	95		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	9.92	<0.4	10.2	mg/kg	97		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	54.3	13.6	40.8	mg/kg	100		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	104.	8.71	102.	mg/kg	93		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	88.7	<0.8	102.	mg/kg	87		75-125
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627MS	10.1	<0.4	10.2	mg/kg	99		75-125
CHROMIUM, TOTAL	47631	25-APR-97	SBI-1-10	L9157-23	47631MS	0.586	<0.1	0.541	mg/kg	108		75-125

NAME: genmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

ICS DATA SUMMARY

Login/SDG Number: L9157S

Element	Batch ID	Date Analyzed	LAB ID	ICP Result	Known Value	Units	% Rec	Date Recd	OC Limits
SENIC, TOTAL	47627	30-APR-97	47627LCSS	353.	349.	mg/kg	101		49-149
URIUM, TOTAL	47627	30-APR-97	47627LCSS	104.	111.	mg/kg	94		17-184.7
OMIUM, TOTAL	47627	30-APR-97	47627LCSS	48.3	46.9	mg/kg	103		52-144
OMIUM, TOTAL	47627	30-APR-97	47627LCSS	126.	115.	mg/kg	110		54-141.7
LD, TOTAL	47627	30-APR-97	47627LCSS	50.6	52.4	mg/kg	97		53-142
ENIUM, TOTAL	47627	30-APR-97	47627LCSS	187.	185.	mg/kg	101		52-149
VER, TOTAL	47627	30-APR-97	47627LCSS	175.	154.	mg/kg	113		45-146
SENIC, TOTAL	47627	30-APR-97	47627LCSW	0.484	0.500	mg/l	97		80-120
URIUM, TOTAL	47627	30-APR-97	47627LCSW	2.01	2.00	mg/l	101		80-120
OMIUM, TOTAL	47627	30-APR-97	47627LCSW	0.0504	0.0500	mg/l	101		80-120
ROMIUM, TOTAL	47627	30-APR-97	47627LCSW	0.209	0.200	mg/l	105		80-120
LEAD, TOTAL	47627	30-APR-97	47627LCSW	0.502	0.500	mg/l	100		80-120
SELENIUM, TOTAL	47627	30-APR-97	47627LCSW	0.453	0.500	mg/l	91		80-120
SILVER, TOTAL	47627	30-APR-97	47627LCSW	0.0514	0.0500	mg/l	103		80-120
Mercury	47631	25-APR-97	47631LCSS	10.9	13.1	mg/kg	83		48-156
Mercury	47631	25-APR-97	47631LCSW	0.00105	0.00100	mg/l	105		80-120

IT NAME: genmetqc2 TYPE (S=SDG, L=Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9157S

Analyte	Batch ID	Date Analyzed	LAL ID	MB Result	MDL	ROL	Units	Test Unit
ARSENIC, TOTAL	47627	30-APR-97	47627MB	<0.6	0.6	2.	mg/kg	U
BARIUM, TOTAL	47627	30-APR-97	47627MB	<0.2	0.2	40	mg/kg	U
CADMIUM, TOTAL	47627	30-APR-97	47627MB	<0.4	0.4	1.	mg/kg	U
CHROMIUM, TOTAL	47627	30-APR-97	47627MB	0.6	0.2	2.	mg/kg	B
LEAD, TOTAL	47627	30-APR-97	47627MB	<0.4	0.4	0.6	mg/kg	U
SELENIUM, TOTAL	47627	30-APR-97	47627MB	<0.8	0.8	1.	mg/kg	U
SILVER, TOTAL	47627	30-APR-97	47627MB	<0.4	0.4	2.	mg/kg	U
Mercury	47631	25-APR-97	47631MB	<0.1	0.1	0.1	mg/kg	U

NAME: gemetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

AS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9157S

Analyte	Batch ID	Date Analyzed	Client ID	Lab ID	Sample ID	EMP Result	DUP Result	Units	RPD	EMP Limit	RPD Limit
ARSENIC, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	5.07	5.16	mg/kg	1.7	20	20
BARIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	183.	193.	mg/kg	5.1	20	20
CADMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	<0.4	<0.4	mg/kg		b	20
CHROMIUM, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	13.6	14.2	mg/kg	4.6	20	20
COPPER, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	8.71	8.23	mg/kg	5.6	20	20
LEAD, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	<0.8	<0.8	mg/kg		b	20
NICKEL, TOTAL	47627	30-APR-97	SBI-1-10	L9157-23	47627DUP	<0.4	<0.4	mg/kg		b	20
ZINC, TOTAL	47631	25-APR-97	SBI-1-10	L9157-23	47631DUP	<0.1	<0.1	mg/kg		b	20

NAME: genmetq2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-4-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 94

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	5.6	0.6	2.	1		mg/kg	30-APR-97	L9157-30
BARIUM, TOTAL	6010	47627	72.3	0.2	40	1		mg/kg	30-APR-97	L9157-30
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-30
CHROMIUM, TOTAL	6010	47627	5.70	1.	10	5	B	mg/kg	02-MAY-97	L9157-30
LEAD, TOTAL	6010	47627	8.33	2.	3.	5		mg/kg	02-MAY-97	L9157-30
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-30
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-30
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-30

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-4-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 91.88

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	5	0.6	2.	1		mg/kg	30-APR-97	L9157-31
BARIUM, TOTAL	6010	47627	328	0.2	40	1		mg/kg	30-APR-97	L9157-31
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-31
CHROMIUM, TOTAL	6010	47627	12.6	0.2	2.	1		mg/kg	30-APR-97	L9157-31
LEAD, TOTAL	6010	47627	8.5	0.4	0.6	1		mg/kg	30-APR-97	L9157-31
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-31
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-31
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-31

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-4-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 89.98

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	6.3	0.7	2.	1		mg/kg	30-APR-97	L9157-32
BARIUM, TOTAL	6010	47627	75.2	0.2	40	1		mg/kg	30-APR-97	L9157-32
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-32
CHROMIUM, TOTAL	6010	47627	18	0.2	2.	1		mg/kg	30-APR-97	L9157-32
LEAD, TOTAL	6010	47627	7.8	0.4	0.7	1		mg/kg	30-APR-97	L9157-32
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-32
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-32
MERCURY	7471	47631	<0.4	0.4	0.4	4	U	mg/kg	25-APR-97	L9157-32

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-5-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 83.68

Constituent	Method	Batch	Value	MDL	REL	DLI	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47627	8.6	0.7	2.	1		mg/kg	30-APR-97	L9157-33
BARIUM, TOTAL	6010	47627	237	0.2	50	1		mg/kg	30-APR-97	L9157-33
CADMIUM, TOTAL	6010	47627	<0.5	0.5	1.	1	U	mg/kg	30-APR-97	L9157-33
CHROMIUM, TOTAL	6010	47627	23.8	1.	10	5		mg/kg	02-MAY-97	L9157-33
LEAD, TOTAL	6010	47627	65.8	2.	4.	5		mg/kg	02-MAY-97	L9157-33
SELENIUM, TOTAL	6010	47627	<5.	5.	6.	5	U	mg/kg	02-MAY-97	L9157-33
SILVER, TOTAL	6010	47627	<0.5	0.5	2.	1	U	mg/kg	30-APR-97	L9157-33
MERCURY	7471	47631	0.1	0.1	0.1	1		mg/kg	25-APR-97	L9157-33

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
 Project Name: KERR-MCGEE
 Project Desc: Misc.

Client Sample ID: SB1-5-5
 Date Collected: 09-APR-97
 Matrix: Soil

SDG Number: L9157S
 Date Received: 10-APR-97
 Percent Solids: 83.85

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47627	17.4	0.7	2.	1		mg/kg	30-APR-97	L9157-34
BARIUM, TOTAL	6010	47627	397	0.2	50	1		mg/kg	30-APR-97	L9157-34
CADMIUM, TOTAL	6010	47627	2.6	0.5	1.	1		mg/kg	30-APR-97	L9157-34
CHROMIUM, TOTAL	6010	47627	43.5	0.2	2.	1		mg/kg	30-APR-97	L9157-34
LEAD, TOTAL	6010	47627	158	0.5	0.7	1		mg/kg	30-APR-97	L9157-34
SELENIUM, TOTAL	6010	47627	<5.	5.	6.	5	U	mg/kg	02-MAY-97	L9157-34
SILVER, TOTAL	6010	47627	<0.5	0.5	2.	1	U	mg/kg	30-APR-97	L9157-34
MERCURY	7471	47631	<0.4	0.4	0.4	4	U	mg/kg	25-APR-97	L9157-34

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-5-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 88.1

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	4.3	0.6	2.	1		mg/kg	30-APR-97	L9157-35
BARIUM, TOTAL	6010	47627	212	0.2	40	1		mg/kg	30-APR-97	L9157-35
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-35
CHROMIUM, TOTAL	6010	47627	16.1	0.2	2.	1		mg/kg	30-APR-97	L9157-35
LEAD, TOTAL	6010	47627	10.3	0.4	0.6	1		mg/kg	30-APR-97	L9157-35
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-35
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-35
MERCURY	7471	47631	<0.5	0.5	0.5	4	U	mg/kg	25-APR-97	L9157-35

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-6-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 72.6

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47627	4.1	0.8	3.	1		mg/kg	30-APR-97	L9157-36
BARIUM, TOTAL	6010	47627	245	0.3	50	1		mg/kg	30-APR-97	L9157-36
CADMIUM, TOTAL	6010	47627	<0.5	0.5	1.	1	U	mg/kg	30-APR-97	L9157-36
CHROMIUM, TOTAL	6010	47627	15.9	0.3	3.	1		mg/kg	30-APR-97	L9157-36
LEAD, TOTAL	6010	47627	16	0.5	0.8	1		mg/kg	30-APR-97	L9157-36
SELENIUM, TOTAL	6010	47627	<1.	1.	1.	1	U	mg/kg	30-APR-97	L9157-36
SILVER, TOTAL	6010	47627	<0.5	0.5	3.	1	U	mg/kg	30-APR-97	L9157-36
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-36

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-2-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 91.15

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	3.9	0.6	2.	1		mg/kg	30-APR-97	L9157-24
BARIUM, TOTAL	6010	47627	180	0.2	40	1		mg/kg	30-APR-97	L9157-24
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-24
CHROMIUM, TOTAL	6010	47627	11	0.2	2.	1		mg/kg	30-APR-97	L9157-24
LEAD, TOTAL	6010	47627	9.7	0.4	0.6	1		mg/kg	30-APR-97	L9157-24
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-24
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-24
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-24

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-2-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 91.47

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
ARSENIC, TOTAL	6010	47627	4.1	0.7	2.	1		mg/kg	30-APR-97	L9157-25
BARIUM, TOTAL	6010	47627	286	0.2	40	1		mg/kg	30-APR-97	L9157-25
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-25
CHROMIUM, TOTAL	6010	47627	12.8	0.2	2.	1		mg/kg	30-APR-97	L9157-25
LEAD, TOTAL	6010	47627	9	0.4	0.7	1		mg/kg	30-APR-97	L9157-25
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-25
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-25
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-25

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-2-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 91.26

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	5	0.6	2.	1		mg/kg	30-APR-97	L9157-26
BARIUM, TOTAL	6010	47627	198	0.2	40	1		mg/kg	30-APR-97	L9157-26
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-26
CHROMIUM, TOTAL	6010	47627	11.8	0.2	2.	1		mg/kg	30-APR-97	L9157-26
LEAD, TOTAL	6010	47627	8	0.4	0.6	1		mg/kg	30-APR-97	L9157-26
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-26
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-26
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-26

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: SB1-1-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 92.37

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	5.1	0.6	2.	1		mg/kg	30-APR-97	L9157-23
BARIUM, TOTAL	6010	47627	183	0.2	40	1		mg/kg	30-APR-97	L9157-23
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-23
CHROMIUM, TOTAL	6010	47627	13.6	0.2	2.	1		mg/kg	30-APR-97	L9157-23
LEAD, TOTAL	6010	47627	8.7	0.4	0.6	1		mg/kg	30-APR-97	L9157-23
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-23
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-23
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-23

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-3-1
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 87.33

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	3.5	0.7	2.	1		mg/kg	30-APR-97	L9157-27
BARIUM, TOTAL	6010	47627	182	0.2	50	1		mg/kg	30-APR-97	L9157-27
CADMIUM, TOTAL	6010	47627	<0.5	0.5	1.	1	U	mg/kg	30-APR-97	L9157-27
CHROMIUM, TOTAL	6010	47627	10.2	0.2	2.	1		mg/kg	30-APR-97	L9157-27
LEAD, TOTAL	6010	47627	8.4	0.5	0.7	1		mg/kg	30-APR-97	L9157-27
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-27
SILVER, TOTAL	6010	47627	<0.5	0.5	2.	1	U	mg/kg	30-APR-97	L9157-27
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-27

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-3-5
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 85.95

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	3.4	0.7	2.	1		mg/kg	30-APR-97	L9157-28
BARIUM, TOTAL	6010	47627	96.8	0.2	50	1		mg/kg	30-APR-97	L9157-28
CADMIUM, TOTAL	6010	47627	<0.5	0.5	1.	1	U	mg/kg	30-APR-97	L9157-28
CHROMIUM, TOTAL	6010	47627	9.9	0.2	2.	1		mg/kg	30-APR-97	L9157-28
LEAD, TOTAL	6010	47627	6	0.5	0.7	1		mg/kg	30-APR-97	L9157-28
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-28
SILVER, TOTAL	6010	47627	<0.5	0.5	2.	1	U	mg/kg	30-APR-97	L9157-28
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-28

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-3-10
Date Collected: 09-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 88.69

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	5.2	0.6	2.	1		mg/kg	30-APR-97	L9157-29
BARIUM, TOTAL	6010	47627	213	0.2	40	1		mg/kg	30-APR-97	L9157-29
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-29
CHROMIUM, TOTAL	6010	47627	13.4	0.2	2.	1		mg/kg	30-APR-97	L9157-29
LEAD, TOTAL	6010	47627	8.4	0.4	0.6	1		mg/kg	30-APR-97	L9157-29
SELENIUM, TOTAL	6010	47627	<0.8	0.8	1.	1	U	mg/kg	30-APR-97	L9157-29
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-29
MERCURY	7471	47631	<0.1	0.1	0.1	1	U	mg/kg	25-APR-97	L9157-29

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB1-7-10D
Date Collected: 10-APR-97
Matrix: Soil

SDG Number: L9157S
Date Received: 10-APR-97
Percent Solids: 91.87

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47627	4.7	0.6	2.	1		mg/kg	30-APR-97	L9157-66
BARIUM, TOTAL	6010	47627	134	0.2	40	1		mg/kg	30-APR-97	L9157-66
CADMIUM, TOTAL	6010	47627	<0.4	0.4	1.	1	U	mg/kg	30-APR-97	L9157-66
CHROMIUM, TOTAL	6010	47627	14.3	0.2	2.	1		mg/kg	30-APR-97	L9157-66
LEAD, TOTAL	6010	47627	6.9	0.4	0.6	1		mg/kg	30-APR-97	L9157-66
SELENIUM, TOTAL	6010	47627	<0.9	0.9	1.	1	U	mg/kg	30-APR-97	L9157-66
SILVER, TOTAL	6010	47627	<0.4	0.4	2.	1	U	mg/kg	30-APR-97	L9157-66
MERCURY	7471	47631	<0.4	0.4	0.4	4	U	mg/kg	25-APR-97	L9157-66

EPA METHOD 8015M (Total Petroleum Hydrocarbon)

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB5-2-10	LAS Sample ID:	L9157-2
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	10
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	13	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	107%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	6700	340	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SE5-3-1	LAS Sample ID:	L9157-3
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	25
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	10.2	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	75%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	4500	840	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

8015M - TPH

Client Sample ID:	SBS-3-5	LAS Sample ID:	L9157-5
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	2
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	6.46	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	110%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	1300	64.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	S85-1-5	LAS Sample ID:	L9157-15
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-2
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	12.91	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	93%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<34.	34.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB5-1-10	LAS Sample ID:	L9157-17
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-2
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	12.62	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	105%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<34.	34.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SE5-3-10	LAS Sample ID:	L9157-7
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-2
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	0.99
Percent Moisture:	8.2	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	98±	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	520	32.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB5-1-1	LAS Sample ID:	L9157-13
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	50
Matrix:	Soil	Preparation Dilution:	0.99
Percent Moisture:	12.54	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	93%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	16000	1700	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	SB5-2-1	LAS Sample ID:	L9157-18
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	10
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	7.94	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	99%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	7500	330	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SE5-2-5	LAS Sample ID:	L9157-20
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	10
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	11.88	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	91%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	9100	340	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	S9-1RE	LAS Sample ID:	L9157-64
Date Collected:	10-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-2
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	5.99	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	120%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	100	32.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	S8-1RE	LAS Sample ID:	L9157-65
Date Collected:	10-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-2
Date Extracted:	22-APR-97	Analytical Dilution:	1
Matrix:	Soil	Preparation Dilution:	0.99
Percent Moisture:	5.41	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	142%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<31.	31.	X

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	SB5-3-10D	LAS Sample ID:	L9157-67
Date Collected:	09-APR-97	Date Received:	10-APR-97
Date Analyzed:	24-APR-97	Analytical Batch ID:	042397-8015-L-3
Date Extracted:	22-APR-97	Analytical Dilution:	2
Matrix:	Soil	Preparation Dilution:	1.0
Percent Moisture:	9.85	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	141%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	800	66.	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Method Blank	LAS Sample ID:	47615MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	23-APR-97	Analytical Batch ID:	042397-8015-L-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
		Preparation Dilution:	0.99
Percent Moisture:	N/A	QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	128%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER (S)
Diesel Range Organics	TPH	<30.	30.	
Gasoline Range Organics		<30.	30.	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47615LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	23-APR-97	Analytical Batch ID:	042397-8015-L-1
Date Extracted:	22-APR-97	Analytical Dilution:	1
Percent Moisture:	N/A	Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47615

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	100%	25-162

CONSTITUENT	CAS NO.	RESULT mg/kg	PQL mg/kg	DATA QUALIFIER(S)
Diesel Range Organics	TPH	490	30.	



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

**NITRATE AND NITRITE-NITROGEN AND TOTAL
PETROLEUM HYDROCARBON**

LOG-IN NUMBER	<u>L9166</u>
QUOTATION NUMBER	<u>Q707146</u>
DOCUMENT FILE NUMBER	<u>0411171</u>

**MONITORING
WELL SAMPLES**

COPY



May 7, 1997

Ms. Susan M. Crowley
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

RE: Log-in No. **L9166**
 Quotation No. **Q707146**
 Document File No. **0411171**

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 11 April 1997. The temperature of the cooler upon receipt was 4°C. All sample containers coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Laura G. Akenhead at (702) 361-3955, ext 272. If you are unable to contact the client services representative, please call Mary B. Ford, Client Services Manager, at extension 326.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Laura G. Akenhead
Client Services Representative

cc: Client Services
 Document Control

CASE NARRATIVE INORGANIC NON-METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 11, 1997. The samples were logged in as L9166 and prepared and analyzed in batch 411-KM for:

- A. Method 300.0 Nitrate and Nitrite-Nitrogen

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Internal Quality Control

- All Internal Quality Control were within acceptable limits.
- The matrix spike recovery for Nitrate and Nitrite-Nitrogen are not reported. The sample concentration is considered significant (i.e., greater than four times the spiking level) relative to the amount spiked into the sample.

Shellee McGrath
Prepared By

April 25, 1997
Date

CASE NARRATIVE ORGANIC ANALYSES

General Introduction

The Case Narrative associated with the determination of organic analytes is separated into three (3) sections as follows:

SECTION 1

A brief word processed description of each method reported in this package. This is a general summary of the procedures used and quality control measures applied. It is not intended to include client-specific requirements. Results relating to initial calibration criteria and continuing calibration criteria are included in this section. This section will also describe any unusual events or important observations from the processing of the samples for each method. The initials of the reporting specialist compiling the Case Narrative with the date compiled will be at the end of this section.

SECTION 2

2. An *Exception Report* for each method printed from our data base that summarizes the results of all quality control (QC) measures. A separate *Exception Report* is included for each "QC Group" necessary for each method. At LAS, a QC Group is also called a "workgroup", or more descriptively, a "QC Batch". Each *Exception Report* includes:
 - a. A table listing all the samples in the QC Group by LAS Sample ID and Client Sample ID with the date analyzed and Analytical Batch.
 - b. Statement(s) relating to holding times for all samples in the QC Group.
 - c. Statement(s) relating to the Method Blank (MB) for all samples in the QC Group.
 - d. A list of all samples in the QC Group requiring reanalysis for dilution(s) or QC outliers.
 - e. A list of all samples in the QC Group that failed surrogate recovery criteria with the recovery obtained and the Acceptance Limits.
 - f. A list of all QC Samples that failed recovery criteria with the recovery obtained and the Acceptance Limits. The QC Samples are a laboratory control sample (LCS) and a matrix spike (MS)/matrix spike duplicate (MSD) pair. If insufficient sample exists for a MS/MSD pair, a laboratory control sample duplicate (LCSD) is included. Some methods call for a LCS/LCSD pair instead of a MS/MSD and some for MS/MSD and LCS/LCSD pairs.
 - g. A list of all samples in the QC Group that failed internal standard criteria with the integrated areas of the internal standard(s) and their retention times. Note: Applicable to gas chromatography/mass spectrometry GC/MS methods only.

SECTION 3

A table describing all LAS default data qualifiers (flags) used to qualify the data reported on the result forms. Client-specific qualifiers may augment or replace these LAS default qualifiers.

Method 8015M Extractable Petroleum Hydrocarbons

This method quantifies extractable petroleum hydrocarbons using gas chromatography (GC) coupled with a flame ionization detector (FID). Target analytes are ranges of hydrocarbons not specific petroleum products. Examples are of target analytes are product range organics, like Diesel Range Organics or carbon number range organics, like C₁₂ to C₂₄ Range Organics. All FID-active substances, or practically speaking, all organic species, eluting within the specified range contribute to the reported value. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then concentrated to a final volume. The hydrocarbon range organics in the extract are quantified using GC/FID. To establish the retention time range for the specific target analyte, n-alkanes are analyzed to define the chromatographic range of interest. A "common baseline" is then drawn between the n-alkane markers. All peaks eluting within the established retention time range are integrated and the areas summed. Products whose constituents closely match the target range are used to generate a five-point calibration. For example diesel fuel standards are used to calibrate for Diesel Range Organics or C₁₂ to C₂₄. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted which contains the same product used for calibration in a matrix which does not interfere with the analytical procedure. Recoveries of the target analyte in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared each time samples are extracted when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked products can be used to estimate the accuracy and precision of the measurements in a real client matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with a surrogate compound, n-octacosane, before extraction. Recoveries of the surrogate are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

LAS, Laboratories, Inc.

Log-in No. L9166
Quotation No. Q707146
Document File No. 0411171
Page 4

Results relating to initial and continuing calibration criteria are as follows:

All initial calibration criteria were met.

All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Lydia M. Coleman
Prepared By

May 7, 1997
Date

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
EXCEPTION REPORT
QC GROUP: 8015M - TPH_47391

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
47391LCS	Lab Ctrl Sample	15-APR-97	041597-8015-D-1
47391LCSDUP	Lab Ctrl Sample Dup	15-APR-97	041597-8015-D-1
47391MB	Method Blank	15-APR-97	041597-8015-D-1
L9145-2	M97	15-APR-97	041597-8015-D-1
L9166-1	M10	15-APR-97	041597-8015-D-1
L9166-2	M21	15-APR-97	041597-8015-D-1

HOLDING TIMES

All holding times were met for samples in this QC group.
 The extraction holding times were met.
 The analytical holding times were met.

METHOD BLANK

No target analytes were detected in the method blank(s).

SAMPLE RESULTS

No samples in the QC group required reanalysis.
 No samples in the QC group required a dilution.

SURROGATE RECOVERIES

All surrogate recoveries met criteria for this QC group.

QC SAMPLE RESULTS

All LCS samples met criteria for this QC group.

The following LCSD samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	RPD	Limits
47391LCSDUP	Lab Ctrl Sample Dup	Diesel Range Organics	97	32*	61-143 20

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.

DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. [<i>pesticide/PCB analyses only</i>]
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to <u>surrogates</u> being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	<i>Estimated value</i> -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	<i>For CLP Reporting Only</i> – The percent difference between the concentrations detected on both GC columns was greater than 25 percent [<i>pesticide/PCB analyses only</i>].
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "as received" basis. A value in the % moisture cell indicates that data are reported based on a "dry weight" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a ¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b ¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC Summary Form.

SAMPLE LOGIN AND CHAIN OF CUSTODY

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 14 1997, 08:44 am

(NOAH)

Login Number: L9166
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9166-1 Temp 4, TPH=Diesel Location: 124 Water 1 S 8015M - TPH	M10	10-APR-97	11-APR-97	11-MAY-9
		Hold:17-APR-97		
L9166-2 Temp 4, TPH=Diesel Location: 124 Water 1 S 8015M - TPH	M21	10-APR-97	11-APR-97	11-MAY-9
		Hold:17-APR-97		
* L9166-3 Temp 4; Location: RFG02-37B Water 1 S 300.0 NO3+NO2 AS N	M17	10-APR-97	11-APR-97	11-MAY-9
		Hold:08-MAY-97		
* L9166-4 Temp 4; Location: RFG02-37B Water 1 S 300.0 NO3+NO2 AS N	M89	10-APR-97	11-APR-97	11-MAY-9
		Hold:08-MAY-97		
* L9166-5 Temp 4; Location: RFG02-37B Water 1 S 300.0 NO3+NO2 AS N	M25	10-APR-97	11-APR-97	11-MAY-9
		Hold:08-MAY-97		
L9166-6 Location: Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S TROYER	REPORT TYPE	11-APR-97	11-APR-97	11-MAY-9

* CHANGES 300.0 NITRATE TO 300.0 NO₃+NO₂
 (preserved samples)

Signature: R. Callan
 Date: 4-14-97

C411171

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 01:20 pm

Login Number: L9166
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9166-1 Temp 4, TPH=Diesel Location: RFG02-37B Water 1 S 8015M - TPH	M10	10-APR-97	11-APR-97	11-MAY-97
			Hold:17-APR-97	
L9166-2 Temp 4, TPH=Diesel Location: RFG02-37B Water 1 S 8015M - TPH	M21	10-APR-97	11-APR-97	11-MAY-97
			Hold:17-APR-97	
L9166-3 Temp 4; Location: RFG02-37B Water 1 S 300.0 NITRATE	M17	10-APR-97	11-APR-97	11-MAY-97
			Hold:12-APR-97	
L9166-4 Temp 4; Location: RFG02-37B Water 1 S 300.0 NITRATE	M89	10-APR-97	11-APR-97	11-MAY-97
			Hold:12-APR-97	
L9166-5 Temp 4; Location: RFG02-37B Water 1 S 300.0 NITRATE	M25	10-APR-97	11-APR-97	11-MAY-97
			Hold:12-APR-97	
L9166-6 Location: Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S TROYER	REPORT TYPE	11-APR-97	11-APR-97	11-MAY-97

Signature: *Gail Ackerman*
 Date: 4/11/97

041171

19116

CHAIN OF CUSTODY RECORD



Client/Project Name KMCC		Project Location Henderson NV		Analysis Requested						
Project Number 4020004-200		Field Logbook No								
Sampler (Print Name) / Affiliation DJ Boehls ENSR		Chain of Custody Tape No								
Signature DJ Boehls		Send Results/Report to								
Field Sample No. / Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat)	Sample Type (Liquid, Sludge, Etc)	Preservative	Field Filtered	Lab ID	Remarks
M10	4/10/97	1417	X		Ambe Br	liquid	ice	X		
M21	4/10/97	1723	X			water		X		
M17	4/10/97	1816	X		plastic	water	H ₂ O ₂			
M29	4/10/97	1855	X		plastic	water	H ₂ O ₂			
M25	4/10/97	1932	X		plastic	water	H ₂ O ₂			
Relinquished by: (Print Name) DJ Boehls		Date 4/11/96	Received by: (Print Name)		Date		Time		Analytical Laboratory (Destination)	
Signature DJ Boehls		Time 0838	Signature		Date		Time			
Relinquished by: (Print Name)		Date	Received by: (Print Name)		Date		Time			
Signature		Time	Signature		Date		Time			
Relinquished by: (Print Name)		Date	Received by: (Print Name) Gail Ackerman		Date 4/11/97		Time			
Signature		Time	Signature Gail Ackerman		Date		Time			

C411171



CHAIN OF CUSTODY RECORD

Client/Project Name: **KMCC**
 Project Location: **Henderson, NV**
 Project Number: **4020004-200**
 Field Logbook No.: **D**
 Sampler: (Print Name) / Affiliation: **DJ Boehls ENSR**
 Signature: **DJ Boehls**
 Chain of Custody Tape No.: **2005 M-D**
 Send Results/Report to: **Nitrate**

Field Sample No. / Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filled	Lab ID	Remarks
M10	4/10/17	1417	X		Amber Btl	liquid	ice	X		
M21	4/10/17	1722	X			water		X		
M17	4/10/17	1816	X		plastic	water	H ₂ SO ₄	X		resid
M29	4/10/17	1855	X		plastic	water	H ₂ SO ₄	X		
M35	4/10/17	1930	X		plastic	water	H ₂ SO ₄	X		

Relinquished by: (Print Name) **DJ Boehls**
 Signature: **DJ Boehls**
 Date: **4/11/17**
 Time: **0828**

Received by: (Print Name) _____
 Signature: _____
 Date: _____
 Time: _____

Relinquished by: (Print Name) _____
 Signature: _____
 Date: _____
 Time: _____

Received by: (Print Name) **Carl Ackerman**
 Signature: **Carl Ackerman**
 Date: **4/11/17**
 Time: _____

Analytical Laboratory (Destination): _____

0411171



Sample Login
Login Review Checklist

Lot Number L9166

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

<u>SAMPLE SUMMARY REPORT</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	<u>X</u>	___	___	_____
2. Are all samples present?	<u>+</u>	___	___	_____
3. Are all matrices indicated correctly?	<u>+</u>	___	___	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<u>+</u>	___	___	_____
5. Are all analyses logged in for the correct container?	<u>+</u>	___	___	_____
6. Are samples logged in according to LAS batching procedures?	<u>+</u>	___	___	_____

<u>LOGIN CHAIN OF CUSTODY</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	<u>+</u>	___	<u>+</u>	_____
2. Have all appropriate comments been indicated in the comment section?	<u>+</u>	___	<u>+</u>	_____

<u>SAMPLE RECEIVING CHECKLIST</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	___	___	<u>+</u>	_____

Hail Ackerman 4/11/97
primary review signature date

[Signature] 4/11/97
secondary review signature date

0411171

LAS LABORATORIES, INC.

Sample Receiving Checklist

Client Name: Levics

Job No: 29166

Cooler ID: 29166

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 4°C
temperature of temp. blank upon receipt:

yes no n/a *Comments/Discrepancies

- custody seals present
- custody seals intact
- chain of custody present
- blue ice (or equiv.) present
- blue ice (or equiv.) frozen
- rad survey completed

SAMPLE CONDITION UPON RECEIPT

yes no n/a *Comments/Discrepancies

- all bottles labeled
- bottle custody seal present
- bottle custody seal intact
- samples intact
- proper container used for sample
- sample volume sufficient for analysis
- proper pres. indicated on the COC
- VOA's contain headspace
- are samples bi-phasic (if so, indicate sample ID's):

MISCELLANEOUS ITEMS

yes no n/a *Comments/Discrepancies

- samples with short holding times
- samples to subcontract

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Stacy Delaney 4/11/97

* Client's signature upon receipt:

sent to the client (date/initials):

Notes: contact the appropriate CSR of any discrepancies immediately upon receipt

for return info fax facsimile to the appropriate CSB (702) 261-8146

041171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
M10 ✓	L9166-1		Water ✓	8015M - TPH ✓
M17 ✓	L9166-3		Water ✓	300.0 NITRATE
M21 ✓	L9166-2		Water ✓	8015M - TPH ✓
M25 ✓	L9166-5		Water ✓	300.0 NITRATE ✓
M89 ✓	L9166-4		Water ✓	300.0 NITRATE ✓
REPORT TYPE ✓	L9166-6		Water	GC2 ✓
	L9166-6 ✓		Water ✓	INORG TYPE 2 R
	L9166-6		Water	TROYER ✓

C411171

SAMPLE RESULTS

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: M17

Date Collected: 10-APR-97

Matrix: Water

Login Number: L9166

Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
NITRATE-NITRITE-NITROGEN	300.0	47443	509	0.3	2.	100		mg/L	15-APR-97	L9166-3

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: M89
Date Collected: 10-APR-97
Matrix: Water

Login Number: L9166
Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
NITRATE-NITRITE-NITROGEN	300.0	47443	1130	0.3	2.	100		mg/L	15-APR-97	L9166-4

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: M25
Date Collected: 10-APR-97
Matrix: Water

Login Number: L9166
Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
NITRATE-NITRITE-NITROGEN	300.0	47443	624	0.3	2.	100		mg/L	15-APR-97	L9166-5

AS Laboratories, Inc.

PHOD BLANK DATA SUMMARY

Lin/SDG Number: L9166

alyte	Batch ID	Date Analyzed	LAB ID	MB Result	MB	RDU	Units	Data Qual
rate-Nitrogen	47443	15-APR-97	47443MB	<0.003	0.003	0.02	mg/L	U

NAME: genlonqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

DUPLICATE DATA SUMMARY

Pin/SDG Number: L9166

Analyte	Batch ID	Date Analyzed	Client ID	IAL ID	Sample ID	EMP Result	DUP Result	Unit	RPD	Data Qual	RPD Limit
rate-Nitrite-Nitrogen	47443	15-APR-97	M17	L9166-3	47443DUP	509.	509.	mg/L	0		20

TEST NAME: genlonqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

AS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Origin/SDG Number: L9166

Analyte	Batch ID	Date Analyzed	Client ID	DNV ID	Sample ID	MS Result	EMP Result	Known Value	Units	↑ Rec	Data Qual	QC Limits
Nitrate-Nitrite-Nitrogen	47443	15-APR-97	M17	L9166-3	47443MS	536	509	22.0	mg/L	0.00	a	75-125

NAME: genlong2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.

LAS Laboratories, Inc.

LCS DATA SUMMARY

Login/SDG Number: L9166

Analyte	Patch ID	Date Analyzed	Lab ID	ICS Result	Known Value	Units	Req	Data Qual	QC Limits
Nitrate-Nitrogen	47443	15-APR-97	47443LCS	12.6	12.5	mg/L	101		80-120
Nitrite-Nitrogen	47443	15-APR-97	47443LCS	15.2	15.0	mg/L	102		80-120

PT NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

EPA METHOD 8015M (Total Petroleum Hydrocarbon)

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH) 8015M - TPH

Client Sample ID:	M10	LAS Sample ID:	L9166-1
Date Collected:	10-APR-97	Date Received:	11-APR-97
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	70%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<1.0	1.0	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	M21	LAS Sample ID:	L9166-2
Date Collected:	10-APR-97	Date Received:	11-APR-97
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	59%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics		TPH	<1.0	1.0

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Method Blank	LAS Sample ID:	47391MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	73%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<1.0	1.0	

LAS LABORATORIES

WIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47391LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	130%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER (S)
Diesel Range Organics	TPH	20.	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	47391LCS DUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	102%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	15.	1.0	

LAS LABORATORIES

IS DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	47391LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	130%	26-152

Constituent	Spike Added mg/L	LCS Concentration mg/L	LCS & Recovery	QC Limits
Diesel Range Organics	15.1	20.2	134	61-143

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	47391LCSDUP
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	15-APR-97	Analytical Batch ID:	041597-8015-D-1
Date Extracted:	11-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47391

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	102%	26-152

Constituent	Spike Added mg/L	LCS DUP Concentration mg/L	Recovery	RPD	QC Limits	
					RPD	Recovery
Diesel Range Organics	15.1	14.6	97	32*	20	61-143

RUN LOGS/EXTRACTION SHEETS

HA = 0
ENG

LAS LABORATORIES


TRACKING SHEET DATA REPORT (bs09)

EXTRACTION SHEET FOR: 8015M - TPH Extraction

WORKSHEET NUMBER: 8015M - TPH 47391

LAL #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/CREATED	VOLUNT EXTRACT	WATER SAMPLE PH	SURR ML	MS ML	MS BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9142-10		LCH00032	07-APR-97	09-APR-97	4-11-97 1000ml	1	2.0		5.0ml	2.4ml
L9142-26		LCH00034	08-APR-97	09-APR-97	1000ml	1				
L9145-2		897	09-APR-97	09-APR-97	1000ml	7				
L9155-10		LCH00143	09-APR-97	10-APR-97	1000ml	1				
L9155-26		LCH00144	09-APR-97	10-APR-97	1000ml	1				
L9158-77		COMPOSITE *	09-APR-97	10-APR-97	1000ml	1				
L9166-1		M10	10-APR-97	11-APR-97	1000ml	7				
L9166-2		M21	10-APR-97	11-APR-97	1000ml	7				
77391MB	MB	Method Blank		11-APR-97	1000ml	7				
77391LCS	LCS	Lab Ctrl Sample		11-APR-97	1000ml	7		1.0		
77391LCSUP	LCSU	Lab Ctrl Sample Dup		11-APR-97	1000ml	7				
SPHRET047391	SPHRET047391	Spike-Test-Complete		11-APR-97	1000ml	7				US 04-11-97

Diesel spike matrix

SIGNED: 
Spike Witness: Susan Markin

EXTRACTION METHOD: Sp. Funnel
DATE STARTED: 4-11-97
DATE COMPLETED: 4-11-97

QC BATCH# : 8015M - TPH 47391
SURR ID # : 859-85-2
MS ID # : 0859-11-3
LOT #'S :
CONC: 2.2ug/ml MECL2 : 36240
CONC: 45.086ug/ml ACETONE: N/A
MAZSOA: K39636

REVIEWED BY: Walter L. Connors
DATE: 4/11/97

NARRATIVE: L9158-77 is a composite of 8 samples. 125ml each of the 8 samples were composited to form the one liter sample extracted as L9158-77, at the client's request. vks 04-11-97

Analyst	Date and Time	Sample Name	Description/ Soluton	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed
IA	4/8/97 10:36	CH2CL2		1	80151040897-D104089701.d01	80151040897-D.MET	NO	
IA	4/8/97 11:21	RT 0608 36 1		1	80151040897-D104089701.d02	80151040897-D.MET	OK	
IA	4/8/97 12:06	1D 0990 04 1		1	80151040897-D104089701.d03	80151040897-D.MET	OK	
IA	4/8/97 12:52	3D 0990 04 3		1	80151040897-D104089701.d04	80151040897-D.MET	OK	
IA	4/8/97 13:37	5D 0990 04 5		1	80151040897-D104089701.d05	80151040897-D.MET	OK	
IA	4/8/97 14:22	D QCCS 0990 08 1		1	80151040897-D104089701.d06	80151040897-D.MET	OK	
IA	4/8/97 15:10	3D 0990 04 3		1	80151040897-D104089701.d07	80151040897-D.MET	OK	
IA	4/8/97 16:06	CH2CL2		1	80151040897-D104089701.d08	80151040897-D.MET	NO	
IA	4/8/97 16:51	47080MB		0.1667	80151040897-D104089701.d09	80151040897-D.MET	OK	
IA	4/8/97 17:36	47090LCS		0.1667	80151040897-D104089701.d10	80151040897-D.MET	OK	
IA	4/8/97 18:21	47080MS		0.1651	80151040897-D104089701.d11	80151040897-D.MET	OK	
IA	4/8/97 19:06	47080MSD		0.1887	80151040897-D104089701.d12	80151040897-D.MET	OK	
IA	4/8/97 19:51	L9070 13		0.1837	80151040897-D104089701.d13	80151040897-D.MET	OK	
IA	4/8/97 20:37	L9070 16		0.2092	80151040897-D104089701.d14	80151040897-D.MET	OK	
IA	4/8/97 21:22	L9070 18		0.1787	80151040897-D104089701.d15	80151040897-D.MET	OK	
IA	4/8/97 22:07	L9070 19		0.1939	80151040897-D104089701.d16	80151040897-D.MET	OK	
IA	4/8/97 22:52	L9070 21		0.189	80151040897-D104089701.d17	80151040897-D.MET	OK	
IA	4/8/97 23:37	L9070 2		0.1872	80151040897-D104089701.d18	80151040897-D.MET	OK	
IA	4/8/97 0:22	L9070 4		0.1822	80151040897-D104089701.d19	80151040897-D.MET	OK	
IA	4/8/97 1:07	3D 0990-04 3		1	80151040897-D104089701.d20	80151040897-D.MET	OK	
IA	4/8/97 1:52	3D 0990-04 3		1	80151040897-D104089701.d21	80151040897-D.MET	NO	
IA	4/8/97 1:09	CH2CL2		1	80151040897-D104089701.d22	80151040897-D.MET	NO	
IA	4/8/97 16:54	L9105 1		0.005	80151040897-D104089701.d23	80151040897-D.MET	OK	
IA	4/8/97 17:40	L9105 2 (1R)		0.006	80151040897-D104089701.d24	80151040897-D.MET	OK	
IA	4/8/97 18:24	L9105 3 (1R)		0.006	80151040897-D104089701.d25	80151040897-D.MET	OK	
IA	4/8/97 19:09	L9105 4 (1R)		0.005	80151040897-D104089701.d26	80151040897-D.MET	OK	
IA	4/8/97 19:54	L9105 5		0.005	80151040897-D104089701.d27	80151040897-D.MET	OK	
IA	4/8/97 20:39	L9105 6		0.005	80151040897-D104089701.d28	80151040897-D.MET	OK	
IA	4/8/97 21:24	L9105 7		0.008	80151040897-D104089701.d29	80151040897-D.MET	OK	
IA	4/11/97 8:43	3D 0990-04 3		1	80151040897-D104089701.d30	80151040897-D.MET	NO	
IA	4/11/97 9:34	3D 0990-04 3		1	80151040897-D104089701.d31	80151040897-D.MET	OK	
IA	4/11/97 11:44	CH2CL2		1	80151040897-D104089701.d32	80151040897-D.MET	NO	
IA	4/11/97 12:29	47258MB		0.1667	80151040897-D104089701.d33	80151040897-D.MET	OK	
IA	4/11/97 13:14	47258LCS		0.1667	80151040897-D104089701.d34	80151040897-D.MET	OK	
IA	4/11/97 13:59	47258MS		0.1662	80151040897-D104089701.d35	80151040897-D.MET	OK	
IA	4/11/97 14:44	47258MSD		0.1653	80151040897-D104089701.d36	80151040897-D.MET	OK	
IA	4/11/97 15:29	L9094 52		0.1647	80151040897-D104089701.d37	80151040897-D.MET	OK	
IA	4/11/97 16:14	L9094 53		0.165	80151040897-D104089701.d38	80151040897-D.MET	OK	
IA	4/11/97 16:59	L9094 54		0.1667	80151040897-D104089701.d39	80151040897-D.MET	OK	
IA	4/11/97 17:44	L9094 55		0.1663	80151040897-D104089701.d40	80151040897-D.MET	OK	
IA	4/11/97 18:29	L9094 56		0.1646	80151040897-D104089701.d41	80151040897-D.MET	OK	
IA	4/11/97 19:14	L9094 57		0.1666	80151040897-D104089701.d42	80151040897-D.MET	OK	
IA	4/11/97 19:59	L9094 58		0.1689	80151040897-D104089701.d43	80151040897-D.MET	OK	
IA	4/11/97 20:44	L9094 60		1	80151040897-D104089701.d44	80151040897-D.MET	OK	
IA	4/11/97 21:29	3D 0990 04 3		1	80151040897-D104089701.d45	80151040897-D.MET	NO	
IA	4/11/97 22:14	3D 0990 04 3		1	80151040897-D104089701.d46	80151040897-D.MET	OK	
IA	4/11/97 22:59	L9094 61		0.1667	80151040897-D104089701.d47	80151040897-D.MET	OK	
IA	4/11/97 23:44	L9094 62		0.1612	80151040897-D104089701.d48	80151040897-D.MET	OK	
IA	4/12/97 0:29	L9094 63		0.1664	80151040897-D104089701.d49	80151040897-D.MET	OK	

Analyst	Date end Time	Sample Name	Description/ Solution	Matrix/ DH	Raw Data File	Method File	Reported	Re-Analyzed
IA	4/12/97 1:13	L9094 64		0.1669	80151040897-D104089701.450	80151040897-D.MET	OK	
IA	4/12/97 1:58	L9094 65		0.1669	80151040897-D104089701.451	80151040897-D.MET	OK	
IA	4/12/97 2:43	L9094 66		0.1666	80151040897-D104089701.452	80151040897-D.MET	OK	
IA	4/12/97 3:27	L9094 67		0.1663	80151040897-D104089701.453	80151040897-D.MET	OK	
IA	4/12/97 4:12	L9094 68		0.1664	80151040897-D104089701.454	80151040897-D.MET	OK	
IA	4/12/97 4:57	3D 0990-04-3		1	80151040897-D104089701.455	80151040897-D.MET	OK	
IA	4/12/97 5:42	3D 0990-04-3		1	80151040897-D104089701.456	80151040897-D.MET	NO	
IA	4/12/97 6:26	CH2CL2		1	80151040897-D104089701.457	80151040897-D.MET	NO	
IA	4/12/97 7:12	L9105 8		1	80151040897-D104089701.458	80151040897-D.MET	OK	
IA	4/12/97 7:56	L9105-9 (1R)		1	80151040897-D104089701.459	80151040897-D.MET	OK	
IA	4/12/97 8:41	L9105 10 (12R)		1	80151040897-D104089701.460	80151040897-D.MET	OK	
IA	4/12/97 9:26	L9105-11 (3R)		1	80151040897-D104089701.461	80151040897-D.MET	OK	
IA	4/12/97 10:11	L9105-12		1	80151040897-D104089701.462	80151040897-D.MET	OK	
IA	4/12/97 10:56	L9105-13		1	80151040897-D104089701.463	80151040897-D.MET	OK	
IA	4/12/97 11:41	L9105-14		1	80151040897-D104089701.464	80151040897-D.MET	OK	
IA	4/12/97 12:26	3D 0990-04-3		1	80151040897-D104089701.465	80151040897-D.MET	OK	
IA	4/14/97 13:04	3D 0990-04-3		1	80151040897-D104089701.466	80151040897-D.MET	OK	
IA	4/14/97 14:18	CH2CL2		1	80151040897-D104089701.467	80151040897-D.MET	OK	
IA	4/14/97 15:04	47353MB		0.1665	80151040897-D104089701.468	80151040897-D.MET	OK	
IA	4/14/97 15:49	47353LCS		0.1663	80151040897-D104089701.469	80151040897-D.MET	OK	
IA	4/14/97 16:34	47353MS		0.1663	80151040897-D104089701.470	80151040897-D.MET	OK	
IA	4/14/97 17:18	47353MSD		0.1671	80151040897-D104089701.471	80151040897-D.MET	OK	
IA	4/14/97 18:03	L9108 28		0.1807	80151040897-D104089701.472	80151040897-D.MET	OK	
IA	4/14/97 18:48	L9108 32		0.1814	80151040897-D104089701.473	80151040897-D.MET	OK	
IA	4/14/97 19:33	L9108 43		0.1693	80151040897-D104089701.474	80151040897-D.MET	OK	
IA	4/14/97 20:18	L9108 46		0.1726	80151040897-D104089701.475	80151040897-D.MET	OK	
IA	4/14/97 21:04	L9108 71		0.1706	80151040897-D104089701.476	80151040897-D.MET	OK	
IA	4/14/97 21:48	L9108 75		0.2065	80151040897-D104089701.477	80151040897-D.MET	OK	
IA	4/14/97 22:34	L9108 78		0.1686	80151040897-D104089701.478	80151040897-D.MET	OK	
IA	4/14/97 23:19	L9108 81		0.1704	80151040897-D104089701.479	80151040897-D.MET	OK	
IA	4/15/97 0:04	3D 0990-04-3		1	80151040897-D104089701.480	80151040897-D.MET	OK	
IA	4/15/97 0:49	3D 0990-04-3		1	80151040897-D104089701.481	80151040897-D.MET	NO	
IA	4/15/97 1:34	L9108 86		0.188	80151040897-D104089701.482	80151040897-D.MET	OK	
IA	4/15/97 2:19	L9108 95		0.27	80151040897-D104089701.483	80151040897-D.MET	OK	
IA	4/15/97 3:03	L9108 92		0.1717	80151040897-D104089701.484	80151040897-D.MET	OK	
IA	4/15/97 3:48	L9128-10		0.1994	80151040897-D104089701.485	80151040897-D.MET	OK	
IA	4/15/97 4:33	L9128-12		0.2189	80151040897-D104089701.486	80151040897-D.MET	OK	
IA	4/15/97 7:35	L9128-4		1	80151040897-D104089701.487	80151040897-D.MET	NO	NEED 1:50
IA	4/15/97 8:20	L9128-8		1	80151040897-D104089701.488	80151040897-D.MET	NO	NEED 1:25
IA	4/15/97 9:05	CH2CL2		1	80151040897-D104089701.489	80151040897-D.MET	NO	
IA	4/15/97 9:50	L9128-4 1:50		9.033	80151040897-D104089701.490	80151040897-D.MET	OK	
IA	4/15/97 10:35	L9128-8 1:25		5.6676	80151040897-D104089701.491	80151040897-D.MET	OK	
IA	4/15/97 11:20	3D 0990-04-3		1	80151040897-D104089701.492	80151040897-D.MET	OK	

Analyst	Date	Time	Sample Name	Description/ Soluton	Matrix/ Dil.	Raw L... File	Method File	Reported	ReAnalyzed
DA	4/15/97	12:06	3D 0990 04.3		1	80151041597-D104159701.d01	80151040897-D.MET	OK	
DA	4/15/97	12:52	CH2CL2		1	80151041597-D104159701.d02	80151040897-D.MET	NO	
DA	4/15/97	13:37	47391MB		0.005	80151041597-D104159701.d03	80151040897-D.MET	OK	
DA	4/15/97	14:22	47391LCS		0.005	80151041597-D104159701.d04	80151040897-D.MET	OK	
DA	4/15/97	15:07	47391LCSOUP		0.005	80151041597-D104159701.d05	80151040897-D.MET	OK	
DA	4/15/97	15:52	L9142-10		0.005	80151041597-D104159701.d06	80151040897-D.MET	OK	
DA	4/15/97	16:37	L9142-26		0.005	80151041597-D104159701.d07	80151040897-D.MET	OK	
DA	4/15/97	17:22	L9145-2		0.005	80151041597-D104159701.d08	80151040897-D.MET	OK	
DA	4/15/97	18:07	L9155-10		0.005	80151041597-D104159701.d09	80151040897-D.MET	OK	
DA	4/15/97	18:52	L9155-26		0.005	80151041597-D104159701.d10	80151040897-D.MET	OK	
DA	4/15/97	19:37	L9158-77		0.005	80151041597-D104159701.d11	80151040897-D.MET	OK	
DA	4/15/97	20:22	L9166-1		0.005	80151041597-D104159701.d12	80151040897-D.MET	OK	
DA	4/15/97	21:07	L9166-2		0.005	80151041597-D104159701.d13	80151040897-D.MET	OK	
DA	4/15/97	21:52	3D 0990 04.3		1	80151041597-D104159701.d14	80151040897-D.MET	OK	
DA	4/15/97	22:37	3D 0990 04.3		1	80151041597-D104159701.d15	80151040897-D.MET	NO	
DA	4/15/97	23:22	CH2CL2		1	80151041597-D104159701.d16	80151040897-D.MET	OK	
DA	4/16/97	0:07	47414MB		0.1667	80151041597-D104159701.d17	80151040897-D.MET	NO	
DA	4/16/97	0:52	47414LCS		0.1667	80151041597-D104159701.d18	80151040897-D.MET	OK	
DA	4/16/97	1:37	47414MS		0.1661	80151041597-D104159701.d19	80151040897-D.MET	OK	
DA	4/16/97	2:22	47414MSD		0.1662	80151041597-D104159701.d20	80151040897-D.MET	OK	
DA	4/16/97	3:07	L9111-38		0.1667	80151041597-D104159701.d21	80151040897-D.MET	OK	
DA	4/16/97	3:51	L9111-36		0.1663	80151041597-D104159701.d22	80151040897-D.MET	OK	
DA	4/16/97	4:36	L9111-37		0.1664	80151041597-D104159701.d23	80151040897-D.MET	OK	
DA	4/16/97	5:22	L9111-39		0.1669	80151041597-D104159701.d24	80151040897-D.MET	OK	
DA	4/16/97	6:06	L9111-40		0.1656	80151041597-D104159701.d25	80151040897-D.MET	OK	
DA	4/16/97	6:52	L9111-41		0.1671	80151041597-D104159701.d26	80151040897-D.MET	OK	
DA	4/16/97	7:36	L9111-42		0.1654	80151041597-D104159701.d27	80151040897-D.MET	OK	
DA	4/16/97	8:21	L9111-44		0.1655	80151041597-D104159701.d28	80151040897-D.MET	OK	
DA	4/16/97	9:07	3D 0990 04.3		1	80151041597-D104159701.d29	80151040897-D.MET	OK	
DA	4/16/97	9:52	L9111-45		0.1669	80151041597-D104159701.d30	80151040897-D.MET	OK	
DA	4/16/97	10:37	L9111-46		0.1661	80151041597-D104159701.d31	80151040897-D.MET	OK	
DA	4/16/97	11:22	L9111-47		0.1657	80151041597-D104159701.d32	80151040897-D.MET	OK	
DA	4/16/97	12:07	L9111-48		0.1622	80151041597-D104159701.d33	80151040897-D.MET	OK	
DA	4/16/97	12:52	L9111-48		0.1643	80151041597-D104159701.d34	80151040897-D.MET	OK	
DA	4/16/97	13:37	L9111-50		0.1671	80151041597-D104159701.d35	80151040897-D.MET	OK	
DA	4/16/97	14:21	L9111-51		0.1655	80151041597-D104159701.d36	80151040897-D.MET	OK	
DA	4/16/97	15:07	L9111-35		0.1667	80151041597-D104159701.d37	80151040897-D.MET	OK	
DA	4/16/97	15:52	L9111-59		0.1783	80151041597-D104159701.d38	80151040897-D.MET	OK	
DA	4/16/97	16:37	3D 0990 04.3		1	80151041597-D104159701.d39	80151040897-D.MET	OK	
DA	4/17/97	8:41	3D 0990 04.3		1	80151041597-D104159701.d40	80151040897-D.MET	OK	
DA	4/17/97	10:11	3D 0990 04.3		1	80151041597-D104159701.d41	80151040897-D.MET	NO	
DA	4/17/97	10:56	CH2CL2		1	80151041597-D104159701.d42	80151040897-D.MET	NO	
DA	4/17/97	11:42	47415MB		0.1667	80151041597-D104159701.d43	80151040897-D.MET	OK	
DA	4/17/97	12:26	47415LCS		0.1667	80151041597-D104159701.d44	80151040897-D.MET	OK	
DA	4/17/97	13:12	47415MS		0.1664	80151041597-D104159701.d45	80151040897-D.MET	OK	
DA	4/17/97	13:57	47415MSD		0.1671	80151041597-D104159701.d46	80151040897-D.MET	OK	
DA	4/17/97	14:42	L9112-9		0.1639	80151041597-D104159701.d47	80151040897-D.MET	OK	
DA	4/17/97	15:27	L9112-18		0.1662	80151041597-D104159701.d48	80151040897-D.MET	OK	
DA	4/17/97	16:12	L9112-3		0.1661	80151041597-D104159701.d49	80151040897-D.MET	OK	



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

**CONDUCTIVITY, pH, TOTAL DISSOLVED SOLIDS,
NITRATE & NITRITE-NITROGEN, METALS,
TOTAL PETROLEUM HYDROCARBON ORGANICS**

SAMPLES
ER 1-4
Equip RILSATES

LOG-IN NUMBER	<u>L9170</u>
QUOTATION NUMBER	<u>Q707146</u>
DOCUMENT FILE NUMBER	<u>0411171A</u>

COPY



May 7, 1997

Ms. Susan M. Crowley
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

RE: Log-in No. L9170
Quotation No. Q707146
Document File No. 0411171A

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 11 April 1997.

The temperature of the cooler upon receipt was 15°C. All sample containers did not coincide with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Laura G. Akenhead at (702) 361-3955, ext 272. If you are unable to contact the client services representative, please call Mary B. Ford, Client Services Manager, at extension 326.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Laura G. Akenhead
Client Services Representative

cc: Client Services
Document Control

CASE NARRATIVE INORGANIC NON METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 11, 1997. The samples were logged in as L9170 and prepared and analyzed in batch 411-KM for:

- A. Method 120.1 Conductivity
- B. Method 150.1 pH
- C. Method 300.0 Nitrate & Nitrite-Nitrogen
- D. Method 160.1 Total Dissolved Solids

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Internal Quality Control

- All Internal Quality Control were within acceptable limits.
- The matrix spike recovery for Nitrate & Nitrite-Nitrogen is not reported. The sample concentration is considered significant (i.e., greater than four times the spiking level) relative to the amount spiked into the sample. Therefore, the recovery is flagged with an "a".

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
WATERS**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on April 11, 1997. The samples were logged in as L9170 and were prepared and analyzed in batch 409 km1 for total metals. The samples were analyzed by Method 6010 ICP Trace and Method 7470 Mercury. (SDG #L9145W)

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception: The matrix spike recovery for lead was outside of acceptance limits (126%). The recovery based on the LCS (102%) supports that the analytical system was operating within control limits.

Shellee McGrath
Prepared By

May 7, 1997
Date

**CASE NARRATIVE
ORGANIC ANALYSES**

Analytical Method 8015M Total Petroleum Hydrocarbons (TPH)

Analytical Batch 040797-8015-L-5,6,7

The associated samples were analyzed in three analytical batches. The samples were extracted within holding time on April 15, 1997 and analyzed within holding time on April 16 and 17, 1997. All initial and continuing calibrations met criteria. The recovery of surrogate n-Octacosane was within QC limits. Target compounds were not detected in the method blank (47451MB). A laboratory control sample (47451LCS-1) and laboratory control sample duplicate (47451LCSDUP-1) were extracted and analyzed in place of a matrix spike (MS) and matrix spike duplicate (MSD). The recovery of Diesel Range Organics was within QC limits in the LCS-1 and LCSDUP-1. The relative percent difference (RPD) between the LCS-1 and LCSDUP-1 recoveries was within QC limits. The recovery of JP5 Range Organics was within QC limits in the LCS-2 and LCSDUP-2. The RPD between the LCS-2 and LCSDUP-2 recoveries was within QC limits.

Lydia M. Coleman
Prepared By

April 25, 1997
Date

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.

DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. <i>[pesticide/PCB analyses only]</i>
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to <u>surrogates</u> being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	<i>Estimated value</i> – (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	<i>For CLP Reporting Only</i> – The percent difference between the concentrations detected on both GC columns was greater than 25 percent <i>[pesticide/PCB analyses only]</i> .
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "as received" basis. A value in the % moisture cell indicates that data are reported based on a "dry weight" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a ¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b ¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC Summary Form.

**SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY**

L9170

REVISION
INORG.

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (1n01)
Apr 14 1997, 08:45 am

Login Number: L9170
Account: 171 Kerr-McGee * Henderson, NV
Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9170-1 Temp 15; Location: RFG02-37B Water 1 S 120.1 CONDUCTIVITY Water 1 S 150.1 PH Water 1 S 160.1 TDS	ER-1	11-APR-97	11-APR-97	11-MAY-97 Hold:09-MAY-97 Hold:18-APR-97 Hold:18-APR-97
L9170-2 Temp 15, M=RCRA 8 Metals Location: RFG02-37B Water 1 S 6010 ICP METALS Water 1 S 6010 ICP TRACE Water 1 S 7470 MERCURY	ER-2	11-APR-97	11-APR-97	11-MAY-97 Hold:08-OCT-97 Hold:08-OCT-97 Hold:09-MAY-97
* L9170-3 Temp 15; Location: RFG02-37B Water 1 S 300.0 NO3+NO2 AS N	ER-3	11-APR-97	11-APR-97	11-MAY-97 Hold:09-MAY-97
L9170-4 Temp 15, TPH=Diesel Location: RFG02-37B Water 1 S 8015M - TPH	ER-4	11-APR-97	11-APR-97	11-MAY-97 Hold:18-APR-97
L9170-5 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-6 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-7 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-8 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-9 Location: Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S TROYER	REPORT TYPE	11-APR-97	11-APR-97	11-MAY-97

* CHANGED 300.0 NITRATE TO
300.0 NO₃ + NO₂
(Preserved sample.)

Signature: R. Callison

Date: 4-14-97

0411171A

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Apr 11 1997, 02:41 pm

Login Number: L9170
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9170-1 Temp 15; Location: RFG02-37B	ER-1	11-APR-97	11-APR-97	11-MAY-97
Water 1 S 120.1 CONDUCTIVITY		Hold:09-MAY-97		
Water 1 S 150.1 PH		Hold:18-APR-97		
Water 1 S 160.1 TDS		Hold:18-APR-97		
L9170-2 Temp 15, M=RCRA 8 Metals - Location: RFG02-37B	ER-2	11-APR-97	11-APR-97	11-MAY-97
Water 1 S 6010 ICP METALS		Hold:08-OCT-97		
Water 1 S 6010 ICP TRACE		Hold:08-OCT-97		
Water 1 S 7470 MERCURY		Hold:09-MAY-97		
L9170-3 Temp 15; Location: RFG02-37B	ER-3	11-APR-97	11-APR-97	11-MAY-97
Water 1 S 300.0 NITRATE		Hold:13-APR-97		
L9170-4 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
Water 1 S 8015M - TPH		Hold:18-APR-97		
L9170-5 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-6 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-7 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-8 Temp 15, TPH=Diesel Location: RFG02-37B	ER-4	11-APR-97	11-APR-97	11-MAY-97
L9170-9 Location: Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S TROYER	REPORT TYPE	11-APR-97	11-APR-97	11-MAY-97

Signature: *Hail Oelerman*
 Date: 4/11/97

C411171A



975 Kelly Johnson Drive
Las Vegas, NV 89119
(702) 361-3955

FIELD CHAIN-OF-CUSTODY FORM

L 9170

Serial No: _____
Date: **4/12/97**
Page _____ of _____

Client Name and Address	Quote/Proposal No.		Sample Type**	Type of Preservative	No. of Containers	Matrix Code*	Collection		Analysis Requested	COMMENTS																																																																													
	Client Sample ID	Date					Time																																																																																
KMCC / ENSR 8000 W Lake Mead Dr Henderson, NV	0201 Project Name: HOBO-004-200	610/700 PI X	GC GC GC C	ICE ICE-HNO3 ICE-H2SO4 ICE	1 1 1 5	0 0 0 0	4/12/97	0915	BOIS M-D Nitrate X X X	unpreserved upon collection																																																																													
							4/12/97	0910																																																																															
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**Sample Matrix Codes: AR-Air, WW-Waste Water, SL-Soil, FI-Filter, SG-Sludge, BI-Biota, SD-Sediment, O-Other **Sample Type Codes: G-Grab, C-Composite, O-Other																																																																																							
Comments: Results to ENSR 1220 AVENIDA ACOSO CAMARILLO CAL 93012 805 38813775																																																																																							



**Sample Login
Login Review Checklist**

Lot Number L9170

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports form the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

<u>SAMPLE SUMMARY REPORT</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Are all samples present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Are all matrices indicated correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Are all analyses logged in for the correct container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Are samples logged in according to LAS batching procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>LOGIN CHAIN OF CUSTODY</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Have all appropriate comments been indicated in the comment section?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>SAMPLE RECEIVING CHECKLIST</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

Paul Osterman 4/11/97
primary review signature date

[Signature] 4/11/97
secondary review signature date

(41170)

LAS LABORATORIES, INC.

Sample Receiving Checklist

Client Name: Kevv m. Gese

Job No:

9170

Cooler ID:

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 15.2 - Samples not in cooler - CSR notified PH -

temperature of temp. blank upon receipt: n/a - long enough to chill *Comments/Discrepancies

- custody seals present
- custody seals intact
- chain of custody present
- blue icolor equiv. present
- blue icolor equiv. frozen
- rad survey completed

SAMPLE CONDITION UPON RECEIPT

- all bottles labeled
- bottle custody seal present
- bottle custody seal intact
- samples intact
- proper container used for sample
- sample volume sufficient for analysis
- proper pres. indicated on the COC
- VOA's contain headspace
- are samples bi-phasic (if so, indicate sample ID's):

MISCELLANEOUS ITEMS

- samples with short holding times
- samples to subcontract

ADDITIONAL COMMENTS/DISCREPANCIES

Sample date on COC + bottles is 4/12/97 - should be 4/10/97 - CSR notified PH
* ER - on coc analysis for PH only - no bottle analysis labeled as PH, IDS, conductivity
Sample bagged in per bottle, CSR notified PH

Completed by / date: K. Gese 4/11/97
sent to the client (date/initials): K. Traver 4-11-97 * Client's signature upon receipt:

Notes: - contact the appropriate CSR of any discrepancies immediately upon receipt

- please review this information and return via facsimile to the appropriate CSR (702)361-8146

Handwritten signature/initials

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
ER-1 λ	L9170-1 L9170-1 L9170-1		Water Water ✓ Water	120.1 CONDUCTIVITY 150.1 PH λ 160.1 TDS *
ER-2 λ	L9170-2 L9170-2 L9170-2		Water Water ✓ Water	6010 ICP METALS 6010 ICP TRACE 7470 MERCURY *
ER-3 λ	L9170-3		Water ✓	300.0 NITRATE *
ER-4 λ	L9170-4		Water ✓	8015M - TPH λ
REPORT TYPE ✓	L9170-9 ✓ L9170-9 ✓ L9170-9		Water Water ✓ Water	GC2 λ INORG TYPE 2 F T TROYER *

NON-METALS

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: ER-3

Date Collected: 11-APR-97

Matrix: Water

Login Number: L9170

Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
NITRATE-NITRITE-NITROGEN	300.0	47443	0.084	0.003	0.02	1		mg/L	15-APR-97	L9170-3

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: ER-1

Date Collected: 11-APR-97

Matrix: Water

Login Number: L9170

Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
SPECIFIC CONDUCTANCE	120.1	47439	1.74	1.	1.	1		uS/cm	17-APR-97	L9170-1
PH	150.1	47434	6.2	0.1	0.1	1		pH Units	14-APR-97	L9170-1
TOTAL DISSOLVED SOLIDS	160.1	47432	<10	10	40	1	U	mg/L	14-APR-97	L9170-1

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

LogIn/SDG Number: L9170

Analyte	Batch ID	Date Analyzed	LAB ID	MB Result	MDL	MDL	Units	Data Qual
Total Dissolved Solids	47432	14-APR-97	47432MB	13.0	10	40	mg/L	B
Nitrate-Nitrogen	47443	15-APR-97	47443MB	<0.003	0.003	0.02	mg/L	U

PT NAME: genlongc2 TYPE (S-SDG, L-LogIn): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

LogIn/SDG Number: L9170

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	SMP Result	DUP Result	Units	RPD	Data Qual	RPD Limit
Total Dissolved Solids	47432	14-APR-97	ER-1	L9170-1	47432DUP	<10	14.0	mg/L		b	20
pH	47434	14-APR-97	ER-1	L9170-1	47434DUP	6.22	6.06	pH Units	0.16		20
Specific Conductance	47439	17-APR-97	ER-1	L9170-1	47439DUP	1.74	1.77	uS/cm	1.8		20
Nitrate-Nitrite-Nitrogen	47443	15-APR-97	M17	L9166-3	47443DUP	509.	509.	mg/L	0		20

APT NAME: genionqc2 TYPE (S-SDG, L-Login) : L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

- The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

!! - The duplicate precision for pH is the absolute difference.

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9170

Analyte	Batch ID	Date Analyzed	Client ID	LAB ID	Sample ID	MS Result	RPD Result	Known Value	Units	% Rec	Data Qual	QC Limits
Nitrate-Nitrite-Nitrogen	47443	15-APR-97	M17	L9166-3	47443MS	536.	509.	22.0	mg/L	0.00	a	75-125

PT NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

- The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.

LAS Laboratories, Inc.

ICS DATA SUMMARY

Login/SDG Number: L9170

Analyte	Batch ID	Date Analyzed	LAB ID	ICS Result	Known Value	Units	Req	Data Qual	OC Limits
Total Dissolved Solids	47432	14-APR-97	47432LCS	1000	1000	mg/L	100		80-120
Nitrate-Nitrogen	47443	15-APR-97	47443LCS	12.6	12.5	mg/L	101		80-120
Nitrite-Nitrogen	47443	15-APR-97	47443LCS	15.2	15.0	mg/L	102		80-120

PRINT NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

METALS

WATER

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV

Project Name: KERR-MCGEE

Project Desc: Misc.

Client Sample ID: ER-2
Date Collected: 11-APR-97
Matrix: Water

SDG Number: L9145W
Date Received: 11-APR-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
ARSENIC, TOTAL	6010	47621	<0.003	0.003	0.01	1	U	mg/l	21-APR-97	L9170-2
BARIUM, TOTAL	6010	47621	<0.001	0.001	0.2	1	U	mg/l	21-APR-97	L9170-2
CADMIUM, TOTAL	6010	47621	<0.002	0.002	0.005	1	U	mg/l	21-APR-97	L9170-2
CHROMIUM, TOTAL	6010	47621	0.002	0.001	0.01	1	B	mg/l	21-APR-97	L9170-2
LEAD, TOTAL	6010	47621	<0.002	0.002	0.003	1	NU	mg/l	21-APR-97	L9170-2
SELENIUM, TOTAL	6010	47621	<0.004	0.004	0.005	1	U	mg/l	21-APR-97	L9170-2
SILVER, TOTAL	6010	47621	<0.002	0.002	0.01	1	U	mg/l	21-APR-97	L9170-2
MERCURY, TOTAL	7470	47628	<0.0002	0.0002	0.0002	1	U	mg/l	21-APR-97	L9170-2

AS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

LogIn/SDG Number: L9145W

Analyte	Batch ID	Date Analyzed	Lab ID	MS Result	MSL	RDL	Units	Units (Qual)
GENIC, TOTAL	47621	21-APR-97	47621MB	<0.003	0.003	0.01	mg/l	U
SIUM, TOTAL	47621	21-APR-97	47621MB	<0.001	0.001	0.2	mg/l	U
SIUM, TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.005	mg/l	U
SIUM, TOTAL	47621	21-APR-97	47621MB	<0.001	0.001	0.01	mg/l	U
TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.003	mg/l	U
SIUM, TOTAL	47621	21-APR-97	47621MB	<0.004	0.004	0.005	mg/l	U
IR, TOTAL	47621	21-APR-97	47621MB	<0.002	0.002	0.01	mg/l	U
IRY, TOTAL	47628	21-APR-97	47628MB	<0.0002	0.0002	0.0002	mg/l	U

ME: gemmetqc2 TYPE (S-SDG, L-LogIn): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

DUPLICATE DATA SUMMARY

Client/SDG Number: L9145W

Sample Type	Batch ID	Date Analyzed	Client ID	LAB ID	Sample ID	Exp Result	DUP Result	Units	App	Date Qual	RPD Limit
VIC, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.003	0.00335	mg/l		b	20
M, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.001	<0.001	mg/l		b	20
IUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l		b	20
IUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	0.00226	0.00143	mg/l		b	20
TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l		b	20
IUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.004	<0.004	mg/l		b	20
IR, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621DUP	<0.002	<0.002	mg/l		b	20
IRY, TOTAL	47628	21-APR-97	ER-2	L9170-2	47628DUP	<0.0002	<0.0002	mg/l		b	20

NAME: gemmetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

AS Laboratories, Inc.

TRIX SPIKE DATA SUMMARY

in/SDG Number: L9145W

Yr	Batch ID	Date Analyzed	Client ID	IRL ID	Sample ID	RS Result	SP Result	Known Value	Units	# Rec	Data Qual	PC Limits
IC, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.606	<0.003	0.500	mg/l	121		75-125
M, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	2.17	<0.001	2.00	mg/l	108		75-125
UM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.0577	<0.002	0.0500	mg/l	115		75-125
IUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.244	0.00226	0.200	mg/l	121		75-125
TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.629	<0.002	0.500	mg/l	126	N	75-125
R IUM, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.592	<0.004	0.500	mg/l	118		75-125
V R, TOTAL	47621	21-APR-97	ER-2	L9170-2	47621MS	0.0567	<0.002	0.0500	mg/l	113		75-125
ICIRY, TOTAL	47628	21-APR-97	ER-2	L9170-2	47628MS	0.000963	<0.0002	0.00100	mg/l	96		75-125

NAME: gemnetqc2 TYPE (S-SDG, L-Login): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

Matrix Spike/Matrix Spike Duplicate recovery exceeded acceptance limits.

DATA SUMMARY

in/SDG Number: L9145W

Site	Batch ID	Date Analyzed	LAL ID	LCS Results	Known Value	Units	Rec	Date Qual	CS Limits
IIIC, TOTAL	47621	21-APR-97	47621LCS	0.526	0.500	mg/l	105		80-120
IIM, TOTAL	47621	21-APR-97	47621LCS	2.07	2.00	mg/l	103		80-120
IIMUM, TOTAL	47621	21-APR-97	47621LCS	0.0525	0.0500	mg/l	105		80-120
IIO-IUM, TOTAL	47621	21-APR-97	47621LCS	0.209	0.200	mg/l	104		80-120
AD, TOTAL	47621	21-APR-97	47621LCS	0.512	0.500	mg/l	102		80-120
IIENIUM, TOTAL	47621	21-APR-97	47621LCS	0.533	0.500	mg/l	107		80-120
IIVER, TOTAL	47621	21-APR-97	47621LCS	0.0528	0.0500	mg/l	106		80-120
IIICURY, TOTAL	47628	21-APR-97	47628LCS	0.000962	0.00100	mg/l	96		80-120

NAME: gemmetqc2 TYPE (S-SDG, L-LogIn): S LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

EPA METHOD 8015M (Total Petroleum Hydrocarbon)

SAMPLE RESULTS FORMS AND QC SUMMARIES

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)
8015M - TPH

Client Sample ID:	ER-4	LAS Sample ID:	L9170-4
Date Collected:	11-APR-97	Date Received:	11-APR-97
Date Analyzed:	17-APR-97	Analytical Batch ID:	040797-8015-L-6
Date Extracted:	15-APR-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	149%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<1.0	1.0	

LAS LABORATORIES

TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	Method Blank	LAS Sample ID:	47451MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	17-APR-97	Analytical Batch ID:	040797-8015-L-7
Date Extracted:	15-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	84%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	<1.0	1.0	
JP5 Range Organics		<1.0	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: LCS - DIESEL
Date Collected: N/A
Date Analyzed: 16-APR-97
Date Extracted: 15-APR-97

LAS Sample ID: 47451LCS-1
Date Received: N/A
Analytical Batch ID: 040797-8015-L-5
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	87%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics	TPH	13.	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	LCS - JP-5	LAS Sample ID:	47451LCS-2
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	17-APR-97	Analytical Batch ID:	040797-8015-L-7
Date Extracted:	15-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	93%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
JP5 Range Organics		13.	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: LCSDUP - DIESEL
Date Collected: N/A
Date Analyzed: 16-APR-97
Date Extracted: 15-APR-97

LAS Sample ID: 47451LCSDUP-1
Date Received: N/A
Analytical Batch ID: 040797-8015-L-5
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	109%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
Diesel Range Organics		TPH 15.	1.0	

LAS LABORATORIES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	LCSDUP - JP-5	LAS Sample ID:	47451LCSDUP-2
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	17-APR-97	Analytical Batch ID:	040797-8015-L-7
Date Extracted:	15-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	92%	26-152

CONSTITUENT	CAS NO.	RESULT mg/L	PQL mg/L	DATA QUALIFIER(S)
JP5 Range Organics		13.	1.0	

LAS LABORATORIES

LCS DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: LCS - DIESEL
Date Collected: N/A
Date Analyzed: 16-APR-97
Date Extracted: 15-APR-97

LAS Sample ID: 47451LCS-1
Date Received: N/A
Analytical Batch ID: 040797-8015-L-5
Analytical Dilution: 1
Preparation Dilution: 1.0
QC Group: 8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	87%	26-152

Constituent	Spike Added mg/L	LCS Concentration mg/L	LCS % Recovery	QC Limits
Diesel Range Organics	15.1	13.5	90	61-143

LAS LABORATORIES

LCS DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID:	LCS - JP-5	LAS Sample ID:	47451LCS-2
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	17-APR-97	Analytical Batch ID:	040797-8015-L-7
Date Extracted:	15-APR-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	93%	26-152

Constituent	Spike Added mg/L	LCS Concentration mg/L	LCS	QC Limits
			% Recovery	
JP5 Range Organics	15.1	13.5	89	30-138

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: LCSDUP - DIESEL
 Date Collected: N/A
 Date Analyzed: 16-APR-97
 Date Extracted: 15-APR-97

LAS Sample ID: 47451LCSDUP-1
 Date Received: N/A
 Analytical Batch ID: 040797-8015-L-5
 Analytical Dilution: 1
 Preparation Dilution: 1.0
 QC Group: 8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	109%	26-152

Constituent	Spike Added mg/L	LCS DUP Concentration mg/L	Recovery	RPD	QC Limits	
					RPD	Recovery
Diesel Range Organics	15.1	15.5	103	14	20	61-14

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY TOTAL PETROLEUM HYDROCARBONS (TPH)

Client Sample ID: LCSDUP - JP-5
 Date Collected: N/A
 Date Analyzed: 17-APR-97
 Date Extracted: 15-APR-97

LAS Sample ID: 47451LCSDUP-2
 Date Received: N/A
 Analytical Batch ID: 040797-8015-L-7
 Analytical Dilution: 1
 Preparation Dilution: 1.0
 QC Group: 8015M - TPH_47451

SURROGATE	RECOVERY	QC Limits
n-OCTACOSANE	92%	26-152

Constituent	Spike Added mg/L	LCS DUP Concentration mg/L	* Recovery	RPD	QC Limits	
					RPD	* Recovery
JP5 Range Organics	15.1	12.8	85	5	20	30-13

RUN LOGS/EXTRACTION SHEETS

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ DI	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/3/97 13:13	CH2CL2		1	8015\040397\104039701.d01	8015\40397a.L.MET	NO	
DA	4/3/97 13:58	RT 0608.36.1		1	8015\040397\104039701.d02	8015\40397a.L.MET	OK	
DA	4/3/97 14:48	RT 0727.58.1		1	8015\040397\104039701.d03	8015\40397a.L.MET	OK	
DA	4/3/97 15:34	1D 0990.04.1		1	8015\040397\104039701.d04	8015\40397a.L.MET	NO	
DA	4/3/97 16:17	2D 0990.04.2		1	8015\040397\104039701.d05	8015\40397a.L.MET	NO	
DA	4/3/97 17:04	3D 0990.04.3		1	8015\040397\104039701.d06	8015\40397a.L.MET	NO	
DA	4/3/97 17:50	4D 0990.04.4		1	8015\040397\104039701.d07	8015\40397a.L.MET	NO	
DA	4/3/97 18:37	5D 0990.04.5		1	8015\040397\104039701.d08	8015\40397a.L.MET	NO	
DA	4/3/97 19:24	D QCCS 0990.08.1		1	8015\040397\104039701.d10	8015\40397a.L.MET	OK	
DA	4/3/97 20:11	1G 0990.06.1		1	8015\040397\104039701.d11	8015\40397a.L.MET	OK	
DA	4/3/97 20:57	2G 0990.06.2		1	8015\040397\104039701.d12	8015\40397a.L.MET	OK	
DA	4/3/97 21:44	3G 0990.06.3		1	8015\040397\104039701.d13	8015\40397a.L.MET	OK	
DA	4/3/97 22:30	4G 0990.06.4		1	8015\040397\104039701.d14	8015\40397a.L.MET	OK	
DA	4/3/97 23:17	5G 0990.06.5		1	8015\040397\104039701.d15	8015\40397a.L.MET	OK	
DA	4/4/97 0:04	G QCCS 0990.08.2		1	8015\040397\104039701.d16	8015\40397a.L.MET	NO	
DA	4/4/97 0:50	1JP5 0860.85.1		1	8015\040397\104039701.d17	8015\40397a.L.MET	NO	
DA	4/4/97 1:37	2JP5 0860.85.2		1	8015\040397\104039701.d18	8015\40397a.L.MET	NO	
DA	4/4/97 2:24	3JP5 0860.85.3		1	8015\040397\104039701.d19	8015\40397a.L.MET	NO	
DA	4/4/97 3:11	4JP5 0860.85.4		1	8015\040397\104039701.d20	8015\40397a.L.MET	NO	
DA	4/4/97 3:58	5JP5 0860.85.5		1	8015\040397\104039701.d21	8015\40397a.L.MET	OK	
DA	4/4/97 4:45	1K 0990.07.1		1	8015\040397\104039701.d22	8015\40397a.L.MET	OK	
DA	4/4/97 5:31	2K 0990.07.2		1	8015\040397\104039701.d23	8015\40397a.L.MET	OK	
DA	4/4/97 6:17	3K 0990.07.3		1	8015\040397\104039701.d24	8015\40397a.L.MET	OK	
DA	4/4/97 7:04	4K 0990.07.4		1	8015\040397\104039701.d25	8015\40397a.L.MET	OK	
DA	4/4/97 7:51	5K 0990.07.5		1	8015\040397\104039701.d26	8015\40397a.L.MET	OK	
DA	4/4/97 10:21	1D 0990.04.1		1	8015\040397\104039701.d27	8015\40397a.L.MET	OK	
DA	4/4/97 11:16	2D 0990.04.2		1	8015\040397\104039701.d28	8015\40397a.L.MET	NO	
DA	4/4/97 12:03	3D 0990.04.3		1	8015\040397\104039701.d29	8015\40397a.L.MET	NO	
DA	4/4/97 12:48	4D 0990.04.4		1	8015\040397\104039701.d30	8015\40397a.L.MET	OK	
DA	4/4/97 13:35	5D 0990.04.5		1	8015\040397\104039701.d31	8015\40397a.L.MET	NO	
DA	4/4/97 14:38	2D 0990.04.2		1	8015\040397\104039701.d32	8015\40397a.L.MET	OK	
DA	4/4/97 15:25	3D 0990.04.3		1	8015\040397\104039701.d33	8015\40397a.L.MET	OK	
DA	4/4/97 16:12	4D 0990.04.3		1	8015\040397\104039701.d34	8015\40397a.L.MET	NO	
DA	4/4/97 16:58	1D 0990.04.1		1	8015\040397\104039701.d35	8015\40397a.L.MET	NO	
DA	4/4/97 17:45	5D 0990.04.5		1	8015\040397\104039701.d36	8015\40397a.L.MET	OK	
DA	4/4/97 18:32	D QCCS 0990.08.1		1	8015\040397\104039701.d37	8015\40397a.L.MET	OK	
DA	4/4/97 19:18	1JP5 0860.85.1		1	8015\040397\104039701.d38	8015\40397a.L.MET	OK	
DA	4/4/97 20:05	2JP5 0860.85.2		1	8015\040397\104039701.d39	8015\40397a.L.MET	OK	
DA	4/4/97 20:51	3JP5 0860.85.3		1	8015\040397\104039701.d40	8015\40397a.L.MET	OK	
DA	4/4/97 21:38	4JP5 0860.85.4		1	8015\040397\104039701.d41	8015\40397a.L.MET	OK	
DA	4/4/97 22:25	5JP5 0860.85.5		1	8015\040397\104039701.d42	8015\40397a.L.MET	OK	
DA	4/4/97 23:12	1MO 0860.94.1		1	8015\040397\104039701.d43	8015\40397a.L.MET	OK	
DA	4/4/97 23:58	2MO 0860.94.2		1	8015\040397\104039701.d44	8015\40397a.L.MET	OK	
DA	4/5/97 0:45	3MO 0860.94.3		1	8015\040397\104039701.d45	8015\40397a.L.MET	OK	
DA	4/5/97 1:32	4MO 0860.94.4		1	8015\040397\104039701.d46	8015\40397a.L.MET	OK	
DA	4/5/97 2:19	5MO 0860.94.5		1	8015\040397\104039701.d47	8015\40397a.L.MET	OK	
DA	4/5/97 3:05	3D 0990.04.3		1	8015\040397\104039701.d48	8015\40397a.L.MET	NO	
DA	4/5/97 3:52	4D 0990.04.3		1	8015\040397\104039701.d49	8015\40397a.L.MET	NO	
DA	4/5/97 4:38	5G 0990.08.3		1				

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ DI	Raw Data File	Method File	Reported	ReAnalyzed
DA	4/7/97 12:26	3D 0990-04-3		1	8015\040797-L\04079701.d01	8015\040397-L.MET	NO	
DA	4/7/97 14:15	3D 0990-04-3		1	8015\040797-L\04079701.d02	8015\040397-L.MET	OK	
DA	4/7/97 15:01	3G 0990-06-3		1	8015\040797-L\04079701.d03	8015\040397-L.MET	OK	
DA	4/7/97 15:47	3K 0990-07-3		1	8015\040797-L\04079701.d04	8015\040397-L.MET	OK	
DA	4/7/97 16:34	3K 0990-07-3		1	8015\040797-L\04079701.d05	8015\040397-L.MET	NO	
DA	4/7/97 17:21	3MO 0860-94-3		1	8015\040797-L\04079701.d06	8015\040397-L.MET	OK	
DA	4/7/97 18:07	3MO 0860-94-3		1	8015\040797-L\04079701.d07	8015\040397-L.MET	NO	
DA	4/7/97 18:53	CH2CL2		1	8015\040797-L\04079701.d08	8015\040397-L.MET	NO	
DA	4/7/97 18:50	L9064-14 1:25		4.953	8015\040797-L\04079701.d09	8015\040397-L.MET	OK	
DA	4/7/97 20:26	L9064-14 1:50		1	8015\040797-L\04079701.d10	8015\040397-L.MET	NO	
DA	4/7/97 21:13	46968LCS 1:2		0.01	8015\040797-L\04079701.d11	8015\040397-L.MET	OK	
DA	4/7/97 21:59	46968LCS DUP 1:2		0.01	8015\040797-L\04079701.d12	8015\040397-L.MET	OK	
DA	4/7/97 22:45	3D 0990-04-3		1	8015\040797-L\04079701.d13	8015\040397-L.MET	OK	
DA	4/7/97 23:32	3D 0990-04-3		1	8015\040797-L\04079701.d14	8015\040397-L.MET	NO	
DA	4/8/97 0:19	3G 0990-06-3		1	8015\040797-L\04079701.d15	8015\040397-L.MET	NO	
DA	4/8/97 1:05	3G 0990-06-3		1	8015\040797-L\04079701.d16	8015\040397-L.MET	OK	
DA	4/8/97 1:52	3K 0990-07-3		1	8015\040797-L\04079701.d17	8015\040397-L.MET	OK	
DA	4/8/97 2:38	3K 0990-07-3		1	8015\040797-L\04079701.d18	8015\040397-L.MET	NO	
DA	4/8/97 3:25	3MO 0860-94-3		1	8015\040797-L\04079701.d19	8015\040397-L.MET	OK	
DA	4/8/97 4:12	3MO 0860-94-3		1	8015\040797-L\04079701.d20	8015\040397-L.MET	NO	
DA	4/8/97 14:40	3D 0990-04-3		1	8015\040797-L\04079701.d21	8015\040397-L.MET	NO	
DA	4/8/97 15:35	3D 0990-04-3		1	8015\040797-L\04079701.d22	8015\040397-L.MET	OK	
DA	4/8/97 16:22	3G 0990-06-3		1	8015\040797-L\04079701.d23	8015\040397-L.MET	OK	
DA	4/8/97 17:09	3G 0990-06-3		1	8015\040797-L\04079701.d24	8015\040397-L.MET	OK	
DA	4/8/97 17:56	3MO 0860-94-3		1	8015\040797-L\04079701.d25	8015\040397-L.MET	OK	
DA	4/8/97 18:42	3MO 0860-94-3		1	8015\040797-L\04079701.d26	8015\040397-L.MET	NO	
DA	4/8/97 19:28	CH2CL2		1	8015\040797-L\04079701.d27	8015\040397-L.MET	NO	
DA	4/8/97 21:45	47239MB		0.1667	8015\040797-L\04079701.d28	8015\040397-L.MET	OK	
DA	4/8/97 22:31	47239LCS		0.1667	8015\040797-L\04079701.d29	8015\040397-L.MET	OK	
DA	4/8/97 23:17	47239MS		0.1639	8015\040797-L\04079701.d30	8015\040397-L.MET	OK	
DA	4/8/97 0:04	47239MSD		0.163	8015\040797-L\04079701.d31	8015\040397-L.MET	OK	
DA	4/8/97 0:50	L9133-1		0.1632	8015\040797-L\04079701.d32	8015\040397-L.MET	OK	
DA	4/8/97 1:38	L9133-2		0.163	8015\040797-L\04079701.d33	8015\040397-L.MET	OK	ALSO 1:4
DA	4/8/97 2:24	3D 0990-04-3		1	8015\040797-L\04079701.d34	8015\040397-L.MET	OK	
DA	4/8/97 3:11	3D 0990-04-3		1	8015\040797-L\04079701.d35	8015\040397-L.MET	NO	
DA	4/8/97 3:58	3G 0990-06-3		1	8015\040797-L\04079701.d36	8015\040397-L.MET	NO	
DA	4/8/97 4:45	3G 0990-06-3		1	8015\040797-L\04079701.d37	8015\040397-L.MET	OK	
DA	4/8/97 5:31	3MO 0860-94-3		1	8015\040797-L\04079701.d38	8015\040397-L.MET	OK	
DA	4/8/97 6:18	3MO 0860-94-3		1	8015\040797-L\04079701.d39	8015\040397-L.MET	OK	
DA	4/8/97 7:46	L9133-2 1:4		0.6504	8015\040797-L\04079701.d40	8015\040397-L.MET	OK	
DA	4/8/97 8:55	3D 0990-04-3		1	8015\040797-L\04079701.d41	8015\040397-L.MET	OK	
DA	4/8/97 10:41	3G 0990-06-3		1	8015\040797-L\04079701.d42	8015\040397-L.MET	OK	
DA	4/8/97 11:28	3MO 0860-94-3		1	8015\040797-L\04079701.d43	8015\040397-L.MET	OK	
DA	4/8/97 15:53	CH2CL2		1	8015\040797-L\04079701.d44	8015\040397-L.MET	NO	
DA	4/8/97 16:38	47234MB		0.005	8015\040797-L\04079701.d45	8015\040397-L.MET	OK	
DA	4/8/97 17:26	47234LCS		0.005	8015\040797-L\04079701.d46	8015\040397-L.MET	OK	
DA	4/8/97 18:13	47234LCS DUP		0.005	8015\040797-L\04079701.d47	8015\040397-L.MET	OK	
DA	4/8/97 18:59	L9103-1		0.0051	8015\040797-L\04079701.d48	8015\040397-L.MET	OK	
DA	4/8/97 19:46	L9103-3		0.0051	8015\040797-L\04079701.d49	8015\040397-L.MET	OK	

Analyst	Date end Time	Sample Name	Description/ Solution	Matrix/ DM	Raw File	Method File	Reported	ReAnalyzed
DA	4/9/97 20:33	L8113-10		0.0047	8015\040797-L\04079701.d50	8015\040397-L.MET	OK	
DA	4/9/97 21:19	3D 0990-04-3		1	8015\040797-L\04079701.d51	8015\040397-L.MET	OK	
DA	4/9/97 22:06	3D 0990-04-3		1	8015\040797-L\04079701.d52	8015\040397-L.MET	NO	
DA	4/9/97 22:53	3G 0990-06-3		1	8015\040797-L\04079701.d53	8015\040397-L.MET	NO	
DA	4/9/97 23:38	3G 0990-06-3		1	8015\040797-L\04079701.d54	8015\040397-L.MET	OK	
DA	4/16/97 9:20	CH2CL2		1	8015\040797-L\04079701.d55	8015\040397-L.MET	NO	
DA	4/16/97 10:53	3D 0990-04-3		1	8015\040797-L\04079701.d56	8015\040397-L.MET	OK	
DA	4/16/97 11:40	3JF5 0860-85-3		1	8015\040797-L\04079701.d57	8015\040397-L.MET	OK	
DA	4/16/97 12:29	CH2CL2		1	8015\040797-L\04079701.d58	8015\040397-L.MET	NO	
DA	4/16/97 13:15	47451MB		0.005	8015\040797-L\04079701.d59	8015\040397-L.MET	NO	
DA	4/16/97 14:01	47451LCS-1		0.005	8015\040797-L\04079701.d60	8015\040397-L.MET	OK	
DA	4/16/97 14:48	47451LCS-DUP-1		0.005	8015\040797-L\04079701.d61	8015\040397-L.MET	OK	
DA	4/16/97 15:34	47451LCS-2		0.005	8015\040797-L\04079701.d62	8015\040397-L.MET	NO	
DA	4/16/97 16:21	47451LCS-DUP-2		0.005	8015\040797-L\04079701.d63	8015\040397-L.MET	NO	
DA	4/16/97 17:08	L8146-13		0.0051	8015\040797-L\04079701.d64	8015\040397-L.MET	OK	
DA	4/16/97 17:55	L8146-37		0.0051	8015\040797-L\04079701.d65	8015\040397-L.MET	OK	
DA	4/16/97 18:41	L8148-34		0.0053	8015\040797-L\04079701.d66	8015\040397-L.MET	NO	
DA	4/16/97 19:28	L8160-30		0.0051	8015\040797-L\04079701.d67	8015\040397-L.MET	OK	
DA	4/16/97 20:14	L8160-34		0.0051	8015\040797-L\04079701.d68	8015\040397-L.MET	OK	
DA	4/16/97 21:01	3D 0990-04-3		1	8015\040797-L\04079701.d69	8015\040397-L.MET	OK	
DA	4/16/97 21:48	3D 0990-04-3		1	8015\040797-L\04079701.d70	8015\040397-L.MET	NO	
DA	4/16/97 22:35	3JF5 0860-85-3		1	8015\040797-L\04079701.d71	8015\040397-L.MET	NO	
DA	4/16/97 23:22	3JF5 0860-85-3		1	8015\040797-L\04079701.d72	8015\040397-L.MET	NO	
DA	4/17/97 0:08	L8170-4		0.005	8015\040797-L\04079701.d73	8015\040397-L.MET	OK	
DA	4/17/97 0:54	L8171-67		0.0051	8015\040797-L\04079701.d74	8015\040397-L.MET	OK	
DA	4/17/97 1:42	L8171-71		0.0051	8015\040797-L\04079701.d75	8015\040397-L.MET	OK	
DA	4/17/97 2:28	L8171-75		0.0052	8015\040797-L\04079701.d76	8015\040397-L.MET	OK	
DA	4/17/97 3:15	L8176-24		0.0051	8015\040797-L\04079701.d77	8015\040397-L.MET	OK	
DA	4/17/97 4:01	L8176-37		0.0051	8015\040797-L\04079701.d78	8015\040397-L.MET	OK	
DA	4/17/97 4:48	DIESEL 0859-91-3		0.005	8015\040797-L\04079701.d79	8015\040397-L.MET	OK	
DA	4/17/97 5:35	N.OCT. 0859-96-1		0.005	8015\040797-L\04079701.d80	8015\040397-L.MET	OK	
DA	4/17/97 6:21	3D 0990-04-3		1	8015\040797-L\04079701.d81	8015\040397-L.MET	NO	
DA	4/17/97 7:08	3D 0990-04-3		1	8015\040797-L\04079701.d82	8015\040397-L.MET	NO	
DA	4/17/97 7:54	3JF5 0860-85-3		1	8015\040797-L\04079701.d83	8015\040397-L.MET	OK	
DA	4/17/97 9:04	47451MB		0.005	8015\040797-L\04079701.d84	8015\040397-L.MET	OK	
DA	4/17/97 10:12	47451LCS-2		0.005	8015\040797-L\04079701.d85	8015\040397-L.MET	OK	
DA	4/17/97 10:58	47451LCS-DUP-2		0.005	8015\040797-L\04079701.d86	8015\040397-L.MET	OK	
DA	4/17/97 11:45	L8149-34		0.0053	8015\040797-L\04079701.d87	8015\040397-L.MET	OK	
DA	4/17/97 12:32	3D 0990-04-3		1	8015\040797-L\04079701.d88	8015\040397-L.MET	NO	
DA	4/17/97 13:18	3D 0990-04-3		1	8015\040797-L\04079701.d89	8015\040397-L.MET	OK	
DA	4/17/97 14:05	3JF5 0860-85-3		1	8015\040797-L\04079701.d90	8015\040397-L.MET	OK	

04115
AT-091
DUE

Diesel & JP.6
matrix spiked
AS

LAS LABORATORIES
TRACKING SHEET DATA REPORT (bs09)
EXTRACTION SHEET FOR: 8015M - TPH Extraction
WORKSHEET NUMBER: 8015M - TPH_47451

QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/CREATED	VOL/MT RECEIVED/ EXTR	WATER SAMPLE PH	SURR ML	MS ML	BROUQHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L9170-13	ED-003303	08-APR-97	10-APR-97	4-4-15-97 990ml	7	20		5.0ml	24ml
L9170-37	ED-003703	08-APR-97	10-APR-97	990ml					
L9170-34	ED-006203	09-APR-97	10-APR-97	990ml					
L9170-24	ED-003403	09-APR-97	11-APR-97	990ml					
L9170-34	ED-003503	09-APR-97	11-APR-97	1000ml					
L9170-4	ER-4	11-APR-97	11-APR-97	990ml	7				
L9171-67	VN60M1	09-APR-97	11-APR-97	980ml					
L9171-71	VN60M2	09-APR-97	11-APR-97	970ml					
L9171-75	VN60M3	10-APR-97	11-APR-97	990ml					
L9176-24	ED-004704	10-APR-97	12-APR-97	1000ml					
L9176-37	ED-004504	10-APR-97	12-APR-97						
47451MB	Method Blank								
47451LCS-1	LCS - DIESEL								

SIGNED: Eric S. [Signature]
SPIKE WITNESS: [Signature]

EXTRACTION METHOD: Sep. FLUORACI
DATE STARTED: 4-15-97
DATE COMPLETED: 4-15-97
QC BATCH# : 8015M - TPH_47451
LOT #'S : 26240
SURR ID # : 0859-85-2
CONC: 200 ug/L
MS ID # : 0859-91-3
CONC: 150 ug/L
MS.D # : 0859-91-2
CONC: 1651 ug/L
ACETONE: N/A
MARS04: K39636

REVIEWED BY: [Signature] DATE: 4/16/97
EXTRACT DOC: RECEIVED BY: [Signature]
NARRATIVE: Samples L9170-4, L9170-5, L9170-6, and part of L9170-7 were combined to obtain 1000ml for extraction for Sample L9170-4 above. These containers were 250ml amber glass jars. CSR NOTIFIED. See 04115.

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs09)

EXTRACTION SHEET FOR: 8015M - TPH Extraction

WORKSHEET NUMBER: 8015M - TPH_47451

LAL #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/EXTR CREATED	VOLUME EXTR	WATER SAMPLE PH	SURR ML	MS ML	BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
47451LCS0UP-1	LCS0	LCS0UP - DIESEL Dupl	04-14-97	14-APR-97	100 ml	7	2.0	1.0	5.0 ml	≈ 4 ml
47451LCS-2	LCS	LCS - JP-5		14-APR-97						
47451LCS0UP-2	LCS0	LCS0UP - JP-5		14-APR-97						
SPKEL047451	SPKEL04	Spike Lot Sample		14-APR-97						4.5 ml

EXTRACTION METHOD: _____

DATE STARTED: _____

DATE COMPLETED: _____

SIGNED: _____

QC BATCH# : 8015M - TPH_47451

LOT #'S

SPIKE WITNESS: _____

SURR ID # : _____

CONC: _____

WAZ504: _____

MS ID # : _____

CONC: _____

ACETONE: _____

REVIEWED BY: _____

NARRATIVE _____

EXTRACT COC: RECEIVED BY: _____

DATE: _____



LAS Laboratories, Inc.

KERR-MCGEE

ANALYTICAL DATA REPORT

FOR

pH and CHROMIUM

LOG-IN NUMBER	<u>L9647</u>
QUOTATION NUMBER	<u>Q707146-14</u>
DOCUMENT FILE NUMBER	<u>0610171</u>

COPY



June 12, 1997

Ms. Susan M. Crowley
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

RE: Log-in No. L9647
Quotation No. Q707146-14
Document File No. 0610171

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 10 June 1997. The temperature of the cooler upon receipt was 5°C. All sample containers coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Laura G. Akenhead at (702) 361-3955, ext 272. If you are unable to contact the Project Manager, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Laura G. Akenhead
Project Manager

cc: Client Services
Document Control

**CASE NARRATIVE
INORGANIC pH ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on June 10, 1997. The samples were logged in as L9647 and prepared and analyzed in workgroup # 49489 for:

A. Method 9045 pH

Holding Time Requirements

- The request for pH analysis was received after the holding time had expired. All associated samples are flagged with an "H".

Internal Quality Control

- All Internal Quality Control were within acceptable limits.

Shellee McGrath
Prepared By

June 12, 1997
Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
SOIL**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

- All soil samples for chromium analysis were received on June 10, 1997. The samples were prepared and analyzed as LAS Batch 610 km. Sample SB2-2D (L9647-1) was used for matrix spike and sample duplicate analyses.

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits for all analytes.

Internal Quality Control

All Internal Quality Control were within acceptance limits.

- The matrix spike recovery for chromium exceeded the 75-125% acceptance limit, however, the sample concentration is considered significant (i.e., greater than four times the spiking level) relative to the amount spiked into the sample. Therefore, the data are not qualified.
- The samples were analyzed by Method 6010 ICP Metals.

Shellee McGrath
Prepared By

June 12, 1997
Date

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹Used as footnote designations on the QC summary form.

SAMPLE LOGIN AND CHAIN OF CUSTODY

10/10/2010 10:10:10 AM

Revised

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (1n01)
Jun 13 1997, 01:16 pm

Login Number: L9647
Account: 171 Kerr-McGee * Henderson, NV
Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9647-1	SB2-2D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-42, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:07-OCT-97		
Soil	4 S 9045 PH	Hold:17-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-JUN-97		
L9647-2	SB2-4D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-44, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:07-OCT-97		
Soil	4 S 9045 PH	Hold:17-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-JUN-97		
L9647-3	SB2-7D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-50, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:07-OCT-97		
Soil	4 S 9045 PH	Hold:17-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-JUN-97		
L9647-4	SB2-8D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-51, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:07-OCT-97		
Soil	4 S 9045 PH	Hold:17-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-JUN-97		
L9647-5	SB2-9D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-52, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		
Soil	4 S 6010 ICP TRACE	Hold:07-OCT-97		
Soil	4 S 9045 PH	Hold:17-APR-97		
Soil	4 S PERCENT SOLIDS	Hold:10-JUN-97		
L9647-6	SB2-10D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-56, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS	Hold:07-OCT-97		

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jun 13 1997, 01:16 pm

Login Number: L9647
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-7 SB2-11D		10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-61, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-8 SB2-13D		10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-60, Temp 5				
Location: RFG19-57C				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-9 REPORT TYPE		10-JUN-97	10-JUN-97	13-JUN-97
Location:				
Water	1 S AKENHEAD			
* Water	1 S EDD - DISK DEL.			
Water	1 S INORG TYPE 2 RPT			

* added EDD per client request

Signature: _____

Date: _____

Samuel A. Berberic

LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jun 11 1997, 08:37 am

Login Number: L9647
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L9647-1	SB2-2D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-42, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-2	SB2-4D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-44, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-3	SB2-7D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-50, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-4	SB2-8D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-51, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-5	SB2-9D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-52, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-6	SB2-10D	10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-56, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	

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LAS LABORATORIES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jun 11 1997, 08:37 am

Login Number: L9647
 Account: 171 Kerr-McGee * Henderson, NV
 Project: KERR-MCGEE Misc.

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-7 SB2-11D		10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-61, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-8 SB2-13D		10-APR-97	10-JUN-97	13-JUN-97
M=Cr Only, Old Sample # L9157-60, Temp 5				
Location: 133				
Soil	4 S 6010 ICP METALS		Hold:07-OCT-97	
Soil	4 S 6010 ICP TRACE		Hold:07-OCT-97	
Soil	4 S 9045 PH		Hold:17-APR-97	
Soil	4 S PERCENT SOLIDS		Hold:10-JUN-97	
L9647-9 REPORT TYPE		10-JUN-97	10-JUN-97	13-JUN-97
Location:				
Water	1 S AKENHEAD			
Water	1 S INORG TYPE 2 RPT			

Signature: *Steve Akenhead*

Date: 6-11-97

0610171

LAS Laboratories
 SAMPLE SUMMARY REPORT (su02 S1)
 Kerr-McGee * Henderson, NV

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
REPORT TYPE	L9647-9 L9647-9		Water Water	AKENHEAD INORG TYPE 2 RP
SB2-10D	L9647-6 L9647-6 L9647-6 L9647-6		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-11D	L9647-7 L9647-7 L9647-7 L9647-7		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-13D	L9647-8 L9647-8 L9647-8 L9647-8		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-2D	L9647-1 L9647-1 L9647-1 L9647-1		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-4D	L9647-2 L9647-2 L9647-2 L9647-2		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-7D	L9647-3 L9647-3 L9647-3 L9647-3		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-8D	L9647-4 L9647-4 L9647-4 L9647-4		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS
SB2-9D	L9647-5 L9647-5 L9647-5 L9647-5		Soil Soil Soil Soil	6010 ICP METALS 6010 ICP TRACE 9045 PH PERCENT SOLIDS

0610171

Sample Login Login Review Checklist

Lot Number L9647

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

SAMPLE SUMMARY REPORT

YES NO N/A Comment

- | | | | | |
|---|---|---|---|--|
| 1. Are all sample ID's correct? | + | — | — | |
| 2. Are all samples present? | + | — | — | |
| 3. Are all matrices indicated correctly? | + | — | — | |
| 4. Are all analyses on the COC logged in for the appropriate samples? | + | — | — | |
| 5. Are all analyses logged in for the correct container? | + | — | — | |
| 6. Are samples logged in according to LAS batching procedures? | + | — | — | |

LOGIN CHAIN OF CUSTODY

YES NO N/A Comment

- | | | | | |
|---|---|---|---|--|
| 1. Are the collect, receive, and due dates correct for every sample? | + | — | — | |
| 2. Have all appropriate comments been indicated in the comment section? | + | — | — | |

SAMPLE RECEIVING CHECKLIST

YES NO N/A Comment

- | | | | | |
|---|---|---|---|--|
| 1. Are all discrepancies between the COC and the login noted (if applicable)? | — | — | + | |
|---|---|---|---|--|

Hail Aelerman : 6/10/97
primary review signature date

Will WZ
secondary review signature
PM Review 6A 6/10/97

6/10/97
date 06/10/97



June 13, 1997

Mr. Mark Porterfield
Kerr McGee Chemical Corporation
8000 W. Lake Mead
Henderson, NV 89128

Subject: Additional Analytical Work

Dear Mr. Porterfield:

As requested by Ms. Susan Crowley from your office, the following samples have been taken off hold and additional analyses requested:

Client Sample ID#	LAS Login #	Additional Analyses Requested
SB2-2D	L9157-42	Total Chromium, Soil pH*, Percent Solids
SB2-4D	L9157-44	Total Chromium, Soil pH*, Percent Solids
SB2-7D	L9157-50	Total Chromium, Soil pH*, Percent Solids
SB2-8D	L9157-51	Total Chromium, Soil pH*, Percent Solids
SB2-9D	L9157-52	Total Chromium, Soil pH*, Percent Solids
SB2-10D	L9157-56	Total Chromium, Soil pH*, Percent Solids
SB2-11D	L9157-61	Total Chromium, Soil pH*, Percent Solids
SB2-13D	L9157-60	Total Chromium, Soil pH*, Percent Solids

* Holding time for Soil pH expired 4/17/97



Mr. Mark Porterfield
Kerr McGee Chemical Corporation
June 13, 1997
Page 2.

Additionally, Ms. Crowley has requested copies of the analytical reports to be forwarded to the following individuals:

- 1) Rick Simon; ENSR
- 2) Tom Reed; Kerr McGee, Oklahoma City, OK
- 3) Russ Jones; Kerr McGee, Oklahoma City, OK

If you should have any questions concerning this or any other matter, please do not hesitate to call me at (702)361-3955, ext. 272.

Sincerely,

Laura Akenhead
Project Manager

I hereby authorize the additional analytical requested and release of data to the parties listed in this document. I understand the Soil pH will be performed on samples that have exceeded the method specified holding time.

Mark J. Porterfield
Signature

6-13-97
Date

Mark J. Porterfield
Print Name

Environmental Specialist
Title

SAMPLE RESULTS

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-10D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 92.78

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	49489	10	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-6

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-11D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.32

Constituent	Method	Batch	Value	MCL	RDL	DIT	Qual	Units	Analyzed	Lab ID
PH	9045	49489	10	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-7

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-13D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.01

Constituent	Method	Batch	Value	MCL	RDL	DIT	Qual	Units	Analyzed	Lab ID
PH	9045	49489	10.2	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-6

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-2D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 89.68

Constituent	Method	Batch	Value	MDL	RDL	DI1	Q12	Units	Analyzed	Lab ID
PH	9045	49489	9.6	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-1

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-4D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 91.17

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	49489	10.4	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-2

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-7D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 94.3

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	49489	10.5	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-3

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-8D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 87.67

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qcst	Units	Analyzed	Lab ID
PH	9045	49489	9.86	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-4

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-9D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.32

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PH	9045	49489	9.71	0.10	0.10	1	H	pH Units	11-JUN-97	L9647-5

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9647

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	SMP Result	DUP Result	Units	RPH	Data Date	RPO Limit
pH	49489	11-JUN-97	SB2-2D	L9647-1	49489DUP	9.60	9.60	pH Units	0		0.2

RPT NAME: genlongc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: Y UNITS: mg

pH - The duplicate precision for pH is the absolute difference.

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-10D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 92.78

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	49493	679	0.84	2.1	1		mg/kg	12-JUN-97	L9647-6

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-11D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.32

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	49493	107	0.86	2.1	1		mg/kg	12-JUN-97	L9647-7

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-13D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.01

Constituent	Method	Batch	Value	MDL	RDL	DLI	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	49493	23.5	0.83	2.1	1		mg/kg	12-JUN-97	L9647-8

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-2D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 89.68

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	49493	2130	0.88	2.2	1		mg/kg	12-JUN-97	L9647-1

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-4D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 91.17

Constituent	Method	Batch	Value	RDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	49493	78.7	0.83	2.1	1		mg/kg	12-JUN-97	L9647-2

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-7D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 94.3

Constituent	Method	Batch	Value	MDL	RDL	DIL	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	49493	181	0.82	2.1	1		mg/kg	12-JUN-97	L9647-3

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-8D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 87.67

Constituent	Method	Batch	Value	RDC	RDL	D13	Qual	Units	Analyzed	Lab ID
CHROMIUM	6010	49493	1780	0.92	2.3	1		mg/kg	12-JUN-97	L9647-4

LAS Laboratories, Inc.

METALS DATA REPORT

Account Name: Kerr-McGee * Henderson, NV
Project Name: KERR-MCGEE
Project Desc: Misc.

Client Sample ID: SB2-9D
Date Collected: 10-APR-97
Matrix: Soil

Login Number: L9647
Date Received: 10-JUN-97
Percent Solids: 93.32

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analysed	Lab ID
CHROMIUM	6010	49493	141	0.86	2.2	1		mg/kg	12-JUN-97	L9647-5

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L9647

Analyte	Batch ID	Date Analyzed	LAL ID	MR Result	MDL	RDL	Units	Data Qual.
CHROMIUM	49493	12-JUN-97	49493MB	<0.80	0.80	2.0	mg/kg	U

RPT NAME: gemnetqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

DUPLICATE DATA SUMMARY

Login/SDG Number: L9647

Analyte	Batch ID	Date Analyzed	Client ID	Lab ID	Sample ID	EMP Result	DUP Result	Units	RPP	Data Qual	RPP Limit
CHROMIUM	49493	12-JUN-97	SB2-2D	L9647-1	49493DUP	2130	1770	mg/kg	18.2		20

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L9647

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SNP Result	Known Value	Drills Rec	Data Qual	QC Limit#
CHROMIUM	49493	12-JUN-97	SB2-2D	L9647-1	49493MS	2070	2130	44.1	-140	a	75-125

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

a - The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.

LAS Laboratories, Inc.

LCS DATA SUMMARY

Login/SDG Number: L9647

Analyte	Batch ID	Date Analyzed	LAL ID	ICS Result	Known Value	Units	Date Rec	Data Qual	QC Limits
CHROMIUM	49493	12-JUN-97	49493LCSS	127.	115.	mg/kg	110		54-141.7
CHROMIUM	49493	12-JUN-97	49493LCSM	0.215	0.200	mg/l	108		80-120

RPT NAME: genmetqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N UNITS: mg

APPENDIX D

Metal Concentrations in Western United States Soils

APPENDIX D

Metal Concentrations in Soils

Site-specific background concentrations of constituents in soil at the KMCC Henderson facility were not determined as part of this assessment; however, Table D-1 presents the average concentration and/or natural ranges of metals in soil and other surficial materials in the Western United States (ASTM 1995).

TABLE D-1

Metal Concentrations in Western United States Soils

	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Lead (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Mercury (mg/kg)
Average concentration of surface soils in Western U.S. (mg/kg)	7.0	670	---	56	20	0.34	---	0.065
Range of average concentrations in soils (mg/kg)	<0.1- 97	70- 5,000	---	3- 2,000	<10- 7,000	<0.1- 4.3	---	<0.01- 4.6