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REPORTS

DATE:

11/93 - PHASE III

Brown McCarroll and Oaks Hartline

Hobbs, New Mexico

ENSR

Phase III Removal Action Report Former Exxon Chemical Company Facility 2607/2609 West Marland Boulevard Hobbs, New Mexico

ENSR Consulting and Engineering

November 1993

Document Number 1009-006-111

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Phase III Removal Action Report
Former Exxon Chemical Company Facility
2607/2609 West Marland Boulevard
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ENSR Consulting and Engineering

November 1993

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EXECUTIVE SUMMARY

ENSR Consulting and Engineering (ENSR) and its subcontractor, Forklift Enterprises, Inc., performed a Removal Action at the former Exxon Chemical Company facility located at 2607/2609 West Marland Boulevard in Hobbs, New Mexico in July and August 1993. The objective of the Removal Action was to remove hydrocarbon contaminated soils noted during previous investigations.

ENSR conducted a Phase I Preliminary Assessment of the West Marland facility in August 1991. As a result of the Phase I findings, ENSR conducted a Phase II Site Inspection of the site in January 1992. The objectives of the Site Inspection were to :

- identify the presence and nature of known or suspected contamination in areas identified during the Phase I Preliminary Assessment, and

- delineate the horizontal and vertical extent of contamination that may require removal.

The analytical results of the soil samples collected during the Site Inspection revealed several areas within the facility yard with Total Petroleum Hydrocarbon (TPH) concentrations exceeding the State of New Mexico action level of 100 mg/kg.

Based upon the findings of the Preliminary Assessment and the Site Inspection ENSR prepared a workplan for a Phase III Removal Action at the West Marland facility. The workplan entitled "Removal Action Workplan for Facility Formerly Leased by Exxon Chemical Company in Hobbs, New Mexico (2607/2609 West Marland Boulevard)" was prepared in February 1993 and was submitted to the State of New Mexico Oil Conservation Division (OCD) for approval. The OCD granted approval of the workplan in May 1993.

The objectives of the Removal Action were to:

- remove the contaminated soil identified during the Phase I Preliminary Assessment and the Phase II Site Inspection which exceeded the State of New Mexico action levels for TPH;

- dispose of the contaminated soil at a nearby permitted landfill;

- collect verification samples from the excavations to ensure that all contaminated soil above State of New Mexico action levels have been removed; and

- backfill and compact the excavations with clean soil and cover the affected area with a new caliche cover.

To accomplish these objectives, ENSR:

- removed approximately 2,850 cubic yards of hydrocarbon-contaminated soil from the yard area;

- disposed of the contaminated soil at the Controlled Recovery, Inc. landfill near Hobbs, New Mexico;

- collected verification samples from the excavations to confirm that the contaminated soil above State action levels had been removed; and

- backfilled and compacted the excavations with clean soil and covered the area with a new layer of caliche.

With OCD approval, a small amount of hydrocarbon contamination was left in place at the site. This contamination occurs within a layer of very dense, fractured native caliche beneath a suspected waste oil disposal pit that was encountered during the excavation of the previously identified contamination. The approximate depth of the contaminated caliche is 10 to 15 feet. This suspected waste oil disposal area was unknown to ENSR prior to the Removal Action field activities. The suspected waste oil pit was in the immediate vicinity of the former location of the above ground diesel storage tank.

1.0 INTRODUCTION

A Phase I Preliminary Assessment was conducted by ENSR at the West Marland site in August and September 1991. The Preliminary Assessment identified areas of the facility yard that required further investigation. Consequently, ENSR conducted a Phase II Site Inspection at the facility in January 1992. Based upon the findings of both the Preliminary Assessment and the Site Inspection, ENSR prepared a workplan for a Phase III Removal Action at the site. Following Oil Conservation Division (OCD) approval of the workplan in May 1993 ENSR and its subcontractor, Forklift Enterprises Inc., performed a Phase III Removal Action at the site in July and August 1993.

2.0 FACILITY BACKGROUND

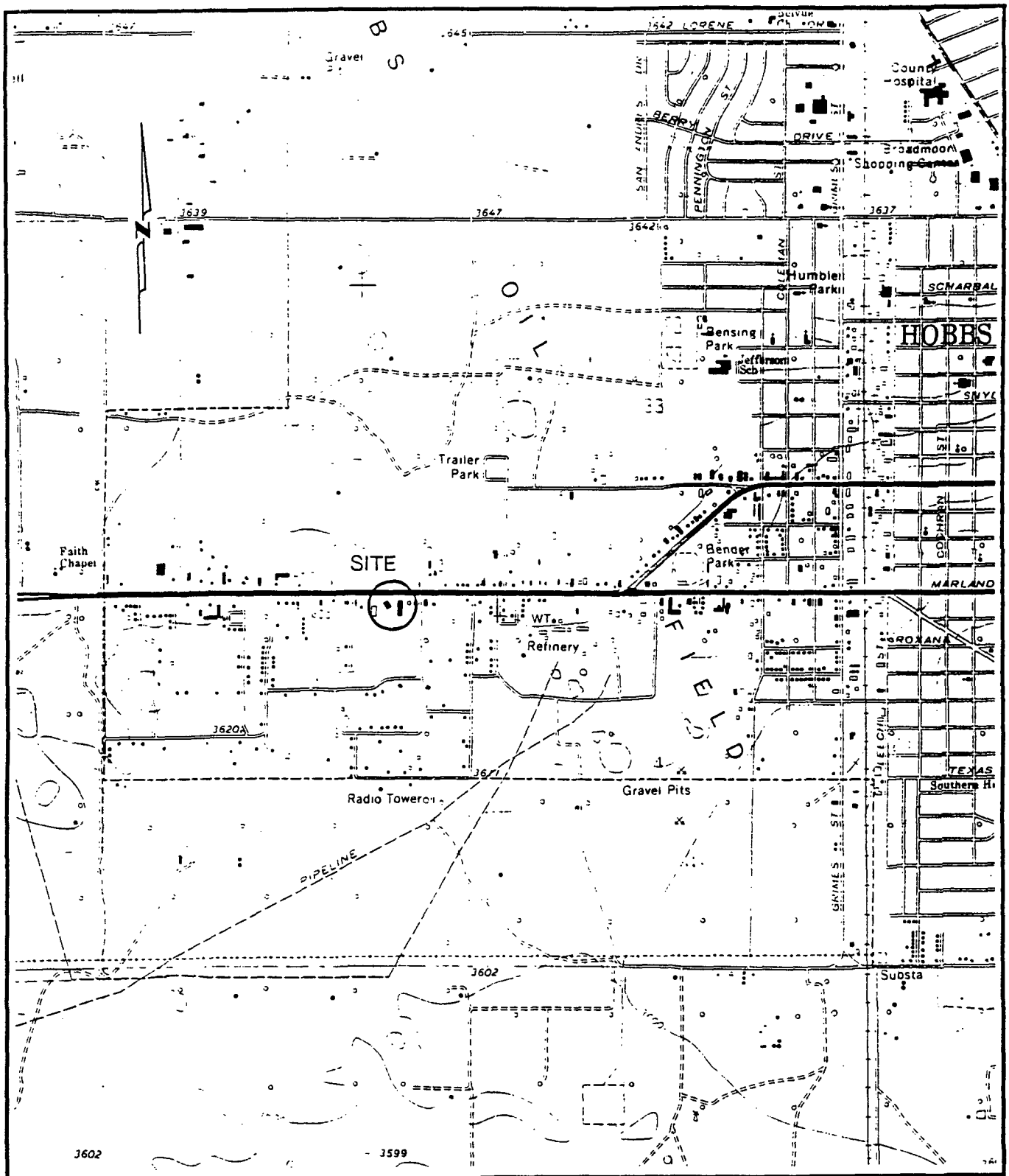
The subject facility is located at 2607/2609 West Marland Boulevard in Hobbs, New Mexico. The facility is currently owned and operated by Electro Support Systems, Inc. (ESS). ESS purchased the facility in January or February 1991 from Sweatt Construction Co. (Sweatt). Sweatt used the facility for office space, truck maintenance, and construction equipment storage. NL Industries (NL) leased the office suite at 2607 West Marland Boulevard intermittently from approximately 1980 to 1988. Exxon Chemical Company assumed this lease when it acquired NL properties in 1987.

The site is approximately 2.15 acres in size and consists of two buildings, a main building and a warehouse/assembly building, and a caliche-covered yard. The site location is shown on Figure 2-1. The site plot plan is shown on Figure 2-2. The main building consists of two office suites, 2607 and 2609 West Marland Boulevard, and is located in the northern portion of the property. The main building is surrounded on the north and east by an asphalt parking lot.The warehouse/assembly building is located along the west side of the property behind the main building. This building as well as the main building are currently in use by the present owner, Electro Support Systems, Inc.

During the period that Exxon leased the property, March 1988 to August 1989, the facility was used for the storage and distribution of oilfield treating chemicals. Exxon maintained seven 750-gallon above ground storage tanks on the property for the storage of the oilfield chemicals. The tanks were installed with secondary containment system. Chemical product was also stored in drums. Typically, 250 drums of product were stored on pallets in the yard. No blending or processing of these chemicals occurred at the site.

2.1 Previous Investigations

ENSR conducted a Phase I Preliminary Assessment in 1991 at the West Marland site. Assessment activities included site visits, interviews with personnel that worked at the facility, facility records review, and state agency or EPA files research. The results were presented to Brown McCarroll and Oaks Hartline in a June 1992 report entitled "Phase I Environmental Due



0 2000 4000

SCALE IN FEET

REFERENCE: U.S.G.S. Quadrangle Map for Hobbs West, New Mexico, 1979.

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FIGURE 2-1
SITE LOCATION MAP
FORMER EXXON CHEMICAL CO. FACILITY
HOBBS, NEW MEXICO

DRAWN BY: SH	DATE: 9-14-93	PROJECT NUMBER: 1009-006-111
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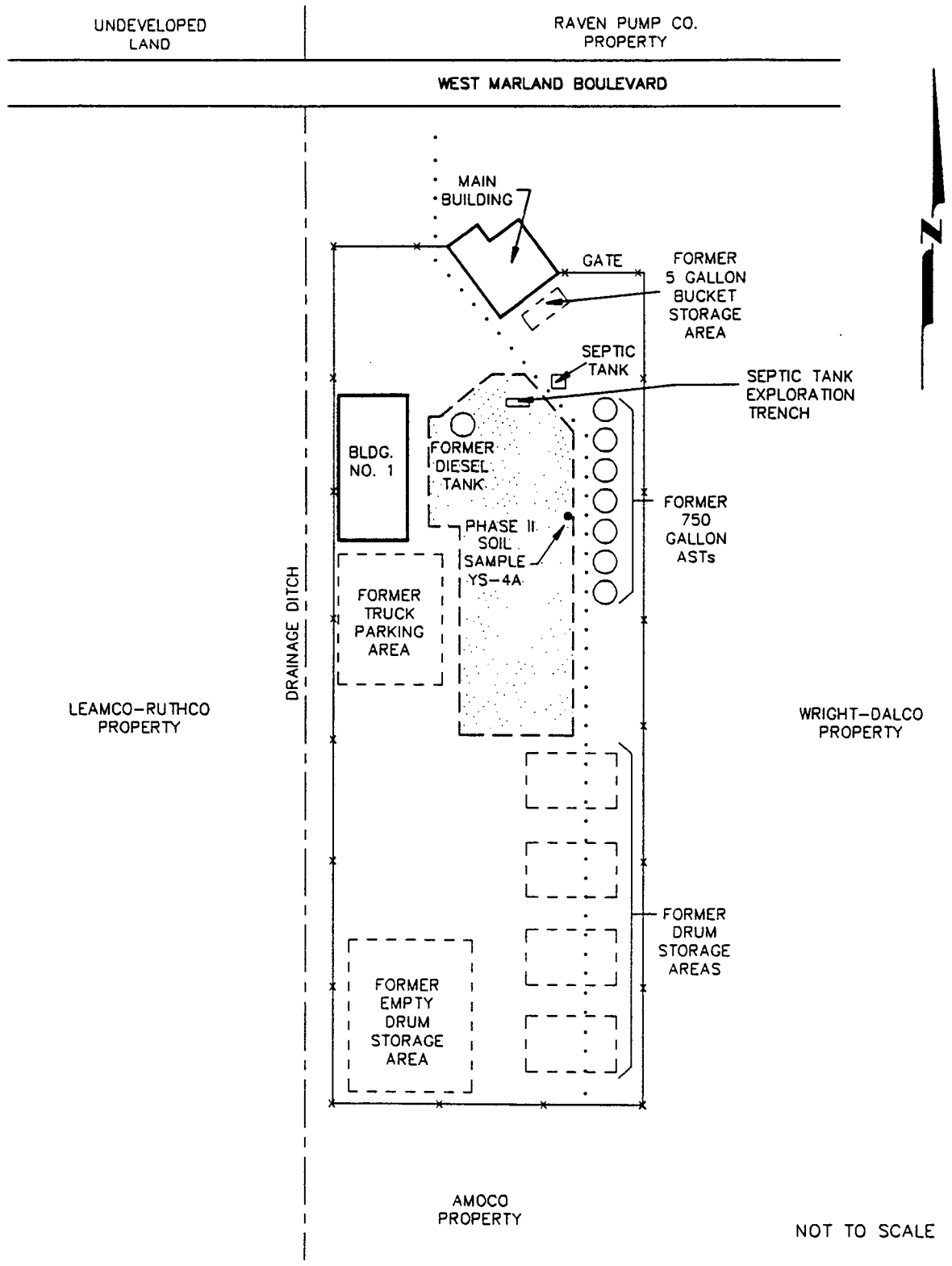

LEGEND

- EXISTING STRUCTURE
- FENCE
- GAS PIPELINE
- MAIN EXCAVATION AREA

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FIGURE 2-2
SITE PLOT PLAN
FORMER EXXON CHEMICAL CO. FACILITY
HOBBS, NEW MEXICO

DRAWN: LG/SF/SH	DATE: 11-12-92	PROJECT NUMBER:
APPV'D:	REVISED 09-16-93	1009-006-111

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Diligence Assessment of Exxon Chemical Company 2607/2609 West Marland Boulevard, Hobbs, New Mexico."

The Preliminary Assessment indicated selected areas of the facility yard that required additional investigation. As a result, ENSR conducted a Phase II Site Inspection at the site in January 1992. The findings were presented to Brown McCarroll and Oaks Hartline in a June 1992 report entitled " Phase II Site Inspection, Former Exxon Chemical Company Facility, 2607/2609 West Marland Boulevard, Hobbs, New Mexico."

The Site Inspection identified, through soil sample analysis and visual observation, several areas of hydrocarbon contamination within the facility yard. Soil sample analysis confirmed the presence of TPH contamination above the State action level of 100 mg/kg in those areas. The contaminated areas are:

- area of grid sample YS-4A (TPH-1,710 mg/kg),
- former above ground diesel tank area (TPH-100 mg/kg to 406 mg/kg), and
- septic tank exploration trench (TPH-9,558 mg/kg).

In addition, volatile organic compounds above detection limit were identified in soil samples from the area of the former above ground diesel tank and the septic tank exploration trench. Naphthalene, a semi-volatile organic compound, was identified in the soil sample from the septic tank exploration trench. The above areas are shown on Figure 2-2.

3.0 FIELD ACTIVITIES

ENSR and its subcontractor, Forklift Enterprises Inc., performed the Removal Action at the West Marland site in July and August 1993.

3.1 Program Objectives

The objectives of the Removal Action were to excavate, remove, and dispose of contaminated soils in the facility's yard area that exceeded the State of New Mexico Oil Conservation Division (OCD) action levels for Total Petroleum Hydrocarbons (TPH).

The Removal Action followed the OCD-approved workpolan and OCD guidelines for the clean-up of hydrocarbon-contaminated soils.

The OCD clean-up levels employed during this Removal Action were:

- TPH - 100 mg/kg (EPA 8015(m), EPA 418.1), and
- BETX (Total) - 100 mg/kg (TCLP, 8020).

3.2 Removal Action Activities

3.2.1 Excavation and Sampling in Impacted Areas

Hydrocarbon contaminated soils in the facility yard were removed from the following areas:

- area of grid sample YS - 4A,
- area of former above ground diesel tank, and
- area of septic exploration trench.

These impacted areas were excavated based on the analytical results of soil samples collected during the Phase II Site Inspection as well physical evidence of contamination noted during sample collection activities. Contamination was shown to exist from just beneath the caliche surface in all three areas to a depth of approximately 1.5 feet at the former location of the above ground diesel tank. The three areas are shown on Figure 2-2.

During excavation of the above referenced areas, the hydrocarbon contamination was observed to be widespread and not confined to the three individual areas. Removing all the contaminated soil eventually resulted in one large excavation which included the above areas. Within this

excavation, in the vicinity of the former location of the above ground diesel tank, an area of heavily hydrocarbon contaminated soil was observed. The physical evidence (odor, staining) of contamination in this new area was much greater than that observed throughout the rest of the contaminated yard areas and appeared to extend to a greater depth than the other contaminated soils. This area is believed to have been a type of waste oil disposal pit or holding tank. This area was treated separately from the main excavation for sampling purposes. Verification samples were collected from both the main excavation and the waste oil pit excavation prior to backfilling. A front end loader and a backhoe were utilized to remove the contaminated soil.

The excavated areas are shown on Figure 3-1. The analytical results of the soil samples collected during the Removal Action are presented in Section 5.0.

3.2.1.1 Main Excavation

The main excavation in the facility's yard area was irregularly shaped and measured approximately 190 feet by 52 feet . The excavation included the three areas identified during the Site Inspection to have hydrocarbon-contaminated soil exceeding State action levels. The depth of the main excavation (excluding the waste oil pit area) was 3 feet to 4 feet. During excavation activities, hydrocarbon staining and/or odor was observed to exist from just beneath the caliche surface to a depth of approximately 2 feet throughout the area. The odor varied from a diesel or oil-like odor in the former diesel tank area in the north and western portions of the excavation to a solvent-like odor in the eastern and southern portions of the excavation.

Initially, 10 composite verification samples (Ex-1A through Ex-1J) were collected from the excavation sidewalls and 8 (Floor-1A through Floor-1H) were collected from the excavation floor. Two of the wall samples, Ex-1B and Ex-1F, were found to have TPH concentrations above the 100 mg/kg action level. The BETX concentrations of the sidewall verification samples were negligible. The wall area where Ex-1B was collected was re-excavated and, in the process, more contaminated soil was observed. Several feet of sidewall were removed before encountering soil that appeared to be uncontaminated. A second composite verification sample, Ex-2B, was collected with the analytical results indicating the contamination had been removed. The area of wall sample Ex-1F could not be re-excavated due to the close proximity of a high-pressure natural gas line that crosses the property. However, this wall area was reesampled just prior to the backfilling of the excavation. Analysis of the second sample, Ex-2F, revealed the TPH concentration to be below detection limit.

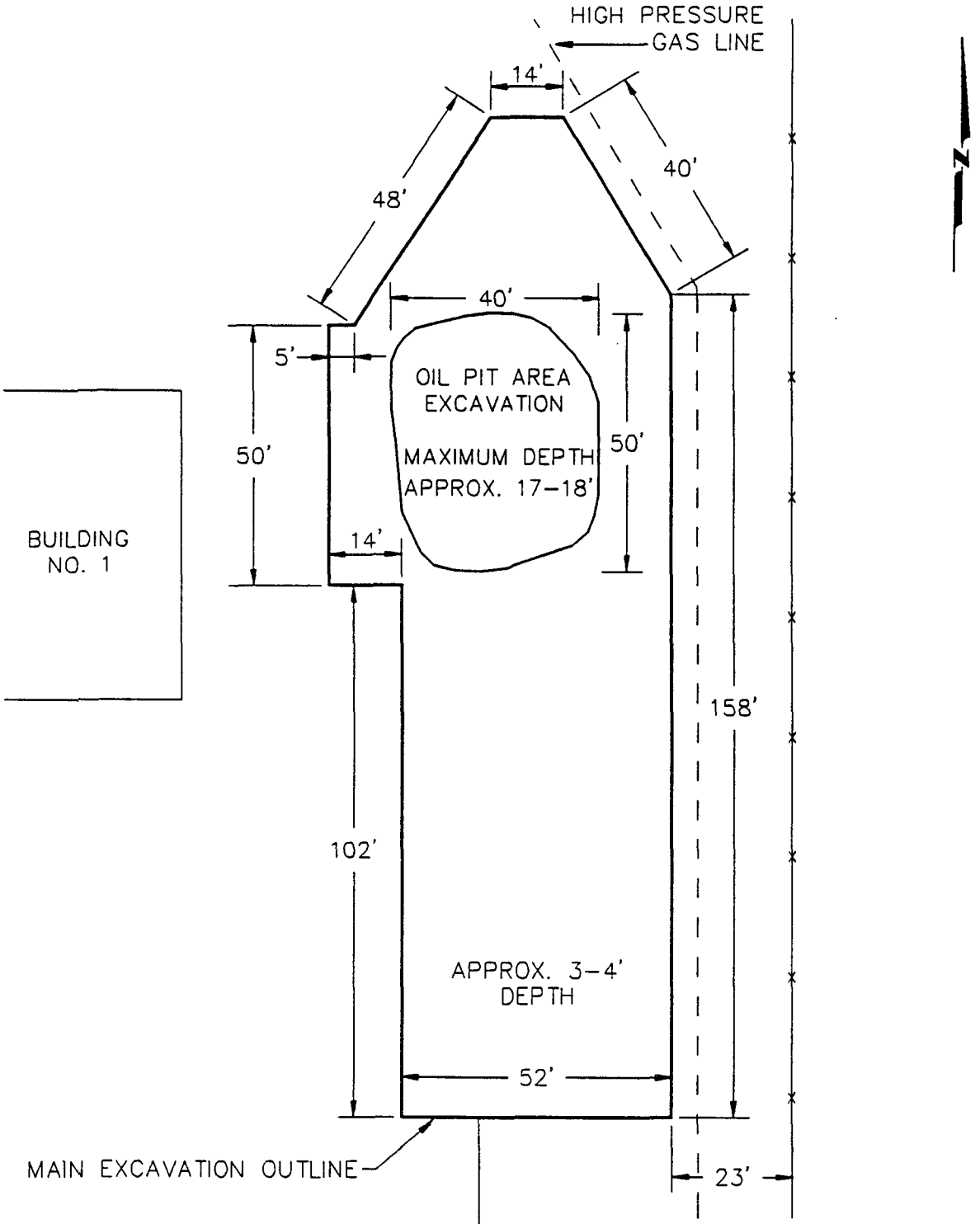

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FIGURE 3–1
EXCAVATION OUTLINES
FORMER EXXON CHEMICAL CO. FACILITY
HOBBS, NEW MEXICO

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APPV'D:	REVISED:	1009–006–111	

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Six of the eight initial excavation floor verification samples, Floor-1A, 1B, 1C, 1E, 1F, and 1G, were found to have TPH concentrations above the State action level. BETX concentrations of the floor samples were negligible. These areas were re-excavated approximately six inches and then resampled. Analysis of the second round of verification samples indicated all contamination in excess of the action levels were removed. The main excavation verification sample locations are shown on Figure 3-2. The analytical results of the main excavation verification samples are presented on Table 5 - 1.

3.2.1.2 Oil Pit Area Excavation

During removal of the contaminated soil from the main excavation, an area of heavily hydrocarbon-contaminated soil was observed in the former vicinity of the above ground diesel tank. Even though this area was within the main excavation, it was treated as a separate excavation as the contamination was much greater. Stained soil was initially excavated down to the top of a dense layer of native caliche at a depth of approximately 9 to 10 feet below the yard surface or 6 to 7 feet below the main excavation floor. The caliche was highly fractured with dark hydrocarbon staining within the fractures. Petroleum odor from the contaminated caliche ranged from moderate to strong. At this point, composite verification soil samples were collected from each of the excavation walls. Analysis of the sidewall verification samples, Oil Pit-1A through Oil Pit-1D, revealed the TPH concentrations to be below detection limit with BETX concentrations below to slightly above detection limit. A composite soil sample was also collected from the oil pit floor to characterize the contamination within the caliche. Analysis of the floor sample, Oil Pit-1E, indicated the TPH concentration to be 1,276 mg/kg with benzene, ethylbenzene, toluene, and xylene concentrations of 0.010 mg/kg, 0.099 mg/kg, 0.085 mg/kg, and 0.201 mg/kg, respectively. The analytical results of the oil pit area verification samples are presented on Table 5-2.

A drill rig was mobilized to the site to drill boreholes into the caliche to determine the depth of the contamination within the fractured caliche. Two boreholes were drilled, one in the northern portion and one in the eastern portion of the excavation. The southern and western portions of the oil pit floor did not appear to have significant contamination. Continuous sampling of the boreholes revealed the contamination to extend to a depth of 5 feet below the oil pit excavation floor in the northern portion of the excavation and to a depth of 3 feet below the excavation floor in the eastern portion of the excavation. The area of the two boreholes were excavated to depths of 4 to 6 feet in the eastern and northern portions of the excavation, respectively. While the borehole areas were excavated rnore contamination was encountered extending towards the center of the excavation. The caliche became very dense in the center of the excavation floor and the need for additional heavy equipment to break up the contaminated rock was apparent.

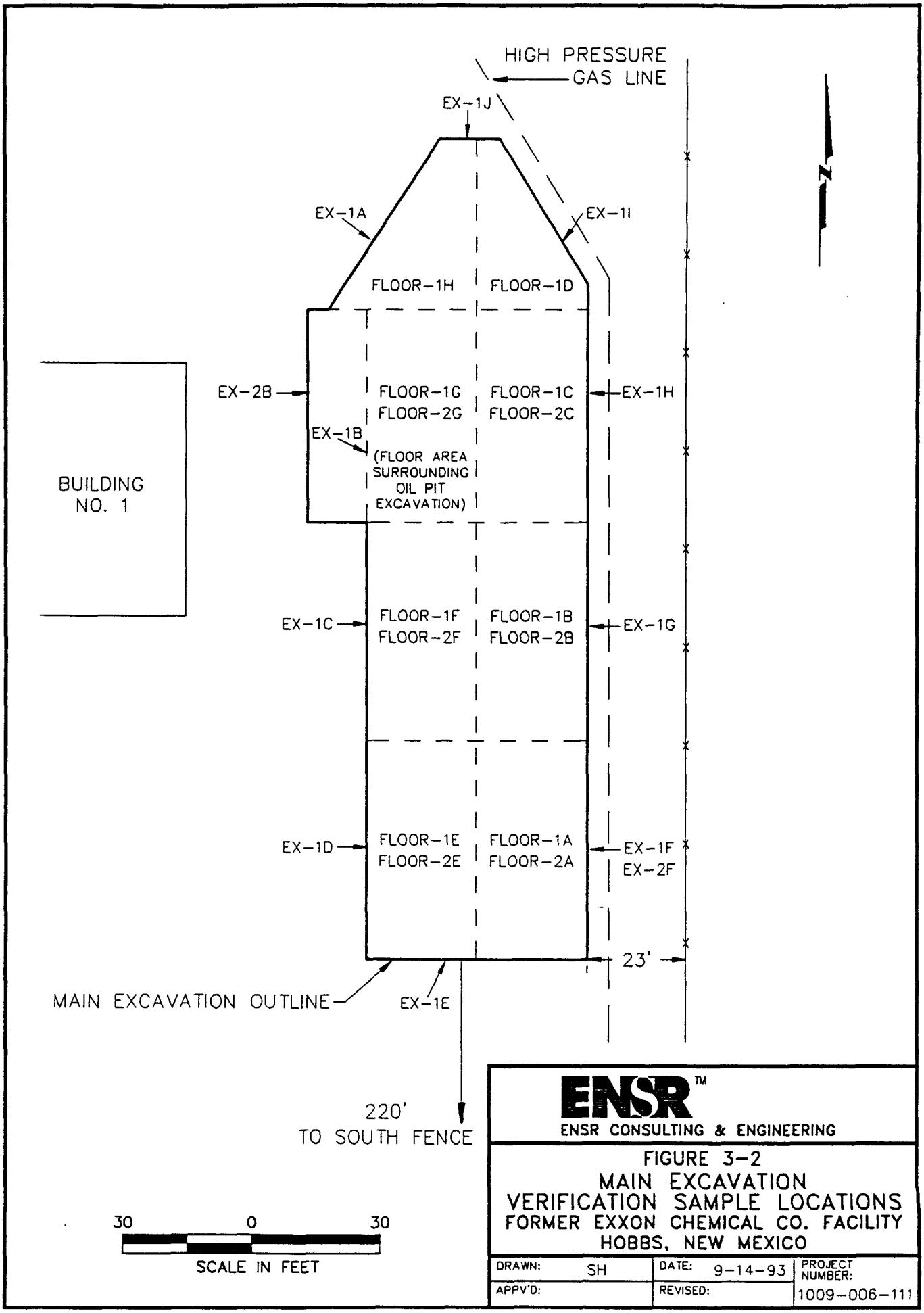

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FIGURE 3-2
MAIN EXCAVATION
VERIFICATION SAMPLE LOCATIONS
FORMER EXXON CHEMICAL CO. FACILITY
HOBBS, NEW MEXICO

DRAWN: SH	DATE: 9-14-93	PROJECT NUMBER:
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A D6 bulldozer with a claw attachment was brought to the site to attempt ripping up the rock. This attempt was not effective. Another attempt to remove the contaminated caliche was made by excavating the softer caliche below the hard layer in the borehole area with a backhoe and then trying to break the hard rock into the hole. This also proved to be ineffective.

At this point, OCD, Exxon, and ENSR held a discussion regarding how to proceed since conventional methods to remove the contaminated caliche had proven to be unsuccessful. Because the volume of contamination within the caliche appeared small relative to the amount of contaminated soil removed above it, the OCD allowed the remaining contamination to remain in place. The OCD requested that, prior to backfilling, a sample of the remaining contamination be collected. The sample, Oil Pit Floor-1, was analyzed for total volatile organic compounds, total semi-volatile organic compounds, total RCRA metals, and TPH. Analysis of the sample revealed the following list of contaminants and their concentrations which are listed below.

Total Volatiles

Benzene	0.006 mg/kg
Ethylbenzene	0.007 mg/kg
Toluene	0.006 mg/kg
Total Xylenes	0.026 mg/kg

The detection limit for total volatiles is 0.005 mg/kg.

Total Semi-volatiles

Naphthalene	1.934 mg/kg

The detection limit for total semi-volatiles is 1.000 mg/kg.

Total RCRA Metals

Arsenic	4.0 mg/kg
Barium	153.0 mg/kg
Chromium	2.0 mg/kg
Lead	19.0 mg/kg
Selenium	1.0 mg/kg

TPH	20,357 mg/kg

The analytical results of the Oil Pit Floor-1 sample are presented on Table 5-3. The oil pit area sample locations are shown on Figure 3-3.

Following sampling, the waste oil pit area as well as the main excavation was backfilled with clean soil.

3.2.2 Storage of Excavated Soils

During excavation activities, most of the contaminated soil was loaded directly onto the dump trucks for transportation to the landfill.Periodically, excavated contaminated soils were stored on site when insufficient dump trucks were available to transport the soil directly to the landfill. The soil was placed on and covered by plastic sheeting until the soil could be transported to the landfill.

3.2.3 Sampling and Disposal of Excavated Soils

At the request of the OCD, a waste classification sample was collected from the contaminated areas prior to the Removal Action field activities. The sample, MR-1, was analyzed for:

- TCLP Volatile Organic Compounds,
- TCLP Semi - Volatile Organic Compounds,
- TCLP Metals, and
- RCRA Characteristics (Corrosivity, Reactivity, Flashpoint, ph).

Analysis indicated that the soil was non-hazardous.

OCD permission was sought to dispose of the excavated soils at the Controlled Recovery, Inc. landfill near Hobbs, New Mexico. The OCD approved disposal of the soil at the landfill when it approved the Removal Action workplan in May 1993. Approximately 2,850 cubic yards of contaminated was disposed of at the landfill during the Removal Action.

3.2.4 Restoration of the Yard Area

The excavated areas were backfilled and compacted with clean sand from a local sandpit. The backfill sand was sampled for TPH and BETX prior to backfilling. The analytical results of the backfill samples are presented on Table 5-1.

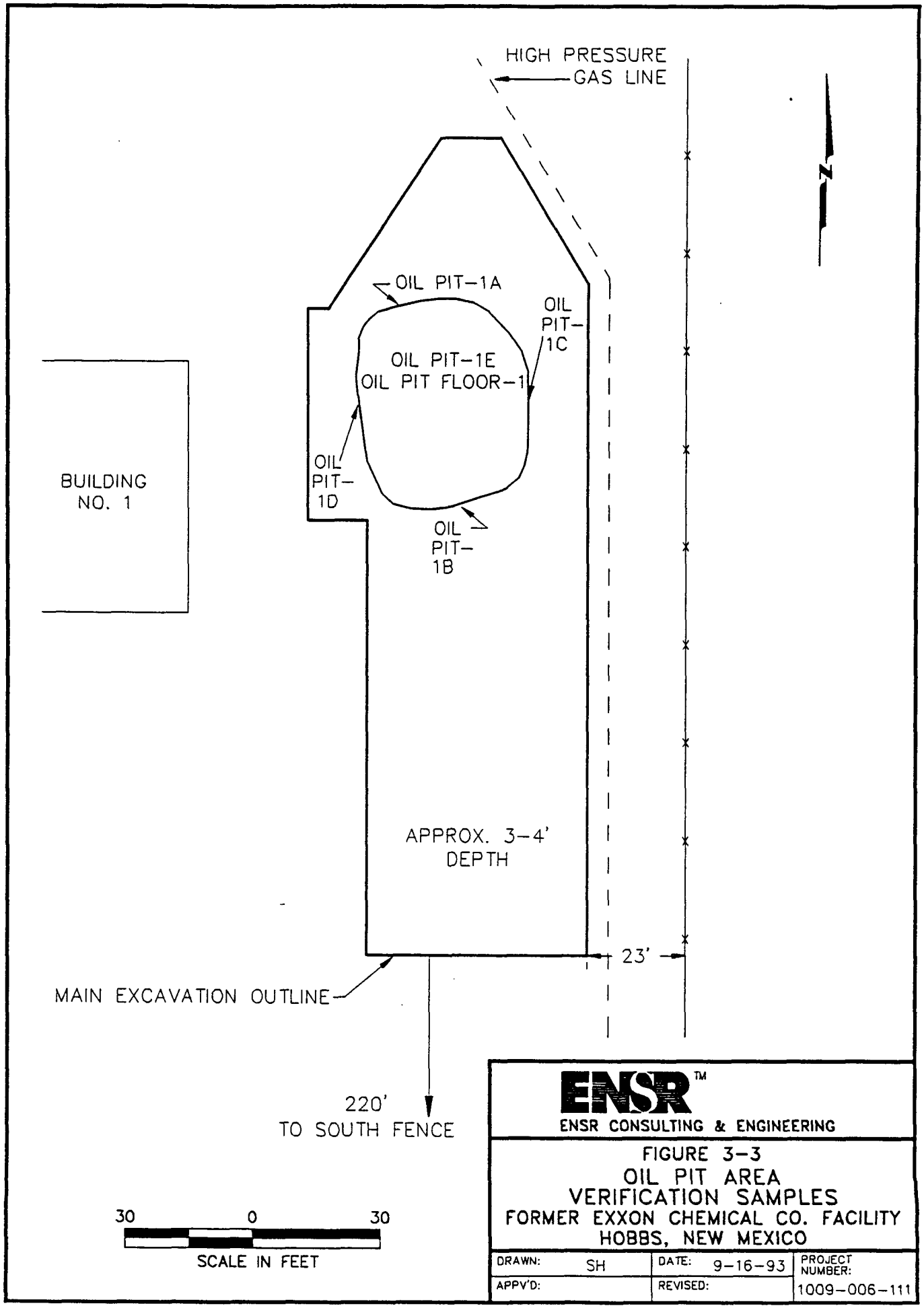

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FIGURE 3-3
OIL PIT AREA
VERIFICATION SAMPLES
FORMER EXXON CHEMICAL CO. FACILITY
HOBBS, NEW MEXICO

DRAWN: SH	DATE: 9-16-93	PROJECT NUMBER:
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Following placement of the backfill sand in the excavation, 6 to 8 inches of clean caliche from a local caliche pit was spread and compacted across the backfilled area. This restored the site to its original appearance.

4.0 FIELD AND LABORATORY QA/QC CONTROL

4.1 Sample Handling and Preservation Methods

Once samples were collected, they were placed in appropriate pre-cleaned jars. Labels, written in indelible ink, were then affixed to the sample containers.

Samples were wrapped in protective material to prevent breakage and placed in rigid, thermally insulated coolers. Sealed bags of ice were used to ensure proper preservation. Samples were sent to Analytikem laboratory in Houston, Texas and to Environ Express laboratory in La Porte, Texas.

4.2 Decontamination of Sampling Equipment

Sampling equipment was decontaminated between each sample using the following procedure:

- Scrubbing equipment with solution of alconox (non-phosphate detergent) and de-ionized (D.I.) water,
- Rinsing equipment with D.I. water, and
- Allowing equipment to air dry.

By removing any contamination from the equipment between samples, the decontamination procedure served to prevent sample cross-contamination.

4.3 Chain-of-Custody Control and Record Keeping Procedures

Proper chain-of-custody (COC) procedures were followed. A COC form was completed and shipped with the samples to the laboratory. The COC form served to document sample custody from the time of collection to its receipt by the laboratory.

All COC forms are presented along with the complete laboratory data packages in Appendix A. All field activities were documented in a log dedicated to this Removal Action. The logbook is stored in the project files at the ENSR Houston, Texas office.

4.4 Field QA/QC Sampling

QA/QC sampling in the field consisted of duplicate soil sampling and collection of an equipment blank sample.

Two duplicate soil samples were collected during the Removal Action. The purpose of duplicate samples is to verify the accuracy of the analytical instruments used to analyze the samples at the laboratory. The duplicate samples were collected by placing the soil to be sampled in a clean stainless steel mixing bowl and mixing the material thoroughly. The soil was then split between two sample jars. The duplicate samples collected at the site were:

- Verification sample Ex-1K, a duplicate of Ex-1I, and
- Verification sample Oil Pit Floor-1, a duplicate of Oil Pit Floor-2.

Both duplicate samples were analyzed for the same parameters (TPH and BETX) as the samples they duplicated.

The equipment blank sample, Eq. Blk.-1, was also analyzed for TPH and BETX. The equipment blank sample was collected by pouring de-ionized water over a freshly decontaminated stainless steel hand trowel during soil sample collection. The rinsate was collected directly into the sample jars. Equipment blank sampling verifies the efficacy of the sampling equipment decontaminating procedure.

4.5 Laboratory QA/QC Methods

Laboratory quality control measures included the use of internally generated spike samples, and other instrument or calibration checks. The quality control measures are:

Check Standards

Check standards, at concentrations representing the midpoint of the calibration curve, were analyzed at a frequency of once every 10 to 15 samples. Results were used to verify the standard calibration curve used.

Spiked Samples

One out of every 10 samples was spiked with a known quantity of standard. For these spikes, two aliquots of a sample were taken; one was spiked and both were extracted and analyzed. The results were used to detect sample matrix interferences.

Duplicates

One duplicate analysis was performed for every 10 samples.

Method Blanks

One method blank was analyzed for every 10 samples.

Laboratory QA/QC results are included in the laboratory data packages in Appendix A.

5.0 ANALYTICAL RESULTS

This section presents the analytical results of the samples collected during the Removal Action at the former Exxon facility. This section also presents the analytical results of the waste classification sample collected prior to the Removal Action. The complete laboratory data packages with the analytical methods used and all laboratory QA/QC procedures are listed in Appendix A.

5.1 Analytical Data

Table 5-1 presents the analytical results for the main excavation verification soil samples.

Table 5-2 presents the analytical results of the oil pit area verification soil samples.

Table 5-3 presents the analytical results of the sample collected of the contamination remaining in the fractured caliche in the oil pit area excavation floor.

Table 5-4 presents the analytical results of the waste classification sample collected prior to the Removal Action field activities.

5.2 Summarized Analytical Results

TPH

With the exception of the two soil samples collected from the oil pit floor, all final verification soil samples were below the clean-up level of 100 mg/kg for TPH. The TPH concentrations ranged from below the detection limit to 82 mg/kg in main excavation floor sample Floor-1H. The two oil pit floor samples, Oil Pit-1E and Oil Pit Floor-1, had TPH concentrations of 1,276 mg/kg and 20,357 mg/kg respectively.

BETX

All of the final verification soil samples, including the oil pit floor samples, were below the clean-up level of 100 mg/kg for total BETX. The total BETX concentrations ranged from below detection limit to 0.395 mg/kg in Oil Pit Floor-1.

OTHER ANALYTICAL RESULTS

Analysis of the Oil Pit Floor-1 soil sample found the contaminants listed below above detection limit:

METALS

Arsenic	4.0 mg/kg
Barium	153.0 mg/kg
Chromium	2.0 mg/kg
Lead	19.0 mg/kg
Selenium	1.0 mg/kg

The detection limit for the above contaminants was 0.1 mg/kg.

SEMI-VOLATILE COMPOUNDS

Naphthalene	1.934 mg/kg

The detection limit for naphthalene was 1.00 mg/kg.

TABLE 5-1

Summary of Analytical Results
Main Excavation Verification Soil Samples

TPH/BETX Analysis													
				TPH mg/kg		Benzene mg/kg		Ethyl Benzene mg/kg		Toluene mg/kg		Xylenes mg/kg	
Sample ID	Date	Sample Type C - Composite G - Grab	Depth	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit
Ex-1B	8-2-93	C	0' - 3'	648	25	0.002	0.001	0.001	0.001	0.002	0.001	0.007	0.003
Ex-2B[1]	8-2-93	C	0' - 3'	<25	25	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.003	0.003
Ex-1D	8-2-93	C	0' - 3'	—	—	0.001	0.001	—	—	—	—	—	—
Ex-1F[2]	8-2-93	C	0' - 3'	1776	25	—	—	—	—	—	—	—	—
Ex-1G	8-2-93	C	0' - 3'	50	25	—	—	—	—	—	—	—	—
Ex-1I	8-2-93	C	0' - 3'	43	25	—	—	—	—	—	—	—	—
Ex-1J	8-2-93	C	0' - 3'	43	25	—	—	—	—	—	—	0.003	0.003
Floor - 1A	8-3-93	C	3'	144	25	—	—	—	—	—	—	—	—
Floor - 2A[3]	8-9-93	C	3.5'	<25	25	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.003	0.003
Floor - 1B	8-3-93	C	3'	518	25	—	—	—	—	—	—	—	—
Floor - 2B[4]	8-9-93	C	3.5'	<25	25	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.003	0.003
Floor - 1C	8-3-93	C	3'	908	25	—	—	—	—	—	—	—	—
Floor - 2C[5]	8-5-93	C	3.5'	—	—	0.001	0.001	—	—	—	—	—	—
Floor - 1D	8-3-93	C	3'	81	25	0.004	0.001	—	—	—	—	—	—
Floor - 1E	8-3-93	C	3'	322	25	—	—	—	—	—	—	—	—
Floor - 2E[6]	8-9-93	C	3.5'	<25	25	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.003	0.003

TABLE 5-1 (Cont'd)

Summary of Analytical Results
Main Excavation Verification Soil Samples

TPH/BETX Analysis													
				TPH mg/kg		Benzene mg/kg		Ethyl Benzene mg/kg		Toluene mg/kg		Xylenes mg/kg	
Sample ID	Date	Sample Type C - Composite G - Grab	Depth	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit
Floor - 1F	8-3-93	C	3'	1077	25	0.004	0.001	—	—	—	—	—	—
Floor - 2F[7]	8-5-93	C	3.5'	—	—	0.001	0.001	—	—	—	—	—	—
Floor - 1G	8-3-93	C	3'	388	25	—	—	—	—	—	—	—	—
Floor - 2G[8]	8-5-93	C	3.5'	—	—	0.002	0.001	—	—	—	—	—	—
Floor - 1H	8-3-93	C	3'	82	25	—	—	—	—	—	—	—	—
Backfill - 2	8-18-93	C	-	—	—	0.001	0.001	—	—	—	—	—	—

[1] Resample of Ex-1B area following additional excavation.
[2] Area not reexcavated due to proximity of natural gas line.
[3] Resample of Floor - 1A area after additional excavation.
[4] Resample of Floor - 1B area after additional excavation.
[5] Resample of Floor - 1C area after additional excavation.
[6] Resample of Floor - 1E area after additional excavation.
[7] Resample of Floor - 1F area after additional excavation.
[8] Resample of Floor - 1G area after additional excavation.

Table 5-2

Summary of Analytical Results
Oil Pit Area Verification Soil Samples

TPH/BETX Analytsis													
Sample ID	Date	Sample Type C - Composite G - Grab	Depth	TPH mg/kg		Benzene mg/kg		Ethyl Benzene mg/kg		Toluene mg/kg		Xylenes mg/kg	
				Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Level Det.
Oil Pit - 1B	8-4-93	C	3' - 9'	---	---	0.005	0.001	—	—	—	—	—	—
Oil Pit - 1D	8-4-93	C	3' - 9'	---	---	0.006	0.001	—	—	—	—	—	—
Oil Pit - 1E[1]	8-4-93	C	9'	1276	25	0.010	0.001	0.099	0.001	0.085	0.001	0.201	0.003

[1]Oil Pit Floor not reexcavated.

Table 5-3
Summary of Analytical Results
Composite Sample of Contamination Remaining in Fractured Caliche in Oil Pit Floor

Sample ID: Oil Pit Floor - 1 **Date Sampled: 8-18-93**

Analytical Parameter	Concentration	Detection Limit
Total RCRA Metals (mg/kg)		
Arsenic	4.0	0.1
Barium	153.0	0.1
Chromium	2.0	0.1
Lead	19.0	0.1
Selenium	1.0	0.1
Total Volatiles (mg/kg)		
Benzene	0.006	0.005
Toluene	0.006	0.005
Ethylbenzene	0.007	0.005
Xylenes	0.026	0.005
Total Semi-volatiles (mg/kg)		
Naphthalene	1.934	1.000
TPH (mg/kg)	20,357	25
TPH Duplicate (Oil Pit Floor - 2)	30,793	25

Table 5-4
Summary of Analytical Results
In-Situ Composite Waste Classification Sample
Date Sampled: 9-3-92

Analytical Parameters	Regulatory Threshold Limit	Sample ID: MR-1	
TCLP Metals (mg/l)		**Level Detected**	**Detection Limit**
Barium	100.0	1.2	0.5

Notes:

1. No TCLP volatile or semivolatile compounds were detected above detection limit.

2. RCRA characteristics were within regulatory limits.

Analytical Data Packages

1009-006-111
BACKFILL-1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: BACKFILL-1 Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20608

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 02:38
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 05:03
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT-1A

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT-1A Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20609

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 03:13
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 05:52
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT-1B

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT-1B Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20610

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.005	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 03:48
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 06:42
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT-1C

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT-1C Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20611

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 04:23
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 07:31
Standard : DIESEL

John E. Keller

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1009-006-111
OIL PIT-1D

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT-1D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20612

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.006	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 04:58
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 08:20
Standard : DIESEL

John E. Keller

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1009-006-111
OIL PIT-1E

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Customer: ENSR Sample ID: OIL PIT-1E Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20613

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 04 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4061

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.010	< 0.001	0.001
Toluene	0.099	< 0.001	0.001
Ethylbenzene	0.085	< 0.001	0.001
Xylenes	0.201	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 06:09
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	1,276	< 25	25

Analyst: J.M. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 10:50
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/05/93	SAMPLES IN SET: 10	FREQUENCY: 1/20
SAMPLES:	20440, 20541-20542, 20608-20614	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	82	82	89	89	8	20	51-107
TOLUENE	< 1	100	85	85	93	93	9	20	44-108
ETHYLBENZENE	< 1	100	87	87	95	95	9	20	47-111
XYLENES	< 3	300	263	88	291	97	10	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/06/93	SAMPLES IN SET: 6	FREQUENCY: 1/20

SAMPLES:	20608-20613

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	102	102

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	102	103	1

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

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ENVIRON
Express Laboratories

CHAIN OF CUSTODY RECORD

Page 1 of 1

ENVIRON EXPRESS LABORATORIES

401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Marland	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR C+E
Sampler's Name (PRINT): JS Kuykendall
Sampler's: (Signature) JS Kuykendall
LABORATORY ANALYSIS Reference EPA Method #

Results to: Scott Kuykendall phone 5209900 fax 5206802
Sampler Remarks:
Address: 3000 Richmond
TPH by 8015
City: Houston TX 77098
Lab Remarks:
Invoice to: SAME. No. ( )

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH ~~418.1~~ 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310
20608	Backfill-1	8-4-93 1015		✓	4oz	Soil	4°C	✓	✓			
20609	O.I Pit-1A	8-4-93 1232		✓	4oz	Soil	4°C	✓	✓			
20610	O.I Pit-1B	8-4-93 1256		✓	4oz	Soil	4°C	✓	✓			
20611	O.I Pit-1C	8-4-93 1240		✓	4oz	Soil	4°C	✓	✓			
20612	O.I Pit-1D	8-4-93 1246		✓	4oz	Soil	4°C	✓	✓			
20613	O.I Pit-1E	8-4-93 1250		✓	4oz	Soil	4°C	✓	✓			

DUE: 8-6-93
INV # 4061

Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact
JS Kuykendall	8-4-93 1330		8/5 1200	
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009-006-111
FLOOR-1A

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1A Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20570

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 18:12
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	144	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 04:07
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR-1B

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1B Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20571

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 18:48
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	518	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 06:35
Standard : DIESEL

John E. Keller

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1009-006-111
FLOOR-1C

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Customer: ENSR Sample ID: FLOOR-1C Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20572

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 19:25
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	908	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 07:25
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR-1D

Express Laboratories

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Customer: ENSR Sample ID: FLOOR-1D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20573

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.004	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 20:01
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	81	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 04:56
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR-1E

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1E Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20574

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 20:37
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	322	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 05:46
Standard : DIESEL

John E. Keller

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1009-006-111
FLOOR-1F

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1F Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20575

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.004	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted:08/04/93 Date Analyzed:08/04/93 @ 21:12
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	1,077	< 25	25

Analyst: J.M. Date Extracted:08/05/93 Date Analyzed:08/05/93 @ 08:15
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR-1G

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1G Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20576

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 21:48
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	388	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 12:29
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR-1H

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR-1H Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20577

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 22:24
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	82	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 11:36
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/04/93	SAMPLES IN SET: 20	FREQUENCY: 1/20

SAMPLES:	20531-20540, 20569-20577, 20580

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	88	88	82	82	7	20	51-107
TOLUENE	< 1	100	91	91	85	85	7	20	44-108
ETHYLBENZENE	< 1	100	95	95	87	87	9	20	47-111
XYLENES	< 3	300	281	94	261	87	8	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/03/93	SAMPLES IN SET: 16	FREQUENCY: 1/20

SAMPLES:	20507-20509, 20512-22524

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	95	95

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	95	95	0

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * |[D - A]| / [B]

% RELATIVE DIFFERENCE [H] = 200 * |[F - G]| / [F + G]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TCLP)	METHOD: 1311/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 08/06/93	SAMPLES IN SET: 16	FREQUENCY: 1/20

SAMPLES:	19969, 19982, 20202, 20531-20542, 20569

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	10	100

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	10	10	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON
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Fax No. (713) 471-5821

Page 1 of 1

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Marland	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR CAE	Sampler's Name (PRINT): JS Kuykendall
Results to: Scott Kuykendall phone 520 9900 fax 520 6802	Sampler's: (Signature) JS Kuykendall
Address: 3000 Richmond	Sampler Remarks: TPH by 8015
City: Houston Tx 77098	Lab Remarks:
Invoice to: Same No. ( )	

LABORATORY ANALYSIS
Reference EPA Method #

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1	Total Lead	TCLP Lead 1311	EPTOX Lead 1310					
20569	XMBA-2D (Dal Poso)	8-3-93 0920		✓	4oz x2	Soil	4°C	✓	✓		✓						
20570	Floor-1A	8-3-93 1235		✓	4oz	Soil	4°C	✓	✓								
20571	Floor-1B	8-3-93 1240		✓	4oz	Soil	4°C	✓	✓								
20572	floor-1C	8-3-93 1244		✓	4oz	Soil	4°C	✓	✓								
20573	Floor-1D	8-3-93 1248		✓	4oz	Soil	4°C	✓	✓								
20574	floor-1E	8-3-93 1252		✓	4oz	Soil	4°C	✓	✓								
20575	floor-1F	1256 8-3-93		✓	4oz	Soil	4°C	✓	✓								
20576	floor-1G	1300 8-3-93		✓	4oz	Soil	4°C	✓	✓								
20577	Floor-1H	8-3-93 1305		✓	4oz	Soil	4°C	✓	✓								DUE: 8-5-93 INV. # 4052.

Relinquished by: (Signature) JS Kuykendall	Date: 8-3-93 Time: 1430	Received By: (Signature)	Date: 8/4 Time: 1015	Intact
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009-006-111
EX-2B

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-2B Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20639

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 20:51
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 08:59
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2A

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR 2A Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20640

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 21:26
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 03:01
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2B

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR 2B Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20641

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 22:01
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 03:50
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2C

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR 2C Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20642

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 22:36
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 07:10
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2E

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR 2E Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20643

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 23:10
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 04:40
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2F

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: FLOOR 2F Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20644

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/08/93 Date Analyzed: 08/08/93 @ 23:45
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 05:30
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
FLOOR 2G

Express Laboratories

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Customer: ENSR Sample ID: FLOOR 2G Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20645

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 05 / 93

Received: 08/ 06 / 93 Reported: 08/ 09 / 93 Invoice No.: 4066

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.002	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/09/93 Date Analyzed: 08/09/93 @ 00:20
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/07/93 Date Analyzed: 08/07/93 @ 06:20
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/09/93	SAMPLES IN SET: 19	FREQUENCY: 1/20

SAMPLES:	20251, 20324, 20335, 20341, 20345-20346, 20348, 20390
	20392, 20568, 20639-20645, 20662-20663

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	71	71	71	71	0	20	51-107
TOLUENE	< 1	100	73	73	73	73	0	20	44-108
ETHYLBENZENE	< 1	100	73	73	75	75	3	20	47-111
XYLENES	< 3	300	228	76	231	77	1	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/07/93	SAMPLES IN SET: 7	FREQUENCY: 1/20

SAMPLES:	20639-20645

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	96	96

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	96	96	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON
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Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Macland	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR C&E
Sampler's Name (PRINT): JS Kuykendall II
Sampler's: (Signature) JS Kuykendall

Results to: Scott Kuykendall phone 520 9900 fax 520 6802
Address: 3000 Richmond
City: Houston TX 77098
Invoice to: Same No. ( )

Sampler Remarks: TPH by 8015
Lab Remarks:

LABORATORY ANALYSIS
Reference EPA Method #

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310				
20639	EX-2B	8-5-93 0700		✓	4oz	Soil	4°C	✓	✓							
20640	Floor-2A	8-5-93 1415		✓	4oz	Soil	4°C	✓	✓							
20641	Floor-2B	8-5-93 1409		✓	4oz	Soil	4°C	✓	✓							
20642	Floor-2C	8-5-93 1415		✓	4oz	Soil	4°C	✓	✓							
20643	Floor-2E	8-5-93 1419		✓	4oz	Soil	4°C	✓	✓							
20644	Floor-2F	8-5-93 1423		✓	4oz	Soil	4°C	✓	✓							
20645	Floor-2G	8-5-93 1430		✓	4oz	Soil	4°C	✓	✓							
																DUE: 8-9-93
																INV. # 4066

Relinquished by: (Signature) JS Kuykendall	Date: 8-5-93 Time: 1550	Received By: (Signature) RWheeler	Date: 8/6 Time: 1000	Intact	
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact	

1009-006-111
EX-1A

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1A Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20512

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted:08/03/93 Date Analyzed:08/03/93 @ 22:29
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted:08/04/93 Date Analyzed:08/04/93 @ 07:12
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1B

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1B Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20513

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.002	< 0.001	0.001
Toluene	0.001	< 0.001	0.001
Ethylbenzene	0.002	< 0.001	0.001
Xylenes	0.007	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/03/93 Date Analyzed: 08/03/93 @ 23:40
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	648	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 08:03
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1C

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1C Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20514

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 09:47
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/03/93 Date Analyzed: 08/03/93 @ 22:50
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1D

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1D Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20515

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 00:52
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/03/93 Date Analyzed: 08/03/93 @ 23:41
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1E

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1E Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20516

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 01:27
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 00:31
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1F

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1F Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20517

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 02:03
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	1,776	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 01:22
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1G

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1G Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20518

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 02:38
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	50	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 02:12
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1H

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1H Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20519

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 03:14
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 03:03
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1I

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1I Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20520

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 03:49
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	43	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 03:53
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1J

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1J Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20521

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 04:24
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	43	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 04:43
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EX-1K

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-1K Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20522

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 05:00
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 05:32
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
EQU. BLANK

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EQU. BLANK Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20523

Sample Matrix: WATER Sample Depth: _____ Sampled: 08/ 02 / 93

Received: 08/ 03 / 93 Reported: 08/ 04 / 93 Invoice No.: 4044

Test Method 5030/8020	Result PPB (ug/l)	Blank PPB (ug/l)	Detection Limit PPB (ug/l)
Benzene	< 1	< 1	1
Toluene	< 1	< 1	1
Ethylbenzene	< 1	< 1	1
Xylenes	< 3	< 3	3

Analyst: J.M. Date Extracted: 08/03/93 Date Analyzed: 08/03/93 @ 17:03
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/03/93 Date Analyzed: 08/03/93 @ 19:26
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/03/93	SAMPLES IN SET: 15	FREQUENCY: 1/20
SAMPLES:	20507-20509, 20512-20522, 20524	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	91	91	94	94	3	20	51-107
TOLUENE	< 1	100	93	93	97	97	4	20	44-108
ETHYLBENZENE	< 1	100	93	93	99	99	6	20	47-111
XYLENES	< 3	300	286	95	299	100	5	20	43-119

% MS RECOVERY [D] = 100 * ¦[C - A]¦ / [B]

% MSD RECOVERY [F] = 100 * ¦[E - A]¦ / [B]

% RELATIVE DIFFERENCE [G] = 200 * ¦[D - F]¦ / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 602	MATRIX: WATER
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPB (ug/l)
DATE: 08/02/93	SAMPLES IN SET: 6	FREQUENCY: 1/20
SAMPLES:	20482-20483, 20501, 20510-20511, 20523	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB (ug/l)	[B] SPIKE ADDED PPB (ug/l)	[C] MS ANALYSIS PPB (ug/l)	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB (ug/l)	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	97	97	91	91	6	20	49-117
TOLUENE	< 1	100	100	100	94	94	6	20	53-117
ETHYLBENZENE	< 1	100	105	105	96	96	9	20	53-119
XYLENES	< 3	300	306	102	289	96	6	20	56-116

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/03/93	SAMPLES IN SET: 16	FREQUENCY: 1/20

SAMPLES:	20507-20509, 20512-22524

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	95	95

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	95	95	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER. Ph.D

ENVIRON
Express Laboratories

CHAIN OF CUSTODY RECORD

ENVIRON EXPRESS LABORATORIES

401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1007-006-111	Exxon - Hobbs	West Maryland	☐ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation:	Sampler's Name (PRINT): Scott Kuykendall	LABORATORY ANALYSIS Reference EPA Method #
E.L.S.E. C+E	Sampler's: (Signature)	

Results to: Scott Kuykendall	phone 520-9500	Sampler Remarks:
	fax 520-6502	
Address: 3000 Richmond		TPH by 8015
City: Houston TX 77098		Lab Remarks:
Invoice to: Same	No. ( )	

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.l)	Sample Type (Liquid, Sludge, Etc.)	Preser-vative	BTEX 8020	TPH 418.1 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310					
20512	Ex-1A	8-2-93 1338		✓	4oz	Soil	4°C	✓	✓								
20513	Ex-1B	8-2-93 1347		✓	4oz	Soil	4°C	✓	✓								
20514	Ex-1C	8-2-93 1346		✓	4oz	Soil	4°C	✓	✓								
20515	Ex-1D	8-2-93 1351		✓	4oz	Soil	4°C	✓	✓								
20516	Ex-1E	8-2-93 1357		✓	4oz	Soil	4°C	✓	✓								
20517	Ex-1F	8-2-93 1403		✓	4oz	Soil	4°C	✓	✓								
20518	Ex-1G	8-2-93 1408		✓	4oz	Soil	4°C	✓	✓								
20519	Ex-1H	8-2-93 1412		✓	4oz	Soil	4°C	✓	✓								
20520	Ex-1I	8-2-93 1416		✓	4oz	Soil	4°C	✓	✓								DUE: 8-4-93 INV # 4044
20521	Ex-1J	8-2-93 1420		✓	4oz	Soil	4°C	✓	✓								

Relinquished by: (Signature)	Date: 8-2-93 Time: 1600	Received By: (Signature)	Date: 8/3 Time: 1200	Intact
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

CHAIN OF CUSTODY RECORD

Page 1 of 2

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Marland	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation:	Sampler's Name (PRINT):	LABORATORY ANALYSIS Reference EPA Method #
ENSR C & E	Scott Kuykendall	
	Sampler's: (Signature)	

Results to: Scott Kuykendall phone 520-990[illegible] fax 520-1807

Sampler Remarks:

Address: 3000 Richmond

TPH by 8015

City: Houston TX 77098

Lab Remarks:

Invoice to: Same No. ( )

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.l)	Sample Type (Liquid, Sludge, Etc.)	Preser-vative	BTEX 8020	TPH 418.1 / 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310
20522	Ex-1K	8-2-93 1425		✓	4 oz	Soil	4°C.	✓	✓			
20523	G. BLK-1	8-2-93 1435	✓		30 ml Amb	Water	4°C HCl	✓	✓			

DUE 8-4-93
INV. # 4044

Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact
Scott Kuykendall	8-2-93 1600	Richardson	8/3 1200	—
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009-006-111
EX-2F

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EX-2F Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21024

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 00:50
Standard : 8020 - 5,2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/19/93 Date Analyzed: 08/19/93 @ 23:12
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT FLOOR 1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT FL 1 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21025

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	20,357	< 25	25

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 15:45
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT FLOOR 1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT FL 1 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21025

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 25 / 93 Invoice No.: 4120

TOTAL RCRA METALS

Metals	Method	Results mg/l	Detection Limit mg/kg	Max Conc.
Arsenic	7061	4.0	0.1	5.0
Barium	7080	153.0	0.1	100.0
Cadmium	7130	< 0.1	0.1	1.0
Chromium	7190	2.0	0.1	5.0
Lead	7420	19.0	0.1	5.0
Mercury	7470	< 0.01	0.01	0.2
Selenium	7741	1.0	0.1	1.0
Silver	7760	< 0.1	0.1	5.0

Analyst: J.K. Date Extracted: 07/30/93 Date Analyzed: 07/30/93 @ 11:02

John E. Keller

John E. Keller, Ph.D.

Environ Express Laboratories
401 North 11th St.
La Porte, Texas 77571

CONSCI

Attn: Steve Henning

Invoice #:

Certificate #: 30819010
Sample ID: 21025 Oil Pit Floor-1 (See Note Below)*
Date Received: 08/19/93

BASE/NEUTRAL & ACID EXTRACTABLES (METHOD 625)

Base/Neutral Extractables

	Concentration mg/L	Detection Limit mg/L
Bis(2-chloroethyl)ether	ND	1.000
1,3 Dichlorobenzene	ND	1.000
1,4 Dichlorobenzene	ND	1.000
1,2 Dichlorobenzene	ND	1.000
Bis(2-chloroisopropyl)ether	ND	1.000
Hexachloroethane	ND	1.000
N-Nitrosodi-n-propylamine	ND	1.000
Nitrobenzene	ND	1.000
Isophorone	ND	1.000
Bis(2-Chloroethoxy)methane	ND	1.000
Hexachlorocyclopentadiene	ND	1.000
1,2,4 Trichlorobenzene	ND	1.000
Naphthalene	1.934	1.000
Hexachlorobutadiene	ND	1.000
Acenaphthylene	ND	1.000
Dimethyl phthalate	ND	1.000
2,6 Dinitrotoluene	ND	1.000
Acenaphthene	ND	1.000
2-Chloronaphthalene	ND	1.000
2,4 Dinitrotoluene	ND	1.000
Fluorene	ND	1.000
4-Chlorophenyl phenyl ether	ND	1.000
Diethyl phthalate	ND	1.000

* Sample Matrix is a heavy hydrocarbon oil mix. This matrix prohibits low detection limits.

Michael A. Sonner II, Ph.D.

CONSCI

Environ Express Laboratories
Certificate #: 30819010
Sample ID: 21025 Oil Pit Floor-1
Date Received: 08/19/93

BASE/NEUTRAL & ACID EXTRACTABLES (METHOD 625)

Base/Neutral Extractables

	Concentration mg/Kg	Detection Limit mg/Kg
4-Bromophenyl phenyl ether	ND	1.000
Hexachlorobenzene	ND	1.000
Phenanthrene	ND	1.000
Anthracene	ND	1.000
Di-n-butylphthalate	ND	1.000
Fluoranthene	ND	1.000
Pyrene	ND	1.000
Benzidine	ND	1.000
Benzyl Butyl phthalate	ND	1.000
Chrysene	ND	1.000
Benzo(a)anthracene	ND	1.000
3,3-Dichlorobenzidine	ND	1.000
Di-n-octylphthalate	ND	1.000
Bis(2-ethylhexyl)phthalate	ND	1.000
Benzo(b)fluoranthene	ND	1.000
Benzo(k)fluoranthene	ND	1.000
Benzo(a)pyrene	ND	1.000
Indeno(1,2,3-cd)pyrene	ND	1.000
Dibenzo(a,h)anthracene	ND	1.000
Benzo(ghi)perylene	ND	1.000
N-Nitrosodimethylamine	ND	1.000
N-Nitrosodiphenylamine	ND	1.000

Michael A. Sommer II, Ph.D.

CONSCI

Environ Express Laboratories
Certificate #: 30819010
Sample ID: 21025 Oil Pit Floor-1
Date Received: 08/19/93

Acid Extractables

	Concentration mg/Kg	Detection Limit mg/Kg
Phenol	ND	1.000
2-Chlorophenol	ND	1.000
2-Nitrophenol	ND	1.000
2,4-Dimethylphenol	ND	1.000
2,4-Dichlorophenol	ND	1.000
4-Chloro-3-methylphenol	ND	1.000
2,4,6-Trichlorophenol	ND	1.000
2,4-Dinitrophenol	ND	1.000
4-Nitrophenol	ND	1.000
2-Methyl-4,6-dinitrophenol	ND	1.000
Pentachlorophenol	ND	1.000

Surrogate Recoveries:

2-Fluorophenol	100 %
Phenol-d5	26 %
Nitrobenzene	65 %
2-Fluorobiphenyl	83 %
Terphenyl-d14	125 %

Michael A. Sommer II, Ph.D.

CONSCI

Environ Express Laboratories
Certificate #: 30819010
Sample ID: 21025 Oil Pit Floor-1
Date Received: 08/19/93

VOLATILE ORGANICS (METHOD 624)

Parameter

	Concentration mg/Kg	Detection Limit mg/Kg
Chloromethane	ND	0.005
Bromomethane	ND	0.005
Vinyl chloride	ND	0.005
Chloroethane	ND	0.005
Methylene chloride	ND	0.005
Trichlorofluoromethane	ND	0.005
1,1-Dichloroethene	ND	0.005
1,1-Dichloroethane	ND	0.005
trans-1,2-Dichloroethene	ND	0.005
Chloroform	ND	0.005
1,2 Dichloroethane	ND	0.005
1,1,1-Trichloroethane	ND	0.005
Carbon tetrachloride	ND	0.005
Bromodichloromethane	ND	0.005
1,2-Dichloropropane	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Trichloroethene	ND	0.005
Benzene	0.006	0.005
1,1,2-Trichloroethane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
2-Chloroethylvinyl ether	ND	0.005
Bromoform	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	0.006	0.005
Chlorobenzene	ND	0.005
Ethyl benzene	0.007	0.005
Dibromochloromethane	ND	0.005
1,2-Dichlorobenzene	ND	0.005
1,3-Dichlorobenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005
m+p-Xylene	0.018	0.005
o-Xylene	0.008	0.005

Michael A. Sommer II, Ph.D.

1009-006-111
BACKFILL 2

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: BACKFILL 2 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21026

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 00:41
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/19/93 Date Analyzed: 08/19/93 @ 20:39
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
BACKFILL 3

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: BACKFILL 3 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21027

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 01:16
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/19/93 Date Analyzed: 08/19/93 @ 21:31
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
BACKFILL 4

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: BACKFILL 4 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21028

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 01:51
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/19/93 Date Analyzed: 08/19/93 @ 22:21
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
OIL PIT FLOOR 2

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: OIL PIT FL 2 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 21029

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 18 / 93

Received: 08/ 19 / 93 Reported: 08/ 20 / 93 Invoice No.: 4120

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	30,793	< 25	25

Analyst: J.M. Date Extracted: 08/20/93 Date Analyzed: 08/20/93 @ 16:38
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/19/93	SAMPLES IN SET: 16	FREQUENCY: 1/20
SAMPLES:	20942, 20944-20949, 21017-21021, 21024, 21026-21028	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	79	79	73	73	8	20	51-107
TOLUENE	< 1	100	72	72	68	68	6	20	44-108
ETHYLBENZENE	< 1	100	71	71	67	67	6	20	47-111
XYLENES	< 3	300	212	71	201	67	6	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/19/93	SAMPLES IN SET: 6	FREQUENCY: 1/20

SAMPLES:	21024-21029

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	103	103

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	103	103	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TOTAL)	METHOD: 3050/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/24/93	SAMPLES IN SET: 1	FREQUENCY: 1/20

SAMPLES:	21025

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 1	10	10	9	90

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	9	9	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS:TOTAL CHROME	METHOD: 3050/7190	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/24/93	SAMPLES IN SET: 1	FREQUENCY: 1/20

SAMPLES:	21025

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 1	10	10	8	80

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	8	8	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON
Express Laboratories

CHAIN OF CUSTODY RECORD

Page 1 of 1

ENVIRON EXPRESS LABORATORIES

401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West MARLAND	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR C + E
Sampler's Name (PRINT): JS KUYKENDALL
Sampler's: (Signature) JS Kuykendall
LABORATORY ANALYSIS Reference EPA Method #

Results to: Scott Kuykendall phone 520 9900 fax 520 6802
Sampler Remarks: TPH by 8015
Address: 3000 Richmond
City: Houston TX 77098
Lab Remarks:
Invoice to: SAME No. ( )

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310					
21024	EX-2F	8-18-93 1110		✓	4oz	Soil	4°C	✓	✓								
21025	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C										Total Volatiles
	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C										Total Semi-Volatiles
	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C										Total RCRA Metals
	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C		✓								& TPH
	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C										EXTRA
✓	Oil Pit floor-1	8-18-93 1140		✓	4oz	Soil	4°C										EXTRA
21026	Backfill-2	8-18-93 1400	✓		4oz	Soil	4°C	✓	✓								
21027	Backfill-3	8-18-93 1405	✓		4oz	Soil	4°C	✓	—								DUE: 8-20-93 INV.# 4120
21028	Backfill-4	8-18-93 1410	—		4oz	Soil	4°C	✓	—								

Relinquished by: (Signature)	Date: 8-18-93 Time: 1630	Received By: (Signature)	Date: 8/19 Time: 1100	Intact
JS Kuykendall		R Hooker		—
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

CHAIN OF CUSTODY RECORD

Page 1 of 1

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Marland	☒ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation:	Sampler's Name (PRINT):	LABORATORY ANALYSIS Reference EPA Method #
ENSR C+E	J S Kuykendall	
	Sampler's: (Signature)	

Results to:	phone / fax	Sampler Remarks:
Scott Kuykendall	phone 520 9900 / fax 520 9902	
Address: 3000 Richmond		TPH by 8015
City: Houston Texas 77098		Lab Remarks:
Invoice to: Same	No. ( )	

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.l)	Sample Type (Liquid, Sludge, Etc.)	Preser-vative	BTEX 8020	TPH ~~418.1~~ 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310				
21029	Oil Pit Floor-2	8-18-93 1140		4	4oz	Soil	4°C	~~X~~	V							No BETX 05
																DUE: 8-20-93 INV.# 4120

Relinquished by: (Signature)	Date: 8-18-93 Time: 630	Received By: (Signature)	Date: 8/19 Time: 1100	Intact
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

AnalytiKEM *An American NuKEM Company*

AnalytiKEM Inc.
2925 Richmond Avenue
Houston, TX 77098
713/520-1495
713/520-9900
Fax: 713/523-7107

October 2, 1992

ENSR
3000 Richmond
Houston, TX 77098

Attention: Scott Kuykendall

Attached are reports of chemical analyses of samples received September 9, 1992. These analyses are:

Count	Test Code	Test Name	Test Method	Sampled	Matrix
3	Ag - -TCL-HOU	TCLP SILVER	EPA SW-846: 7760, ATOMIC ABSORPTION		TCLP_EXT
3	As - -TCI-HOU	TCLP ARSENIC	EPA SW-846: 6010, ICP		TCLP_EXT
3	BNA - - -HOU	SEMIVOLATILE ORGANICS	EPA SW-846: 3520,8270, LLE,GC/MS		TCLP_EXT
3	Ba - -TCL-HOU	TCLP BARIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	CORR -S- -HOU	CORROSIVITY ON SOLID	EPA SW-846: 1110, NACE STEEL COUPON	09/03/92	SOIL
3	Cd - -TCL-HOU	TCLP CADMIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	Cr - -TCL-HOU	TCLP CHROMIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	FP -S- -HOU	IGNITABILITY ON SOLID	EPA SW-846: 1010, PENSKY MARTIN	09/03/92	SOIL
3	H2S -S-REA-SWL	HYDROGEN SULFIDE, REACTIVE/SLD	EPA SW-846: 7.3.4.2, 9030	09/03/92	SOIL
3	HCN -S-REA-SWL	HYDROCYANIC ACID, REACTIVE/SLD	EPA SW-846: 7.3.3.2, 9010	09/03/92	SOIL
3	Hg - -TCL-HOU	TCLP MERCURY	EPA SW-846: 7470, COLD VAPOR		TCLP_EXT
3	Pb - -TCL-HOU	TCLP LEAD	EPA SW-846: 6010, ICP		TCLP_EXT
3	Se - -TCI-HOU	TCLP SELENIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	VOA - - -HOU	VOLATILE ORGANIC ANALYSES	EPA SW-846: 8240, GC/MS		TCLP_EXT
3	pH -S-COR-HOU	pH CORROSION ON SOLID	EPA SW-846: 9045	09/03/92	SOIL

Data contained in this report reflect a full quality control review and have met all applicable standards established by AnalytiKEM. AnalytiKEM quality assurance protocols are in accordance with EPA guidelines.

Should you have any questions, do not hesitate to contact me at (713) 520-1495.

LAB NO. A8972 CONT.

EXX22849

Very Truly Yours,

AnalytiKEM

Larry Frantz
Lab Director

LF/lis

Enclosures: Analytical Summary, Analytical Report, Chain of Custody, Sample Receipt Checklist, Quality Control Logs, ANALYTIKEM ID #A8972-1T, ANALYTIKEM ID #A8972-2T, ANALYTIKEM ID #A8972-3T, SWL CERT. #92-09-118-01, SWL CERT. #92-09-118-02, SWL CERT. #92-09-118-03

LAB NO. A8972
PROJECT 1009-001-150 EXXON

AnalytiKEM *An American NuKEM Company*

AnalytiKEM Inc.
2925 Richmond Avenue
Houston, TX 77098
713/520-1495
713/520-9900
Fax: 713/523-7107

SAMPLE DISPOSAL LETTER

DATE: 10/02/92

TO: Scott Kuykendall

FROM: Larry Frantz, Lab Director

PROJ. NO.: 1009-001-150 LAB NO.: A8972 RECEIVED:09/09/92
EXXON

It is the policy of AnalytiKEM Laboratories to dispose of unanalyzed portions of samples thirty days following submittal of the hard copy data package. Samples from lab number A8972 are due for disposal on November 6, 1992.

Please indicate your preference for disposal below and return this form to Lab Receiving personnel by October 23, 1992. **No response will be interpreted as permission to dispose of the samples on November 6, 1992 and charge your project accordingly.**

( )A. AnalytiKEM's preferred policy for disposal is to dispose of unused samples, including samples not analyzed, by drumming and transporting by a federally licensed hazardous waste transportation firm at a cost of $6.50/Field ID. **In an effort to present all relative charges in a timely manner, disposal charges will appear upon this project's billing summary unless this letter is returned with instructions indicating otherwise.**

( )B. AnalytiKEM will return remaining samples, including samples not authorized for analysis to the originating site at our expense.
ADDRESS OF THE
ORIGINATING SITE: _____

_____

( )C. AnalytiKEM will hold your sample at a cost of $20.00/Field ID per quarter for refrigerated storage or $6.50/Field ID per quarter for ambient storage. The project will be billed in advance each quarter based upon the number of samples in storage at the beginning of the quarter. The minimum storage fee per project will be $50.00 to cover administrative costs.

( ) Refrigerated ( ) Ambient ____ Number of Samples or ALL

Should you have any questions, do not hesitate to contact me at (713) 520-1495.
SIGNATURE: _____
LF/lis

LAB NO. A8972
PROJECT 1009-001-150 EXXON

EXX22851

BQ921A3B13

AnalytiKEM

An American NuKEM Company

2925 RICHMOND AVENUE HOUSTON, TX 77098 (713) 520-1495 FAX: (713) 523-7107

Analysis Request and Chain of Custody Record

Project no.: 9-001-150160 | Client/Project Name: EXXON | Project Location: DALLAS / MARLAND

Lab ID No	Field Sample No / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
1	DP-1	9-3-92 0830		✓	4oz Tefl x2	Soil	4°C	TCLP Volatiles	
1	DP-1	9-3-92 0830		✓	16oz Amb	Soil		TCLP Semi Volatiles	
1	DP-1	9-3-92 0830		✓	16oz SSwm	Soil		TCLP Metals	
1	DP-1	9-3-92 0830		✓	8oz SSwm	Soil		TPH (GC)	
1	DP-1	9-3-92 0830		✓	8oz Amb	Soil		Reactivity	
1	DP-1	9-3-92 0830		✓	8oz SSwm	Soil		ph, corrosivity, flashpoint	
2	DP-2	9-3-92 0930		✓	4oz Tefl x2	Soil		TCLP Volatiles	
2	DP-2	9-3-92 0930		✓	16oz Amb	Soil		TCLP Semi Volatiles	
2	DP-2	9-3-92 0930		✓	16oz SSwm	Soil		TCLP Metals	
2	DP-2	9-3-92 0930		✓	8oz SSwm	Soil	↓	TPH (GC)	

Samplers (Signature): [signature]

Affiliation: ENSTL

Relinquished by: (Signature) [signature] Date: 9-3-92 Time: 2000

Relinquished by: (Signature) Date: Time:

Relinquished by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by Laboratory: (Signature) [signature] Date: 9-9-~~Mad~~ Time: 9:00

COC Seal No.

REMARKS:

EXX22852

Data Results To:
1. Jay Swindle
2.

Laboratory No. A8972

AnalytiKEM

An American NuKEM Company

2925 RICHMOND AVENUE HOUSTON, TX 77098 (713) 520-1495 FAX: (713) 523-7107

Analysis Request and Chain of Custody Record

Project no.: 1009-001-150160 | Client/Project Name: Exxon | Project Location: Del Paso / Midland

Lab ID No	Field Sample No / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
2	DP-2	9-3-92 0930		L	8oz Amb	Soil	4°C	Reactivity	
2	DP-2	9-3-92 0930		L	8oz ss sum	Soil	4°C	ph, corrosivity, flashpoint	
3	MR-1	9-3-92 1100		L	40z Tefl x2	Soil	4°C	TCLP VOA	
3	MR-1	9-3-92 1100		L	16oz Amb	Soil	4°C	TCLP Semi VOA – Dan Broken on receipt at lab 9-9-92 8:-	
3	MR-1	9-3-92 1100		L	16oz ss sum	Soil	4°C	TCLP Metals	
3	MR-1	9-3-92 1100		L	8oz ss sum	Soil	4°C	TPH (6C.)	
3	MR-1	9-3-92 1100		L	8oz Amb	Soil	4°C	Reactivity	
3	MR-1	9-3-92 1100		L	8oz ss sum	Soil	4°C	ph, Corrosivity, flashpoint	

Samplers: (Signature) [signature] Affiliation

Relinquished by: (Signature) [signature] Date: 9-3-92 Time: 1200

Relinquished by: (Signature) Date: Time:

Relinquished by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by Laboratory: (Signature) Dale Dear Date: 9-9 Time: 9:02

COC Seal No: Intact: ?

REMARKS:

EXX22853

Data Results To: 1. JAY Swindle 2.

Laboratory No. A8922

ANALYTIKEM LABORATORIES
SAMPLE RECEIPT CHECKLIST

Client Exxon Project Number 209-001-150160 Laboratory Number 7852

1. ✓ Shipped — Notes: Fed. Ex #946353132
   ____ Hand Delivered — No Ticket
2. ✓ COC Present on Receipt — Notes: ____
   ____ No COC
3. ____ COC Tape on Shipping Container — Notes: ____
   ✓ No COC Tape on Shipping Container — Notes: ____
4. ✓ Samples Broken/Leaking — Notes: See Below
   ✓ Sample Intact on Receipt — Rusty Samples
   ____ Other (See Notes)
5. ✓ Ambient on Receipt — Notes: See Below
   ____ Chilled on Receipt
6. ____ Samples Preserved Correctly — Notes: ____
   ____ Improper Preservatives
   ✓ N/A (None Recommended)
   ____ Other (See Notes)
7. ✓ Received Within Holding Time — Notes: ____
   ____ Not Received Within Holding Time
   ____ N/A (None Recommended)
   ____ Other (See Notes)
8. ____ COC Tapes on Samples — Notes: ____
   ✓ No COC Tapes on Samples
9. ✓ Discrepancies Between COC and Sample Labels — Notes: See Below
   ____ No Discrepancies Noted
   ____ N/A (No COC Received)

Inspected and Logged in by: Rachel Rice Date/Time 6-9-92 6:02

Additional Comments: Samples should have arrived Friday 6-4-92 but Samples didn't arrive because there were no labels. Scott K. called on 6-8-92 & said the samples would be sent & Content to run Samples. One of the Vog Tedlar TCLP Voletile Bags did not have

EXX22854

AnalytiKEM-Houston

Analytical Summary
10/13/92 11:12

Lab Number: A8972
Project: 1009-001-150
EXXON

Lab ID	1	2	3	1T	2T	3T
Field ID	DP-1	DP-2	MR-1	DP-1/ TCLP	DP-2/ TCLP	MR-1/ TCLP
Test /Matrix	SOIL	SOIL	SOIL	TCLP_EXT	TCLP_EXT	TCLP_EXT
Ag - -TCL-HOU	--	--	--	<0.01* MG/L	<0.01* MG/L	<0.01* MG/L
(MDL)				*(0.01)**	*(0.01)**	*(0.01)**
As - -TCI-HOU	--	--	--	<0.2* MG/L	<0.2* MG/L	<0.2* MG/L
(MDL)				*(0.2)**	*(0.2)**	*(0.2)**
BNA - - -HOU	--	--	--	ATTACHED UG/L	ATTACHED UG/L	ATTACHED UG/L
(MDL)				*()**	*()**	*()**
Ba - -TCL-HOU	--	--	--	1.2* MG/L	1.2* MG/L	1.2* MG/L
(MDL)				*(0.5)**	*(0.5)**	*(0.5)**
CORR -S- -HOU	SEE REM*	SEE REM*	SEE REM*	--	--	--
(MDL)	*()**	*()**	*()**			
Cd - -TCL-HOU	--	--	--	<0.010* MG/L	<0.010* MG/L	<0.010* MG/L
(MDL)				*(0.010)**	*(0.010)**	*(0.010)**
Cr - -TCL-HOU	--	--	--	<0.05* MG/L	<0.05* MG/L	<0.05* MG/L
(MDL)				*(0.05)**	*(0.05)**	*(0.05)**
FP -S- -HOU	SEE REM*	SEE REM*	SEE REM*	--	--	--
(MDL)	*()**	*()**	*()**			
H2S -S-REA-SWL	ATTACHED PPM	ATTACHED PPM	ATTACHED PPM	--	--	--
(MDL)	*()**	*()**	*()**			

* Please see attached Analytical Report for remarks.

Signatures of approval indicate quality assurance-quality control verification of analytical results, billing and enclosed documentation.

Approvals: _____ Date: 10/13/92 _____ Date: 10/13/92

***** CONTINUED *****

EXX22855

AnalytiKEM-Houston

Analytical Summary
10/13/92 11:12

Lab Number: A8972
Project: 1009-001-150
EXXON

Lab ID / *Field ID* / *Test* / *Matrix*	1 DP-1 SOIL	2 DP-2 SOIL	3 MR-1 SOIL	1T DP-1/ TCLP TCLP_EXT	2T DP-2/ TCLP TCLP_EXT	3T MR-1/ TCLP TCLP_EXT
HCN -S-REA-SWL	ATTACHED PPM	ATTACHED PPM	ATTACHED PPM	--	--	--
(MDL)	*()**	*()**	*()**			
Hg - -TCL-HOU	--	--	--	<0.001* MG/L	<0.001* MG/L	<0.001* MG/L
(MDL)				*(0.001)**	*(0.001)**	*(0.001)**
Pb - -TCL-HOU	--	--	--	0.1* MG/L	0.02 MG/L	0.02 MG/L
(MDL)				*(0.02)**	*(0.02)**	*(0.02)**
Se - -TCI-HOU	--	--	--	<0.2* MG/L	<0.2* MG/L	<0.2* MG/L
(MDL)				*(0.2)**	*(0.2)**	*(0.2)**
TPH -S-GC -HOU	34 MG/KG	<25 MG/KG	270J* MG/KG	--	--	--
(MDL)	*(25)*	*(25)*	*(460)**			
VOA - - -HOU	--	--	--	ATTACHED UG/L	ATTACHED UG/L	ATTACHED UG/L
(MDL)				*()**	*()**	*()**
pH -S-COR-HOU	8.57 UNITS	8.13 UNITS	8.06 UNITS	--	--	--
(MDL)	*(0.01)*	*(0.01)*	*(0.01)*			

* Please see attached Analytical Report for remarks.

Signatures of approval indicate quality assurance-quality control verification of analytical results, billing and enclosed documentation.

Approvals: _____ Date: 10/13/92 _____ Date: 10/13/92

AnalytiKEM-Houston

Analytical Report
10/13/92 11:10

EXXON	Field ID: DP-1	Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 1	Time Sampled: 830
Lab No.: A8972	Matrix: SOIL (COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	34	MG/KG	25	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.57	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-01

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2	Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 2	Time Sampled: 930
Lab No.: A8972	Matrix: SOIL (COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	<25	MG/KG	25	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.13	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-02

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: MR-1	Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 3	Time Sampled: 1100
Lab No.: A8972	Matrix: SOIL (COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	270J* *5	MG/KG	460	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.06	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-03
*5 RESULT DETECTED BELOW MDL

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 1T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.1* *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-1T

EXX22860

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 1T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-1T

EXX22861

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 2T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.02 *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-2T

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 2T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-2T

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: MR-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 3T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.02 *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-3T

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:12

EXXON	Field ID: MR-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 3T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-3T

EXX22865

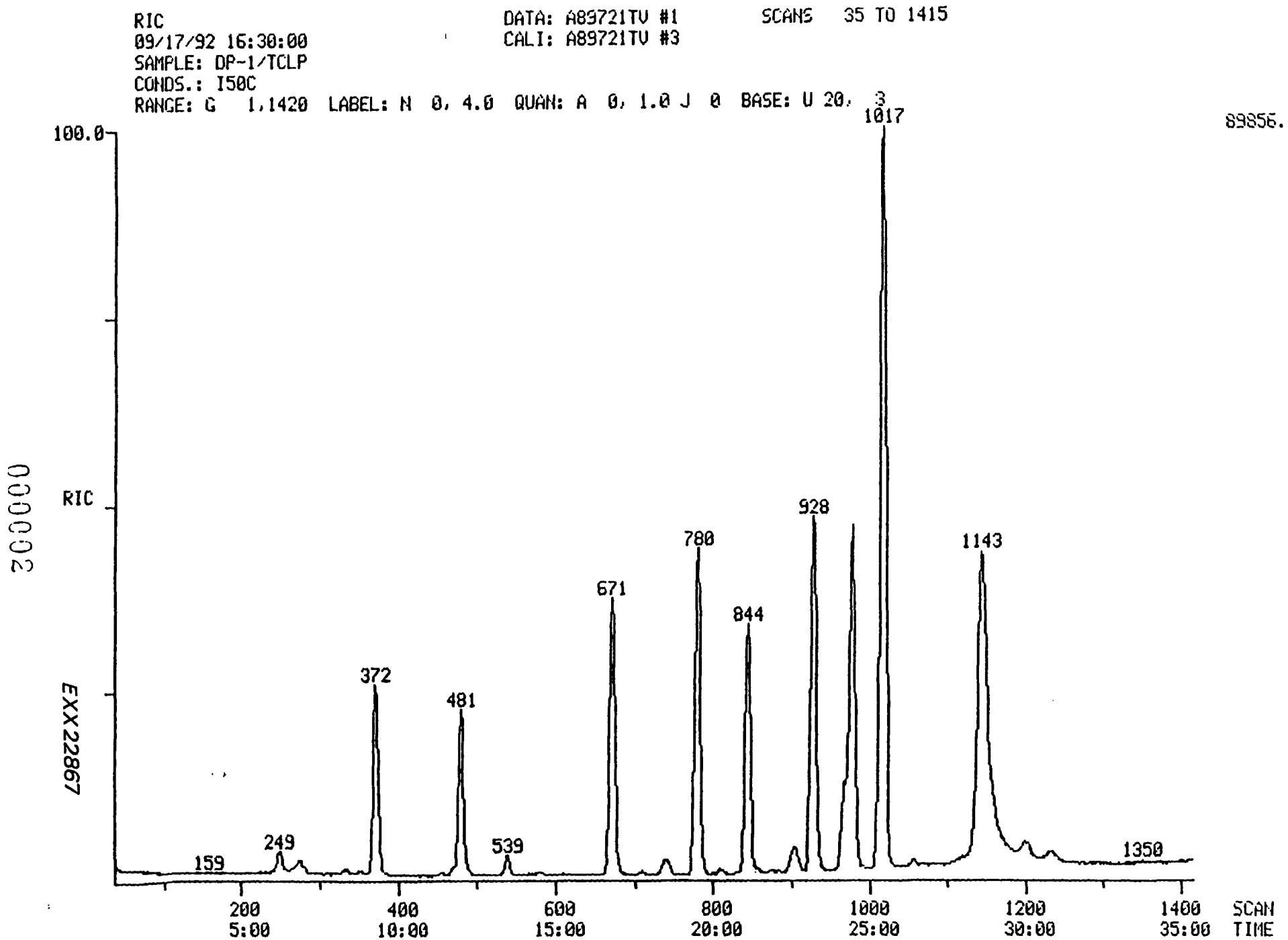
ORGANICS ANALYSIS DATA SHEET

Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-1T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-1-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is A89721TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.


RIC
09/17/92 16:30:00
SAMPLE: DP-1/TCLP
CONDS.: I50C
RANGE: G 1.1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: A89721TV #1
CALI: A89721TV #3
SCANS 35 TO 1415
89856.
100.0
RIC
200000
EXX22867
159
249
372
481
539
671
780
844
928
1017
1143
1350
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

ORGANICS ANALYSIS DATA SHEET

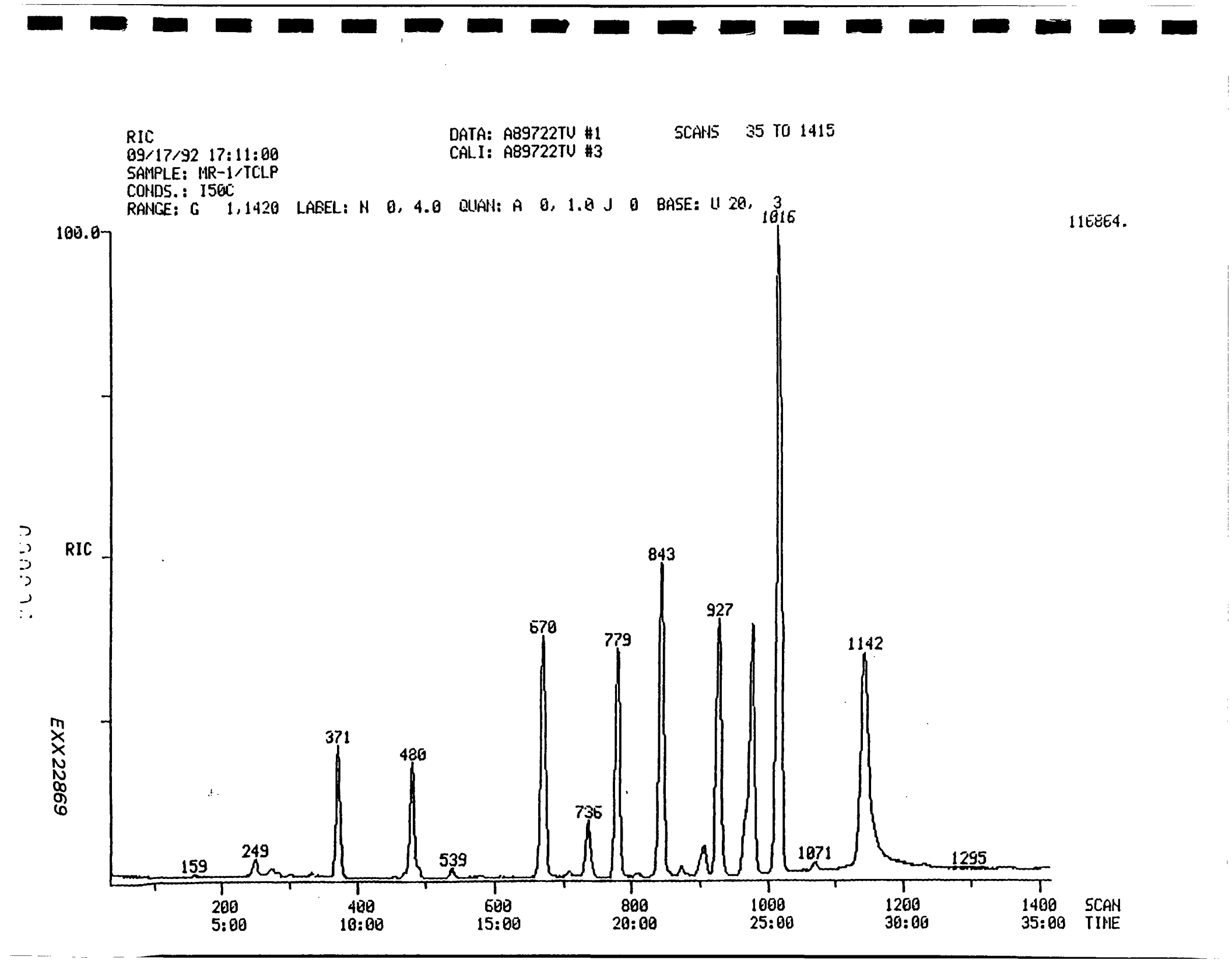
Laboratory Name:	AnalytiKEM-H[illegible]u	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-2T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	MR-1-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is A89722TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22868


RIC
09/17/92 17:11:00
SAMPLE: MR-1/TCLP
CONDS.: I50C
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: A89722TV #1
CALI: A89722TV #3
SCANS 35 TO 1415
116864.
100.0
RIC
EXX22869
159
249
371
480
539
670
736
779
843
927
1016
1071
1142
1295
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

ORGANICS ANALYSIS DATA SHEET

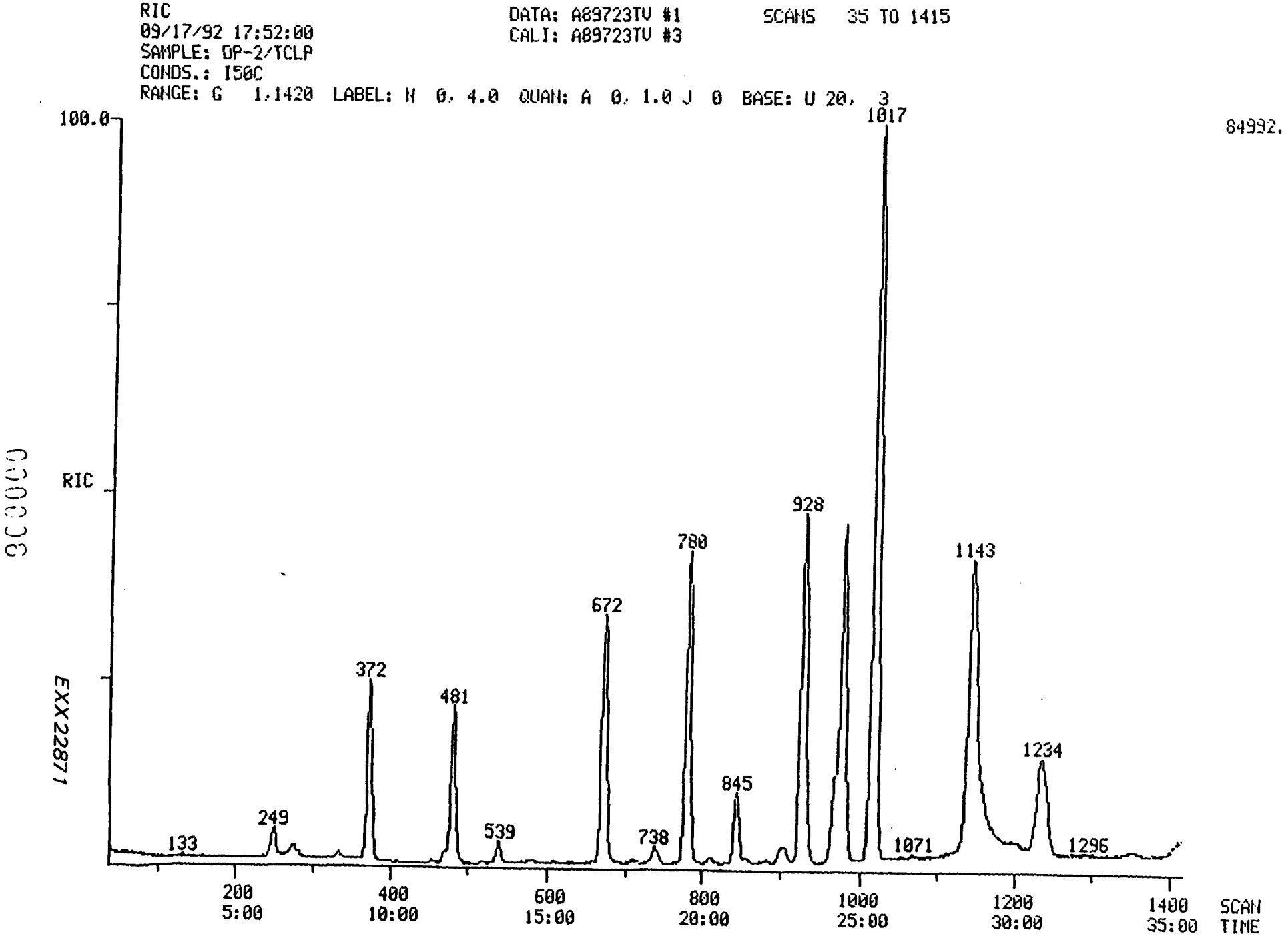
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-3T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-2-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride	5	<				

The Lab ID for data on this page is A89723TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22870


RIC
09/17/92 17:52:00
SAMPLE: DP-2/TCLP
CONDS.: 150C
DATA: A89723TV #1
CALI: A89723TV #3
SCANS 35 TO 1415
RANGE: G 1.1420 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3
100.0
84992.
RIC
EXX22871
133
249
372
481
539
672
738
780
845
928
1017
1071
1143
1234
1296
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

BROMOFLUOROBENZENE

Tuning Report
09/17/92 12:05:00 + 7:00
Instrument: I50C
#273 to #287 averaged - #307 to #318 - #255 to #260
Case Number: E

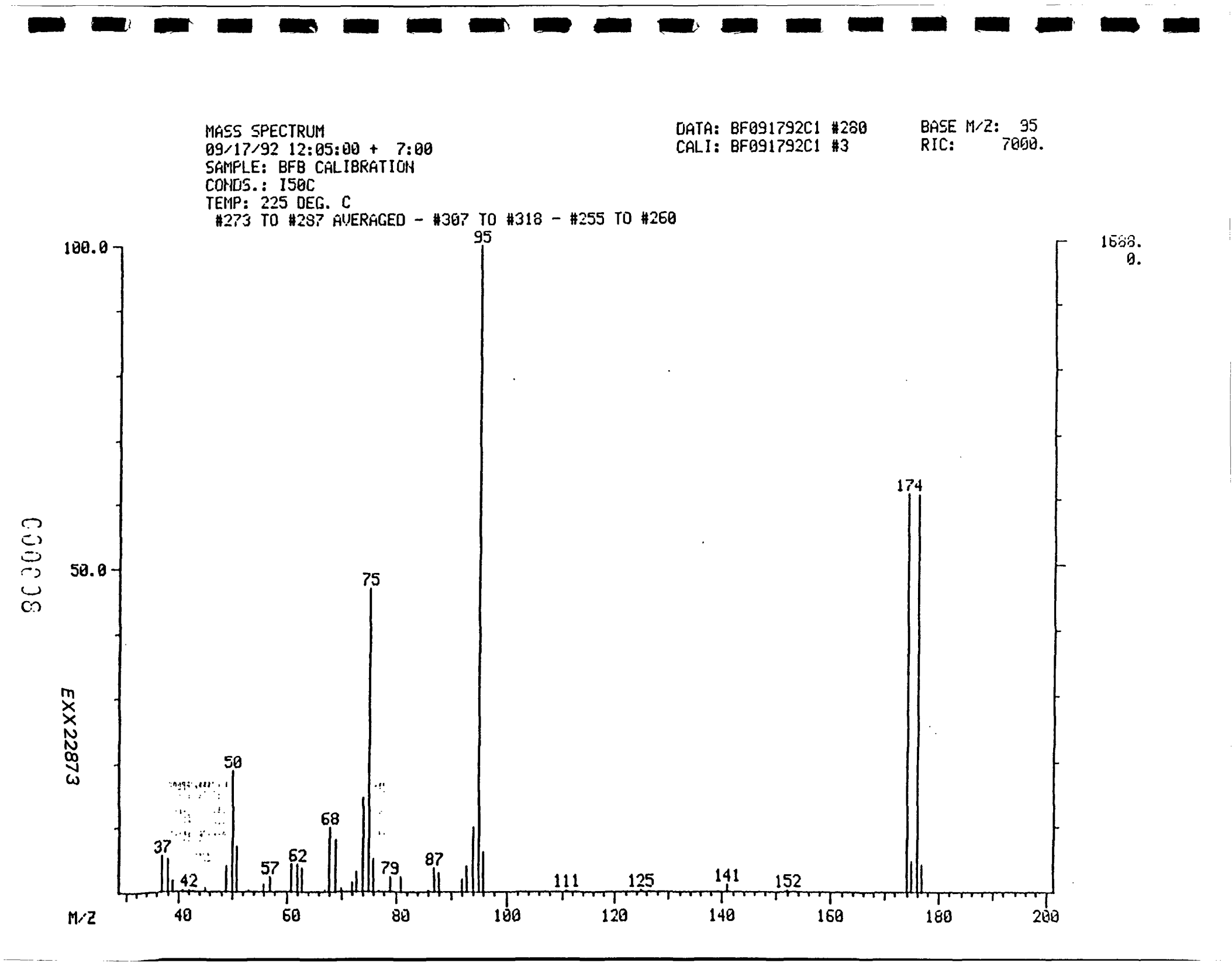
Data: BF091792C1 # 280
Cali: BF091792C1 # 3
Analyst: BPB
Laboratory: Z

Base m/z: 95
RIC: 7000.
Acct. No.: 8506-090
Contract: Z

			Ion Abundance Criteria				
m/z	Intensity	% RA	Min %	Max %	Mass	Actual	Status
50	317.	18.8	15.0	40.0	95	18.8	PASS
75	795.	47.1	30.0	60.0	95	47.1	PASS
95	1688.	100.0	100.0	---	---	100.0	PASS
96	104.	6.2	5.0	9.0	95	6.2	PASS
173	0.	0.0	---	2.0	174	0.0	PASS
174	1032.	61.1	50.0	---	95	61.1	PASS
175	81.	4.8	5.0	9.0	174	7.8	PASS
176	1024.	60.7	95.0	101.0	174	99.2	PASS
177	71.	4.2	5.0	9.0	176	6.9	PASS

EXX22872

C00007


MASS SPECTRUM
09/17/92 12:05:00 + 7:00
SAMPLE: BFB CALIBRATION
CONDS.: I50C
TEMP: 225 DEG. C
#273 TO #287 AVERAGED - #307 TO #318 - #255 TO #260
DATA: BF091792C1 #280
CALI: BF091792C1 #3
BASE M/Z: 95
RIC: 7000.
100.0
50.0
1668.
0.
95
174
75
50
68
37
62
57
79
87
42
111
125
141
152
M/Z
40
60
80
100
120
140
160
180
200
EXX22873

Mass List
09/17/92 12:05:00 + 7:00
Sample: BFB CALIBRATION
Conds.: I50C
#273 to #287 averaged - #307 to #318 - #255 to #260

Data: BF091792C1 # 280
Cali: BF091792C1 # 3

Base m/z: 95
RIC: 7000.

36 0.00 0. Minima Min Inten: 0.
177 Maxima # 0

Mass		% RA	Inten.
36?	S	0.12	2.
37?	S	5.51	93.
38?	S	5.09	86.
39?	S	1.66	28.
41?	S	0.18	3.
42?	S	0.18	3.
45?	S	0.59	10.
49?	S	3.91	66.
50?	S	18.78	317.
51?	S	6.93	117.
53?	S	0.18	3.
56?	S	1.13	19.
57?	S	2.13	36.
60?	S	0.06	1.
61?	S	4.03	68.
62?	S	4.03	68.
63?	S	3.50	59.
67?	S	0.18	3.
68?	S	10.01	169.
69	S	8.12	137.
70	S	0.65	11.
72	S	1.36	23.
73	S	3.14	53.
74	S	14.57	246.
75	S	47.10	795.
76	S	4.86	82.
77	S	0.24	4.
79	S	2.31	39.
81	S	2.07	35.
84	S	0.12	2.
86	S	0.18	3.
87	S	3.67	62.
88	S	2.67	45.
92	S	2.01	34.
93	S	3.97	67.
94	S	9.83	166.
95	S	100.00	1688.
96	S	6.16	104.
111	S	0.24	4.
113	S	0.06	1.
125	S	0.18	3.
129	S	0.06	1.
141	S	1.01	17.
152	S	0.18	3.
155	S	0.12	2.
174	S	61.14	1032.
175	S	4.80	81.
176	S	60.66	1024.
177	S	4.21	71.

EXX22874

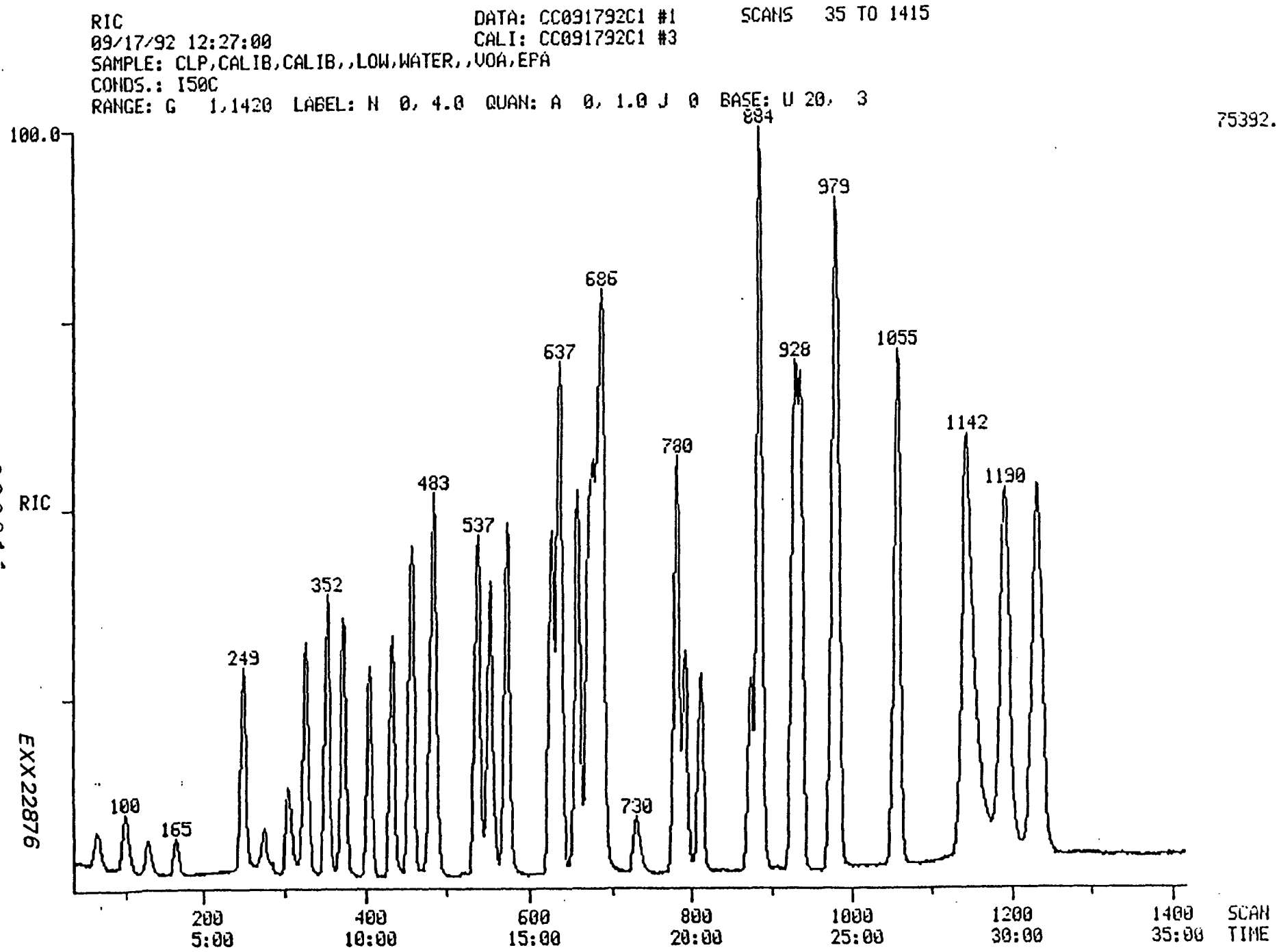
CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 09/17/92
Contractor: AnalytiKEM-Hou Time: 12:27
Contract No: _____ Laboratory ID: CCJ91792C1
Instrument ID: I50C Initial Cali. Date: 09/15/92

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.985	0.770	21.8		* *
Bromomethane	0.988	0.840	15.0		
Vinyl Chloride	0.998	0.777	22.1	*	
Chloroethane	0.640	0.474	25.9		
Methylene Chloride	1.380	1.168	15.4		
Acetone	0.279	0.714	-155.9		
Carbon Disulfide	1.959	2.150	-9.7		
1,1-Dichloroethene	1.425	1.316	7.6	*	
1,1-Dichloroethane	3.633	3.118	14.2		* *
trans-1,2-Dichloroethene	1.663	1.447	13.0		
Chloroform	4.353	3.833	11.9	*	
1,2-Dichloroethane	3.140	2.821	10.2		
2-Butanone	0.026	0.057	-119.2		
1,1,1-Trichloroethane	0.694	0.671	3.3		
Carbon Tetrachloride	0.522	0.496	5.0		
Vinyl Acetate	0.090	0.091	-1.1		
Bromodichloromethane	0.717	0.706	1.5		
1,2-Dichloropropane	0.439	0.413	5.9	*	
cis-1,3-Dichloropropene	0.588	0.578	1.7		
Trichloroethene	0.394	0.377	4.3		
Dibromochloromethane	0.512	0.505	1.4		
1,1,2-Trichloroethane	0.335	0.319	4.8		
Benzene	0.934	0.906	3.0		
Trans-1,3-Dichloropropene	0.523	0.498	4.8		
Bromoform	0.348	0.333	4.3		* *
4-Methyl-2-Pentanone	0.469	0.548	-16.8		
2-Hexanone	0.332	0.572	-72.3		
Tetrachloroethene	0.376	0.363	3.5		
1,1,2,2-Tetrachloroethane	0.654	0.657	-0.5		* *
Toluene	0.785	0.744	5.2	*	
Chlorobenzene	0.974	0.897	7.9		* *
Ethylbenzene	0.542	0.525	3.1	*	
Styrene	0.921	1.046	-13.6		
Xylene (total)	0.581	0.651	-12.0		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250


RIC
09/17/92 12:27:00
SAMPLE: CLP,CALIB,CALIB,,LOW,WATER,,VOA,EPA
CONDS.: I50C
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: CC091792C1 #1
CALI: CC091792C1 #3
SCANS 35 TO 1415
75392.
100.0
RIC
100
165
249
352
483
537
637
686
730
780
884
928
979
1055
1142
1190
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME
CC00111
EXX22876

VOLATILE ORGANICS ANALYSIS DATA SHEET

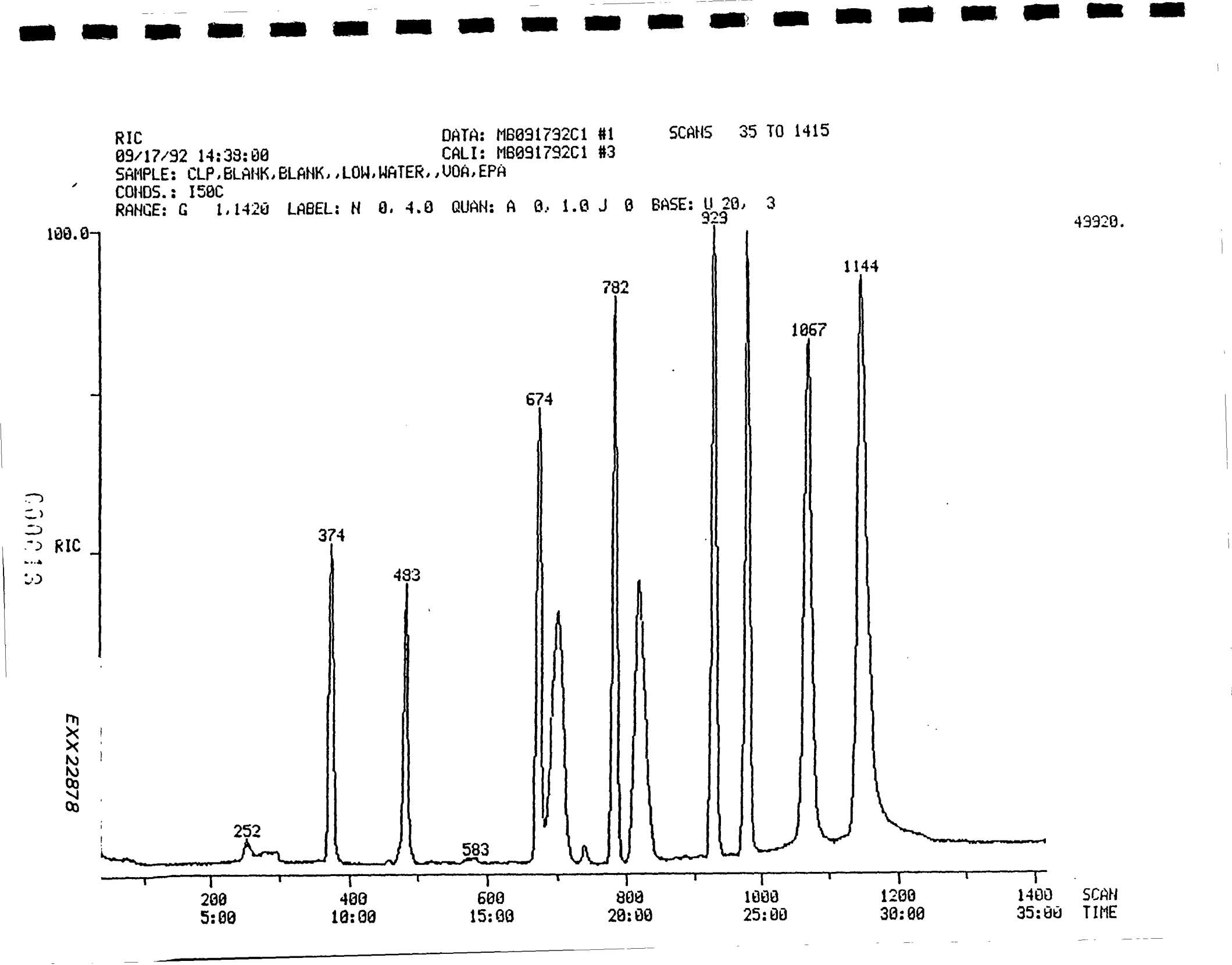
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	MB091792C1	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	MB091792C1	Percent Moisture:	100.0	Dilution Factor:	1.0

VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
74-87-3	Chloromethane	10	<	78-87-5	1,2-Dichloropropane	5	<
74-83-9	Bromomethane	10	<	10061-01-5	cis-1,3-Dichloropropene	5	<
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-00-3	Chloroethane	10	<	124-48-1	Dibromochloromethane	5	<
75-09-2	Methylene Chloride	6		79-00-5	1,1,2-Trichloroethane	5	<
67-64-1	Acetone	5	≈	71-43-2	Benzene	5	<
75-15-0	Carbon Disulfide	5	<	10061-02-6	Trans-1,3-Dichloropropene	5	<
75-35-4	1,1-Dichloroethene	5	<	110-75-8	2-Chloroethylvinyl ether	10	<
75-34-3	1,1-Dichloroethane	5	<	75-25-2	Bromoform	5	<
156-60-5	trans-1,2-Dichloroethene	5	<	108-10-1	4-Methyl-2-Pentanone	10	<
67-66-3	Chloroform	5	<	591-78-6	2-Hexanone	10	<
107-06-2	1,2-Dichloroethane	5	<	127-18-4	Tetrachloroethene	5	<
78-93-3	2-Butanone	10	<	79-34-5	1,1,2,2-Tetrachloroethane	5	<
71-55-6	1,1,1-Trichloroethane	5	<	108-88-3	Toluene	5	<
56-23-5	Carbon Tetrachloride	5	<	108-90-7	Chlorobenzene	5	<
108-05-4	Vinyl Acetate	5	<	100-41-4	Ethylbenzene	5	<
75-27-4	Bromodichloromethane	5	<	100-42-5	Styrene	5	<
				1330-20-7	Xylene (total)	5	<

The Lab ID for data on this page is MB091792C1.
≈ - Reported value is less than the detection limit.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.

EXX22877


RIC
09/17/92 14:38:00
SAMPLE: CLP,BLANK,BLANK,,LOW,WATER,,VOA,EPA
CONDS.: I50C
RANGE: G 1.1420 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3
DATA: MB091792C1 #1
CALI: MB091792C1 #3
SCANS 35 TO 1415
43920.
100.0
RIC
252
374
483
583
674
782
929
1067
1144
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME
EXX22878

ORGANICS ANALYSIS DATA SHEET

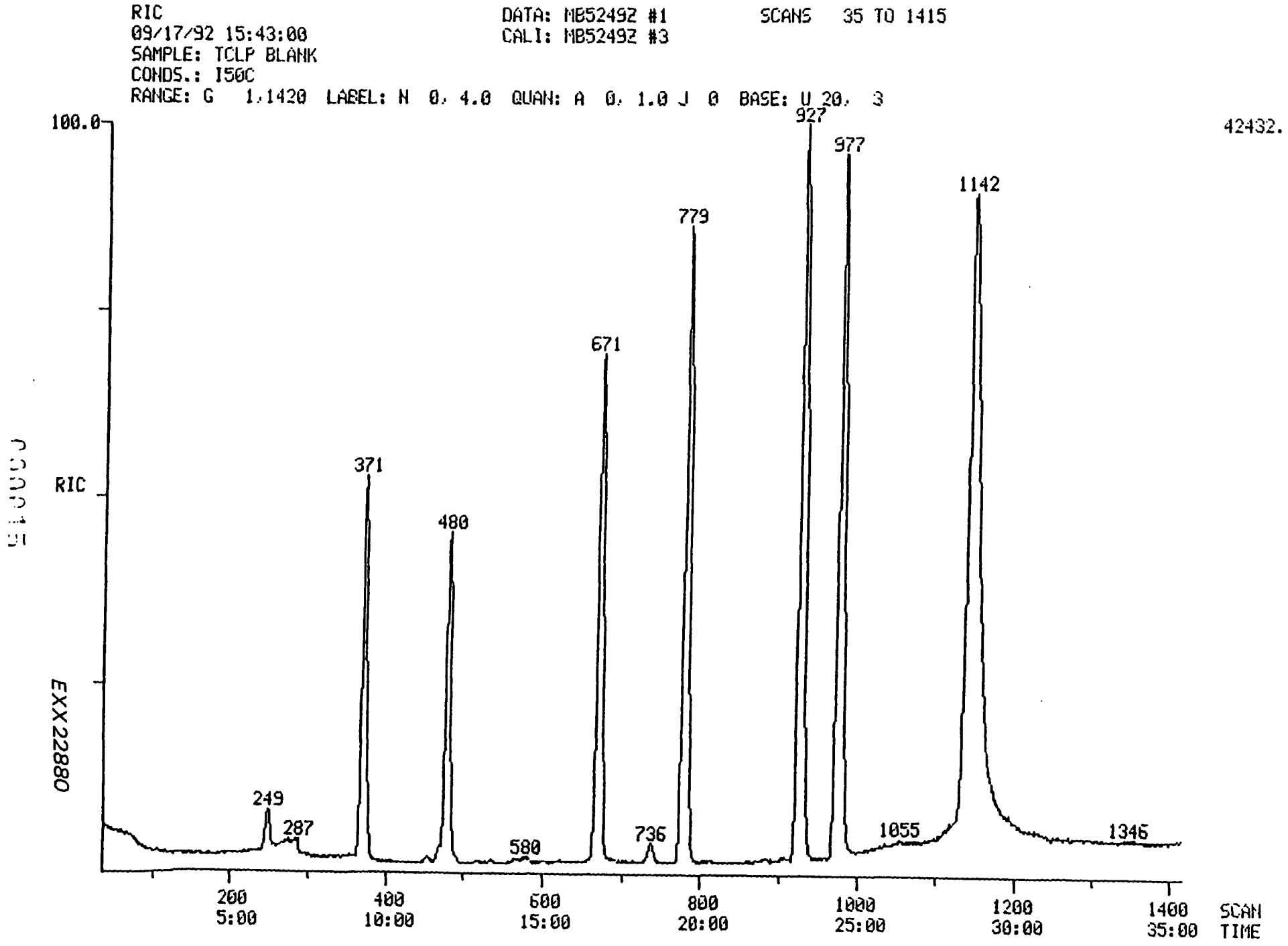
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	MB5249Z	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	TCLP_BLANK	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is MB5249Z.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22879


RIC
09/17/92 15:43:00
SAMPLE: TCLP BLANK
CONDS.: I50C
DATA: MB52492 #1
CALI: MB52492 #3
SCANS 35 TO 1415
RANGE: G 1.1420 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3
100.0
42432.
RIC
EXX22880
249
287
371
480
580
671
736
779
927
977
1055
1142
1345
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ANALYTIKEM-HOU Contract: _____

Lab Code: HOUSTON Case No.: A8972 SAS No.: _____ SDG No.: A8972

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	DP-1-TCLP	101	101	112	109	0
02	DP-1-TCLP-MS	100	103	112	103	0
03	DP-2-TCLP	102	100	110	106	0
04	MR-1-TCLP	96	97	113	109	0
05	TCLP_BLANK	102	98	109	109	0
06	MB091792C1	100	98	111	111	0

	QC LIMITS
SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

EXX22881

ORGANICS ANALYSIS DATA SHEET

Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-1TMS	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-1-TCLP-MS	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L	%R	CAS Number		ug/L	%R
75-01-4	Vinyl Chloride	43	86	79-01-6	Trichloroethene	49	98
75-35-4	1,1-Dichloroethene	43	86	71-43-2	Benzene	49	98
67-66-3	Chloroform	47	94	127-18-4	Tetrachloroethene	54	108
107-06-2	1,2-Dichloroethane	48	96	108-90-7	Chlorobenzene	50	100
78-93-3	2-Butanone	57	114				BPB
56-23-5	Carbon Tetrachloride	54	108				

The Lab ID for data on this page is A89721TVMS.
Data not spike corrected.

EXX22882

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: I50C
Contractor: AnalytiKEM-Hou Calibration Date: 09/15/92
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	IC0915020C1	IC0915100C1		IC0915200C1				
		CC091592C1	IC0915150C1					CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	1.281	1.110	0.718	0.832	0.983	0.985	22.6	* *
Bromomethane	1.232	1.036	1.054	0.835	0.781	0.988	18.4	
Vinyl Chloride	1.243	0.985	0.953	0.912	0.895	0.998	14.2	*
Chloroethane	0.766	0.636	0.633	0.572	0.593	0.640	11.8	
Methylene Chloride	1.676	1.292	1.333	1.308	1.291	1.380	12.1	
Acetone	0.470	0.531	0.140	0.136	0.120	0.279	72.7	
Carbon Disulfide	1.344	1.164	2.426	2.579	2.284	1.959	33.5	
1,1-Dichloroethene	1.717	1.420	1.363	1.365	1.259	1.425	12.2	*
1,1-Dichloroethane	4.142	3.466	3.670	3.519	3.370	3.633	8.4	* *
trans-1,2-Dichloroethene	2.030	1.636	1.649	1.544	1.458	1.663	13.2	
Chloroform	5.051	4.191	4.463	4.166	3.895	4.353	10.1	*
1,2-Dichloroethane	3.589	3.025	3.321	2.945	2.821	3.140	9.9	
2-Butanone	0.041	0.040	0.019	0.017	0.015	0.026	49.1	
1,1,1-Trichloroethane	0.781	0.761	0.670	0.660	0.598	0.694	10.9	
Carbon Tetrachloride	0.563	0.543	0.504	0.519	0.483	0.522	6.0	
Vinyl Acetate	0.071	0.041	0.129	0.120	0.087	0.090	40.2	
Bromodichloromethane	0.767	0.767	0.723	0.691	0.639	0.717	7.6	
1,2-Dichloropropane	0.488	0.433	0.454	0.417	0.403	0.439	7.6	*
cis-1,3-Dichloropropene	0.675	0.619	0.599	0.540	0.508	0.588	11.2	
Trichloroethene	0.467	0.392	0.387	0.366	0.357	0.394	11.0	
Dibromochloromethane	0.518	0.496	0.557	0.502	0.489	0.512	5.3	
1,1,2-Trichloroethane	0.389	0.311	0.363	0.313	0.300	0.335	11.5	
Benzene	1.101	0.982	0.930	0.858	0.798	0.934	12.5	
Trans-1,3-Dichloropropene	0.612	0.522	0.532	0.487	0.462	0.523	10.9	
2-Chloroethylvinyl ether	0.259	0.062	0.276	0.252	0.246	0.219	40.4	
Bromoform	0.313	0.322	0.379	0.364	0.362	0.348	8.3	* *
4-Methyl-2-Pentanone	0.437	0.351	0.521	0.526	0.511	0.469	16.0	
2-Hexanone	0.376	0.363	0.314	0.313	0.293	0.332	10.8	
Tetrachloroethene	0.466	0.392	0.340	0.353	0.330	0.376	14.7	
1,1,2,2-Tetrachloroethane	0.709	0.647	0.696	0.639	0.577	0.654	8.0	* *
Toluene	0.907	0.831	0.760	0.752	0.677	0.785	11.1	*
Chlorobenzene	1.054	0.981	0.992	0.952	0.893	0.974	6.0	* *
Ethylbenzene	0.634	0.564	0.535	0.511	0.467	0.542	11.5	*
Styrene	0.856	0.746	1.044	1.037	0.922	0.921	13.7	
Xylene (total)	0.562	0.489	0.647	0.639	0.569	0.581	11.1	
Toluene-d8	1.391	1.375	1.354	1.386	1.353	1.372	1.3	
Bromofluorobenzene	0.947	0.957	1.014	1.022	1.003	0.989	3.5	
1,2-Dichloroethane-d4	2.958	2.707	3.155	2.943	3.156	2.984	6.2	
Benzene-d6	1.043	0.998	0.979	0.941	0.937	0.980	4.5	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

EXX22883

TEST RESULTS BY SAMPLE

Sample: 01A A8972-1 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	245	ppm	20	09/14/92	SJ

Sample: 02A A8972-2 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	146	ppm	20	09/14/92	SJ

Sample: 03A A8972-3 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	241	ppm	20	09/14/92	SJ

SOUTHWESTERN LABORATORIES QUALITY CONTROL LOG

MDL

METHOD OF ANALYSIS 376.1 PARAMETER Sulfide MATRIX Liquid ANALYST Stackhouse DATE 9/4/92 TIME 700

CALIBRATION STANDARDS/BLANK	ABSORBANCE
L.R. (r) =	

STANDARDS	THEORETICAL CONCENTRATION	MEASURED CONCENTRATION	% RECOVERY
BLANK			
210	4+6+574	419	73%

LAB NUMBERS/SAMPLE ID NUMBERS IN THIS RUN:

92-09-131-1A, 92-09-1[illegible]-1A-3A, 92-09-132 1A, 92-09-132-1A,
92-09-159-1A-1A ; 92-09-099-1B

QUALITY CONTROL DUPLICATES AND SPIKES

PERCENT RECOVERY CALCULATION: SPIKED SAMPLE - SAMPLE ÷ THEORETICAL x 100

LAB #-SAMPLE ID #	FIRST CONC.	DIL. FACTOR	REPL. CONC.	DIL. FACTOR	RANGE	%PRECISION	SPIKED SAMPLE CONC.	SAMPLE CONC.	THEO. CONC.	% RECOVERY
92-09-159-2A	153		152		1	0				

EXX22885

SOUTHWESTERN LABORATORIES QUALITY CONTROL LOG

SW 846 REIKN SOLIDS/

MDL

METHOD OF ANALYSIS EPA 335.3 PARAMETER CN-W MATRIX H2O ANALYST J ALLEN DATE 14 SEPT TIME 0800

CALIBRATION STANDARDS/BLANK	ABSORBANCE
STD 0.02	3.25
0.05	9.375
0.10	18.125
0.50	85.00
L.R. (0) = .99995	

STANDARDS	THEORETICAL CONCENTRATION	MEASURED CONCENTRATION	% RECOVERY
BLANK			
STD 0.50	.500	.5055	101
	.500	.5114	102

LAB NUMBERS/SAMPLE ID NUMBERS IN THIS RUN:

REIKN 92-09-099-1 ; 92-09-118-(1,2,3) ; 92-09-137-1 ; 92-09-138-1
92-09-159-(1,2,3,4) CN-W 92-09-076-(3,4)

QUALITY CONTROL DUPLICATES AND SPIKES

PERCENT RECOVERY CALCULATION: SPIKED SAMPLE - SAMPLE ÷ THEORETICAL × 100

LAB #-SAMPLE ID #	FIRST CONC.	DIL. FACTOR	REPL. CONC.	DIL. FACTOR	RANGE	%PRECISION	SPIKED SAMPLE CONC.	SAMPLE CONC.	THEO. CONC.	% RECOVERY
92-09-159-2	<0.02	12.5 ml / 25 ml	<0.02	12.5 ml / 25 ml	0	—	.2606	0	.250	104
92-09-159-4	<0.02	12.7 ml / 25 ml	<0.02	12.7 ml / 25 ml	0	—	.2611	0	.250	105

EXX22886

PRECISION % = FIRST CONC. − REPLICATE CONC. ÷ MEAN × 100

ANALYTIKEM – HOUSTON

SILVER QUALITY CONTROL LOG

EPA SW-846:7760, AA

DATE/TIME OF ANALYSIS: 21Sep92/1350 PAGE 1 OF 2

LAB NUMBER-SAMPLE	COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
A9007(12)	Method blank for ~~A9007~~ J7+	SAMPLE BLANK	
A8931-(1-5)		METHOD BLANK	
A9027-(1-6)	A9027 was <2 mg/kg.	ERA 2 PE STD	1.012/1.0
A9007A-LT		INTERNAL STD.	
A8972-(1T-3T)			
A9021-1			

MATRIX SPIKE / LAB NUMBER-SAMPLE	PRECISION: MS % REC.	MSD % REC.	% RPD	MS DUPLICATE: SPIKE AMOUNT	ACCURACY: MS RESULT	MS % REC.	MSD RESULT	MSD % REC.
A9007-MB	107	–	–	0.1	0.107	107	–	–
A9007-2	112	106	5.5	0.1	0.112	112	0.106	106
(S) A8931-MB	115	–	–	↓	0.115	115	–	–
A8931-1	107	90	17.2	↓	0.107	107	0.090	90
A9027-MB	86	–	–	0.2	0.172	86	–	–
A9027-6	88	90	2.2	↓	0.176	88	0.179	90
A9007A-MB	88	–	–	0.1	0.088	88	–	–
A9007A-Extract Blk	82	↓	↓	↓	0.082	82	↓	↓
A9007A-6T	72				0.072	72		
A8972-MB	72				0.072	72		
-Extract Blk	84				0.084	84		
-1T	85				0.085	85		
-2T	87				0.087	87		

CONTROL LIMITS: AQUEOUS, 9-12 %RPD, 78-116 %REC.

SOLIDS, SAME %RPD, SAME %REC.

EXX22887

1 OUT OF 3 DUPLICATES WERE OUTSIDE OF QC LIMITS

0 OUT OF 16 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: Erick M Edwards/ENV QA/QC:

ANALYTIKEM – HOUSTON

SILVER QUALITY CONTROL LOG

EPA SW-846:7760, AA

DATE/TIME OF ANALYSIS: 2/5/92 / 1350 PAGE 2 OF 2

LAB NUMBER-SAMPLE	COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
		SAMPLE BLANK	
		METHOD BLANK	
		P.E. STD.	
		INTERNAL STD.	

MATRIX SPIKE	PRECISION		MS DUPLICATE	ACCURACY				
LAB NUMBER-SAMPLE	MS % REC.	MSD % REC.	% RPD	SPIKE AMOUNT	MS RESULT	% REC.	MSD RESULT	% REC.
A8972-3T	86	—	—	0.1	0.086	86	—	—
A9021-mB	88	↓	↓	↓	0.088	88	↓	↓
A9021-1	87	91	4.5	↓	0.087	87	0.091	91

CONTROL LIMITS: AQUEOUS, 9-12 %RPD, 78-116 %REC.

SOLIDS, SAME %RPD, SAME %REC.

EXX22888

0 OUT OF 1 DUPLICATES WERE OUTSIDE OF QC LIMITS

0 OUT OF 4 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: [signature] 2/5/92

QA/QC: [signature]

ANALYTIKEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24 SEPT 92/0853 EPA SW-846:6010 PAGE 1 OF 3

LAB ID	A8972 - (1T->3T)	A9021 - 1	A9041 - (1->10) DIS	A9041 - (1->10) TTL	A9062 - 1,3,5,6		
NOs							

PARAMETER		As	Se	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba	
PE	ERA-3	1.08 / 1.00	9.08 / 10.0	0.994 / 1.00	0.983 / 1.00	1.01 / 1.00	0.994 / 1.00	0.998 / 1.00	1.00 / 1.00	1.00 / 1.00	1.00 / 1.00	
STDS												

A8972-MB MS/MSD %REC	106	98		108	107		100			104	
%RPD											
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0	
A8972-EB MS/MSD %REC	102	99		97	99		97			116	
%RPD											
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0	
A8972-1T MS/MSD %REC	96	97		76	100		93			78	
%RPD											
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0	
A8972-2T MS/MSD %REC	111	96		77	80		78			80	
%RPD											
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0	

CONTROL LIMITS:

AQUEOUS	%RPD.										
	%REC.										
SOLIDS	%RPD.										
	%REC.										

-0- OUT OF -0- DUPLICATES WERE OUTSIDE OF QC LIMITS
0 OUT OF 24 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: EXX22889

ANALYST: James Matthews/JM QA/QC: Ted McKinney/TM

ANALYTICHEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24SEPT92/0853 EPA SW-846:6010 PAGE 2 OF 3

	As	Se	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba
A8972-3T MS/MSD %REC	112	112		82	78		70			62
%RPD										
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0
A9021-MB MS/MSD %REC			88	88	90	88	86		99	
%RPD										
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	
A9021-1 MS/MSD %REC			88/86	93/92	88/86	91/90	88/89		92/91	
%RPD			2.30	1.08	2.30	1.10	1.13		1.09	
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	
A9041-MB MS/MSD %REC Diss			93	93	92	94	91		104	94
%RPD										
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0
A9041-3 MS/MSD %REC Diss			77/88	79/83	65./72	84/88	84/89		*/*	85/85
%RPD			13.33	4.94	10.22	4.65	5.78		2.43	0
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0
A9041-MB MS/MSD %REC Total			89	91	87	88	120		104	94
%RPD										
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0

CONTROL LIMITS:

		As	Se	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba
AQUEOUS	%RPD										
	%REC.										
SOLIDS	%RPD										
	%REC.										

0 OUT OF 13 DUPLICATES WERE OUTSIDE OF QC LIMITS
2 OUT OF 52 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: EXX22890

ANALYST: James Mathis/JM QA/QC: Jeff McKay/JM

ANALYTIKEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24 SEPT 92/0853 EPA SW-846:6010 PAGE 3 OF 3

	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba				
A9041-10 MS/MSD %REC (Total)	84 / 77	88 / 84	87 / 95	89 / 88	* / *		92 / 92	81 / 82				
%RPD	8.70	4.65	8.79	1.13	0.66		0	1.23				
SPIKE AMT.	1.0	1.0	0.1	1.0	0.2		0.2	2.0				
A9062-MB MS/MSD %REC		86			88		82					
%RPD												
SPIKE AMT.		1.0			0.2		0.2					
A9062-1 MS/MSD %REC		81 / 81			66 / 71		72 / 74					
%RPD		0			7.30		2.74					
SPIKE AMT.		1.0			0.2		0.2					
MS/MSD %REC												
%RPD												
SPIKE AMT.												
MS/MSD %REC												
%RPD												
SPIKE AMT.												
MS/MSD %REC												
%RPD												
SPIKE AMT.												

EXX22891

CONTROL LIMITS:

AQUEOUS	%RPD												
	%REC.												
SOLIDS	%RPD												
	%REC.												

0/2 OUT OF 10/23 DUPLICATES WERE OUTSIDE OF QC LIMITS
2/23 OUT OF 23 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: * spike lost to high analyte concentration

ANALYST: James Walker/SM QA/QC: Ted McKelvey/TM

AnalytiKEM–Houston

QUALITY CONTROL LOG

Parameter: Ignitability on Solid

Method of Analysis: EPA SW-846, 1010

Matrix: Soil

Date/Time: 9-16-92 / 1740

Lab Numbers	Detection Limits
*A9007-6	
*A8972-1,2,3	

Calibration Stds./Blk	Absorbance/Conc.
Correlation Coefficient:	

Comments: ** Samples analyzed in duplicate.

Check Standards	Concentration Found/True
Sample Blank	
Method Blank	
P.E. Std.	
Internal Std.	

Internal Quality Control Duplicates and Spikes

* Below MDL

Lab No. - Sample ID	Sample Conc.	Duplicate Conc.	Range	Percent RPD	Spiked Result	Sample Result	Spike Added	Percent Recovery
**A9007-6								
**A8972-1								

EXX22892

Analyst: Engelsing

QA/QC Approval:

ANALYTIKEM - HOUSTON

MERCURY QUALITY CONTROL LOG

EPA SW-846:7470, 7471 AA

DATE/TIME OF ANALYSIS: 9/22/92 / 16:00 PAGE 1 OF 1

LAB NUMBER-SAMPLE	COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
A8972-1T-3T		SAMPLE BLANK	—
A9007A-6T		METHOD BLANK	—
A9027-1-6		EPA 1085-1 P.E. STD.	0.0105 / 0.010
A9003-1		CVS ~~INTERNAL~~ STD.	0.0075 / 0.0075

MATRIX SPIKE	PRECISION	MS DUPLICATE		ACCURACY				
LAB NUMBER-SAMPLE	MS % REC.	MSD % REC.	% RPD	SPIKE AMOUNT	MS RESULT	% REC.	MSD RESULT	% REC.
A8972-extract blk	106	—	—	0.005	0.0053	106	—	—
A8972-1T	98	—	—		0.0049	98	—	—
A8972-2T	102	—	—		0.0051	102	—	—
A8972-3T	98	—	—		0.0049	98	—	—
A9007A-extract blk	98	—	—		0.0049	98	—	—
A9007A-6T	100	—	—		0.0050	100	—	—
S A9027-4	98	98	0		0.0049	98	0.0049	98
A9003-1	90	90	0		0.0045	90	0.0045	90
METHOD BLANK	102	—	—		0.0051	102	—	—

CONTROL LIMITS: AQUEOUS, 11-15 %RPD, 81-123 %REC

SOLIDS, SAME %RPD, SAME %REC

EXX22893

0 OUT OF 2 DUPLICATES WERE OUTSIDE OF QC LIMITS

6 OUT OF 10 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: Tammy Lenore / CL QA/QC: Ted R McKinney / TM

AnalytiKEM LABORATORIES - HOUSTON
QUALITY CONTROL LOG- MATRIX SPIKE RECOVERY AND PRECISON
SW-846: METHOD 8 A8972
MATRIX: SOIL SAMPL A8972-1

COMPOU	SPIKE ADDED	SAMPLE RESULT	MS RESULT	REC%	MSD RESULT	REC%	RPD	QC LIMITS RPD	QC LIMITS REC%
DIESEL	250	34	299	106	446	165	39	20.00	20-150

Sandra Utley 9/28/92 Brenda R. Basile 9/30/92

ANALYST DATE QA/QC APPROVAL DATE

EXX22894

ANALYTIKEM LABORATORIES
QUALITY CONTROL LOG-FORTIFIED BLANK AND METHOD BLANK
TPH ANALYSIS
LAB NO. A8972

BLANK EXTRACTION DATE: 9/15/92

NO TPH DETECTED AT STATED
METHOD DETECTION LIMIT MB5243LS

FORTIFIED METHOD BLANK FB5244LS

AMOUNT(MG/KG) SPIKED	AMOUNT(MG/KG) RECOVERED	PERCENT RECOVERY
250	290	116

COMMENTS:

Sanda M. Ortiz 9/28/92
ANALYST SIGNATURE DATE

Brenda P. Davis 9/29/92
QAQC COORDINATOR DATE

EXX22895

AnalytiKEM—Houston

QUALITY CONTROL LOG

Parameter: pH corrosion on Solid

Method of Analysis: EPA SW-846, 9040

Page: 1 of 1

Matrix: ~~Liquid~~ Solid

Date/Time: 9-16-92 / 1620

Lab Numbers	Detection Limits
A8972-123	0.01 unit
A9007-6	↓

Calibration Stds./Blk	Absorbance/Conc.
Buffer 10.00	} Calib.
4.00	
Correlation Coefficient:	

Comments:

Check Standards	Concentration Found/True
Sample Blank	
Method Blank	
P.E. Std.	
Internal Std. Buffer 7.0	7.04 units
cc vs Buffer 7.0	7.05 units

Internal Quality Control Duplicates and Spikes

* Below MDL

Lab No. - Sample ID	Sample Conc.	Duplicate Conc.	Range	Percent RPD	Spiked Result	Sample Result	Spike Added	Percent Recovery
A8972-1	8.57	8.58	0.01	0.1				
A9007-6	7.39	7.32	0.07	1.0				

EXX22896

Analyst: Fizelmis

QA/QC Approval:

AnalytiKEM-Houston

Billing Summary
10/02/92 14:22

EXXON
Project No.: 1009-001-150 Lab Number: A8972

	Test Code	Description	Number	Cost	Total
1.	Ag - -TCL-HOU	TCLP SILVER	3	15.62	46.86
2.	As - -TCI-HOU	TCLP ARSENIC	3	15.62	46.86
3.	BNA - - -HOU	SEMIVOLATILE ORGANICS	3	450.00	1350.00
4.	Ba - -TCL-HOU	TCLP BARIUM	3	15.62	46.86
5.	CORR -S- -HOU	CORROSIVITY ON SOLID	3	65.00	195.00
		No Charge-Unable to Analyze	3	-65.00	-195.00
6.	Cd - -TCL-HOU	TCLP CADMIUM	3	15.62	46.86
7.	Cr - -TCL-HOU	TCLP CHROMIUM	3	15.63	46.89
8.	FP -S- -HOU	IGNITABILITY ON SOLID	3	35.00	105.00
9.	H2S -S-REA-SWL	HYDROGEN SULFIDE, REACTIVE/SLD	3	35.00	105.00
10.	HCN -S-REA-SWL	HYDROCYANIC ACID, REACTIVE/SLD	3	35.00	105.00
11.	Hg - -TCL-HOU	TCLP MERCURY	3	15.63	46.89
12.	Pb - -TCL-HOU	TCLP LEAD	3	15.63	46.89
13.	Se - -TCI-HOU	TCLP SELENIUM	3	15.63	46.89
14.	TCLP -S- -HOU	TOXICITY CHAR. LEACH. PROC.	3	100.00	300.00
15.	TPH -S-GC -HOU	PETROLEUM HYDROCARBON BY GC	3	100.00	300.00
16.	VOA - - -HOU	VOLATILE ORGANIC ANALYSES	3	225.00	675.00
17.	ZHE -S- -HOU	ZERO HEADSPACE EXTRACTION/SLD	3	150.00	450.00
18.	pH -S-COR-HOU	pH CORROSION ON SOLID	3	10.00	30.00
19.		Sample Disposal Charge		$ 6.50	32.50
	Total:				3827.50

EXX22897