Ultramar

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March 28, 1995

Mr. Scott Seery
Department of Environmental Health
Alameda County Health Care Agency
1131 Harbor Parkway, Room 250
Alameda, CA 94502-6577

SUBJECT: BEACON STATION NO. 720, 1088 MARINA BLVD., SAN LEANDRO, CALIFORNIA

Dear Mr. Seery:

Enclosed is a copy of the report on the installation of the monitoring well, vapor extraction wells, and air sparging wells at the above-referenced Ultramar facility.

Ultramar is proceeding with the design of the remediation system.

Please call if you have any questions.

Sincerely,

ULTRAMAR INC.

Terrence A. Fox
Senior Project Manager
Marketing Environmental Department

Enclosure

cc: Local Program Coordinator, San Francisco Bay Region, RWQCB

ACTON •
MICKELSON •
van DAM, INC.

Consulting Scientists, Engineers, and Geologists

March 22, 1995

Mr. Terrence Fox
Ultramar Inc.
525 West Third Street
Hanford, California 93232

19030.03/1

Subject: Monitoring Well, Vapor Extraction Well, and Sparge Well Installation Report
Beacon Station #720, 1088 Marina Boulevard, San Leandro, California

Dear Mr. Fox:

Acton • Mickelson • van Dam, Inc. (AMV), has been authorized to continue an investigation of soil and ground water conditions at Beacon Station #720 located at 1088 Marina Boulevard, San Leandro, Alameda County, California (Figure 1). This letter report summarizes the results of soil boring, ground water monitoring, well installation, and soil and ground water sampling performed at the site on December 20 and 21, 1994.

Scope of Work

AMV advanced six 8-inch-diameter soil borings to a depth of 28 feet below grade and completed the borings as a 2-inch-diameter air sparging wells (designated as SP-1 through SP-6). One 8-inch-diameter soil boring was advanced to 14 feet below grade and completed as a 2-inch-diameter vapor extraction well (VW-1), and one 10-inch-diameter soil boring was advanced to 25 feet below grade and completed as ground water monitoring well MW-9. The new and existing well locations are illustrated on Figure 2. Drilling and sampling procedures conformed to the techniques outlined in Enclosure A.

Selected soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPHg). Analytical procedures conformed to U.S. Environmental Protection Agency (EPA) and California Environmental Protection Agency, Department of Toxic Substances Control (Cal-EPA) approved methods.

6 - sparge points (SP-1 → SP-6)
1 - SVE well
1 - monitoring well (MW-9)

lrpt184.mj

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Soil Borings

Soil samples collected from the borings advanced at the site on December 20 and 21, 1994, consisted of clay, sandy clay, and sand. Soil grain size generally increases with depth beneath the site. For example, the vertical sequence of soil types encountered in the boring for sparging well SP-6 is described in detail by depth as follows: from beneath the asphalt and fill material to approximately 22 feet below grade, the soil encountered consisted of a very dark gray clay; sandy clay is present from 22 to 27 feet below grade, and from 27 to 28 feet below grade, the soil encountered consisted of medium-grained sand. Sharp contacts exist between the soil types. Saturated soil was first noted at a depth of approximately 20 feet below grade in borings advanced in December 1994; however, static water levels in wells installed at the site ranged from 13.30 to 14.89 feet below grade. The borings for sparging wells SP-1 through SP-6 were terminated at a predetermined depth of 28 feet below grade. Monitoring well MW-9 was advanced to 25 feet below grade, and vapor extraction well VW-1 was drilled to a total depth of 14 feet below grade. Soil boring logs containing detailed descriptions of soil types encountered in each boring are included in Enclosure B.

Soil Sample Analytical Results

A portion of each soil sample collected from the soil borings was sealed in a plastic bag, placed out of direct sunlight, and allowed to reach ambient air temperature. The headspace of the bag was then screened in the field with a photoionization detector (PID). Soil samples from each boring were then selected for analysis based on field readings using the PID.

A total of 18 soil samples, two to three soil samples collected from above the water table in each boring, were submitted for analysis of BTEX and TPHg. Analytical results of soil samples submitted for laboratory analysis are summarized in Table 1; copies of certified analytical reports for each soil sample submitted to the laboratory during this phase of work are contained in Enclosure C.

Three of the soil samples, collected from 5 feet below grade in the borings for sparge wells SP-3 and SP-6, and monitoring well MW-9, did not contain detectable concentrations of BTEX or TPHg. Soil samples collected from 10 and 15 feet below grade in the borings for all the wells installed in December 1994 reportedly contained detectable concentrations of TPHg ranging from 1.0 milligram per kilogram (mg/kg) to 1,600 mg/kg (Table 1).

Monitoring, Vapor Extraction, and Air Sparging Well Installation

Ground water monitoring well MW-9 was constructed of 4-inch-diameter, Schedule 40 PVC casing. Twenty feet of 0.020-inch-slot screened casing was installed from 5 to 25 feet below grade. Blank PVC casing extends from 5 feet below grade to the surface. Monitoring well construction details are contained in Enclosure D. Prior to placing the annular seal in monitoring well MW-9, the well was developed and purged using a 4-inch-diameter surge block and a stainless steel bailer. The well was sampled on December 20, 1994, in accordance with methods outlined in Enclosure A. The ground water sample from monitoring well MW-9 was submitted for laboratory analysis of BTEX and TPHg by Cal-EPA and EPA-approved methods.

Vapor extraction well VW-1 was constructed of 2-inch-diameter PVC casing. The total depth of the well is 14 feet below grade, and screened casing was installed from 4 to 14 feet below grade. All of the sparge wells installed on December 20 and 21, 1994, were constructed using 2-inch-diameter PVC well casing. The sparge wells were constructed with 5 feet of 0.020-slot well screen installed from 23 to 28 feet below grade. Bentonite chips were emplaced in the saturated interval of the well annulus above the well screen (from 14 to 23 feet below grade), and neat cement containing approximately 5 percent bentonite was used for the annular seal (from the surface to 14 feet below grade). Vapor extraction and air sparging well construction diagrams are presented in Enclosure D.

Ground Water Level Measurements

Depth to ground water was measured in all of the existing monitoring wells (MW-1 through MW-9) on December 21, 1994 (Table 2). Ground water was present at depths ranging from 11.61 (MW-6) to 14.89 (MW-8) feet below the top of respective well casing risers. Liquid-phase petroleum hydrocarbons were not observed in any monitoring well on this date. Water level measurements indicate an inferred direction of ground water flow toward the southwest as illustrated on Figure 3. On December 22, 1994, the ground water gradient was calculated at 0.003 foot per foot (ft/ft). Copies of data sheets and field notes from work performed in December 1994 are presented in Enclosure E.

Ground Water Analytical Results

After the newly installed monitoring well was purged on December 20, 1994, a ground water sample was collected from monitoring well MW-9. The ground water sample was collected as described in Enclosure A and analyzed for BTEX and TPHg by EPA and Cal-EPA approved methods. Concentrations of dissolved benzene in ground water samples collected in December

1994 ranged from less than 0.50 micrograms per liter (µg/l) (off-site wells MW-6 and MW-7) to 20,000 µg/l in the ground water sample collected from monitoring well MW-4. Analytical results of sampling conducted on December 20, 1994, are summarized in Table 3. Ground water sample analytical results from the fourth quarter 1994 sampling event are included in Table 3 for comparison. Copies of certified analytical reports are contained in Enclosure F.

The most recent ground water quality data available for each existing monitoring well were compiled to infer the distribution of dissolved benzene in ground water beneath the site (Figure 4). Data from monitoring wells MW-1 through MW-8 are from December 19, 1994, and data from monitoring well MW-9 is from December 20, 1994. Each well at the site will be sampled on the same day during the next quarterly sampling event to verify the inferred distribution of dissolved benzene in ground water.

Summary

Soil samples collected from below 5 feet in all the borings for wells installed at the site in December 1994 reportedly contained detectable concentrations of TPHg above the method detection limits. Detectable concentrations of TPHg in soil samples collected from these borings ranged from 1.0 mg/kg at 10 feet in MW-9 to 1,600 mg/kg at 15 feet in VW-1.

Ground water samples collected in December 1994 from monitoring wells MW-6 and MW-7 did not contain detectable concentrations of TPHg or BTEX. The ground water samples collected from monitoring wells MW-1 through MW-5, MW-8, and MW-9 reported benzene concentrations ranging from 70 µg/l (MW-3) to 20,000 µg/l (MW-4).

The inferred direction of ground water flow on December 21, 1994, was toward the southwest with an inferred hydraulic gradient of less than 0.01 ft/ft.

Remarks

This report represents our professional opinions, which are based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practice at this time and location. Other than this, no warranty is implied or intended.

It is recommended that a copy of this report be forwarded to the following agencies:

Mr. Craig A. Mayfield
Alameda County Flood Control and Conservation District
5997 Parkside Drive
Pleasanton, California 94588

Local Program Coordinator for Alameda County
California Regional Water Quality Control Board,
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612

Mr. Scott Seery
Department of Environmental Health
Alameda County Health Care Agency
80 Swan Way, Room 200
Oakland, California 94621

If you have any questions regarding this project, please contact either of the undersigned immediately.

Sincerely,

ACTON • MICKELSON • van DAM, INC.

Steven A. Liaty
Staff Geologist

Joseph E. Mello, R.G.
California Registered Geologist #6091

REGISTERED GEOLOGIST
JOSEPH E. MELLO, JR.
NO. 6091
STATE OF CALIFORNIA

SAL:JEM:mjd
Enclosures

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Beacon Station #720
1088 Marina Boulevard, San Leandro, California
(concentrations in milligrams per kilogram)

Date Sampled	Sample No.	Sample Depth (feet)	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPHg[a]
12-21-94	VW1-2	10	0.12	<0.0050	0.027	0.014	1.2
	VW1-3	15	12	54	36	180	1,600
12-20-94	MW9-1	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
	MW9-2	10	0.10	<0.0050	<0.0050	<0.0050	1.0
	MW9-3	15	2.8	6.9	7.0	29	280
12-20-94	SP1-2	10	0.049	0.0063	0.074	0.12	1.7
	SP1-3	15	1.0	6.3	5.7	26	270
12-21-94	SP2-2	10	0.074	0.019	0.030	0.16	1.3
	SP2-3	15	4.9	36	21	94	1,100
12-20-94	SP3-1	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
	SP3-3	15	3.9	25	20	93	900
12-20-94	SP4-2	10	0.30	<0.0050	0.063	0.065	2.0
	SP4-3	15	3.2	8.1	8.4	42	340
12-21-94	SP5-2	10	0.011	<0.0050	<0.0050	<0.0050	<1.0
	SP5-3	15	0.44	0.63	0.94	4.6	57
12-20-94	SP6-1	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
	SP6-2	10	0.098	<0.0050	0.018	<0.0050	<1.0
	SP6-3	15	2.9	9.0	5.7	27	280

[a]TPHg = Total petroleum hydrocarbons as gasoline.

TABLE 2

WATER ELEVATION DATA
Beacon Station #720
1088 Marina Boulevard, San Leandro, California

Monitoring Well	Date	Top of Riser	Depth to Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-1	12-21-94	33.10	13.86	19.24	No Product
MW-2	12-21-94	32.80	13.71	19.09	No Product
MW-3	12-21-94	32.30	13.30	19.00	No Product
MW-4	12-21-94	32.90	13.99	18.91	No Product
MW-5	12-21-94	32.70	13.84	18.86	No Product
MW-6	12-21-94	30.40	11.61	18.79	No Product
MW-7	12-21-94	31.20	12.38	18.82	No Product
MW-8	12-21-94	33.80	14.89	18.91	No Product
MW-9	12-21-94	32.56	13.76	18.80	No Product

TABLE 3

[redacted] SAMPLE ANALYTICAL RESULTS
Beacon Station #720
1088 Marina Boulevard, San Leandro, California
(concentrations in micrograms per liter)

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPHg[a]
MW-1	12-19-94[b]	[redacted]	150	1,500	5,200	17,000
MW-2	12-19-94[b]	[redacted]	750	1,600	5,800	19,000
MW-3	12-19-94[b]	[redacted]70	1.7	140	110	3,800
MW-4	12-19-94[b]	[redacted]	8,300	2,300	9,100	67,000
MW-5	12-19-94[b]	[redacted]	3,400	1,200	5,200	29,000
MW-6	12-19-94[b]	<0.50	<0.50	<0.50	<0.50	<50
MW-7	12-19-94[b]	<0.50	<0.50	<0.50	<0.50	<50
MW-8	12-19-94[b]	[redacted]	390	500	2,000	8,400
MW-9	12-20-94[c]	[redacted]	1,400	690	2,800	16,000

[a]TPHg = Total petroleum hydrocarbons as gasoline.
[b]12-19-94 = Ground water sample collected by Duolos Environmental.
[c]12-20-94 = Initial ground water sample collected by AMV.

General Notes

Base Map from U.S.G.S.
San Leandro, California
7.5 Minute Topographic
Photorevised 1980

NORTH

CALIF

QUADRANGLE LOCATION

0 2,000

Approximate Scale
(in feet)

FIGURE 1

SITE LOCATION MAP
BEACON STATION #720
1088 MARINA BOULEVARD
SAN LEANDRO, CALIFORNIA

Project No.	Drawn
19030	DA
File No.	Prepared
FIG1	SAL
Revision	Reviewed

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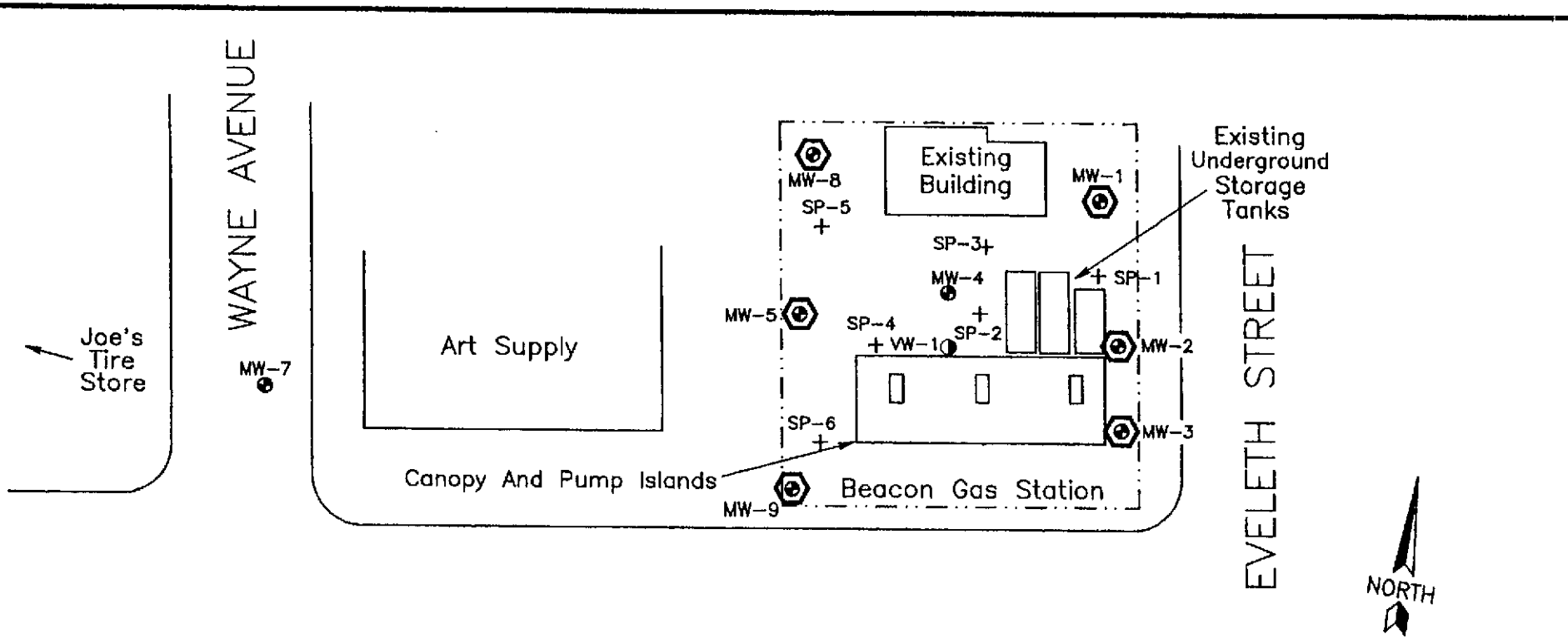

LEGEND

- MW-6 — Monitoring Well Location And Number
- VW-1 — Vapor Extraction Well Location And Number
- MW-8 — Monitoring Well/Vapor Extraction Well
- SP-5 — Sparge Well Location And Number

Note: Base Map Adapted From Environmental Geotechnical Consultants, Inc. Dated 12/92. All Dimensions And Locations Not Verified By AMV.

FIGURE 2
SITE MAP

BEACON STATION #720
1088 MARINA BOULEVARD
SAN LEANDRO, CALIFORNIA

Project No.	Drawn
19030	LMC
File No.	Prepared
FIG8	SAL
Revision	Reviewed

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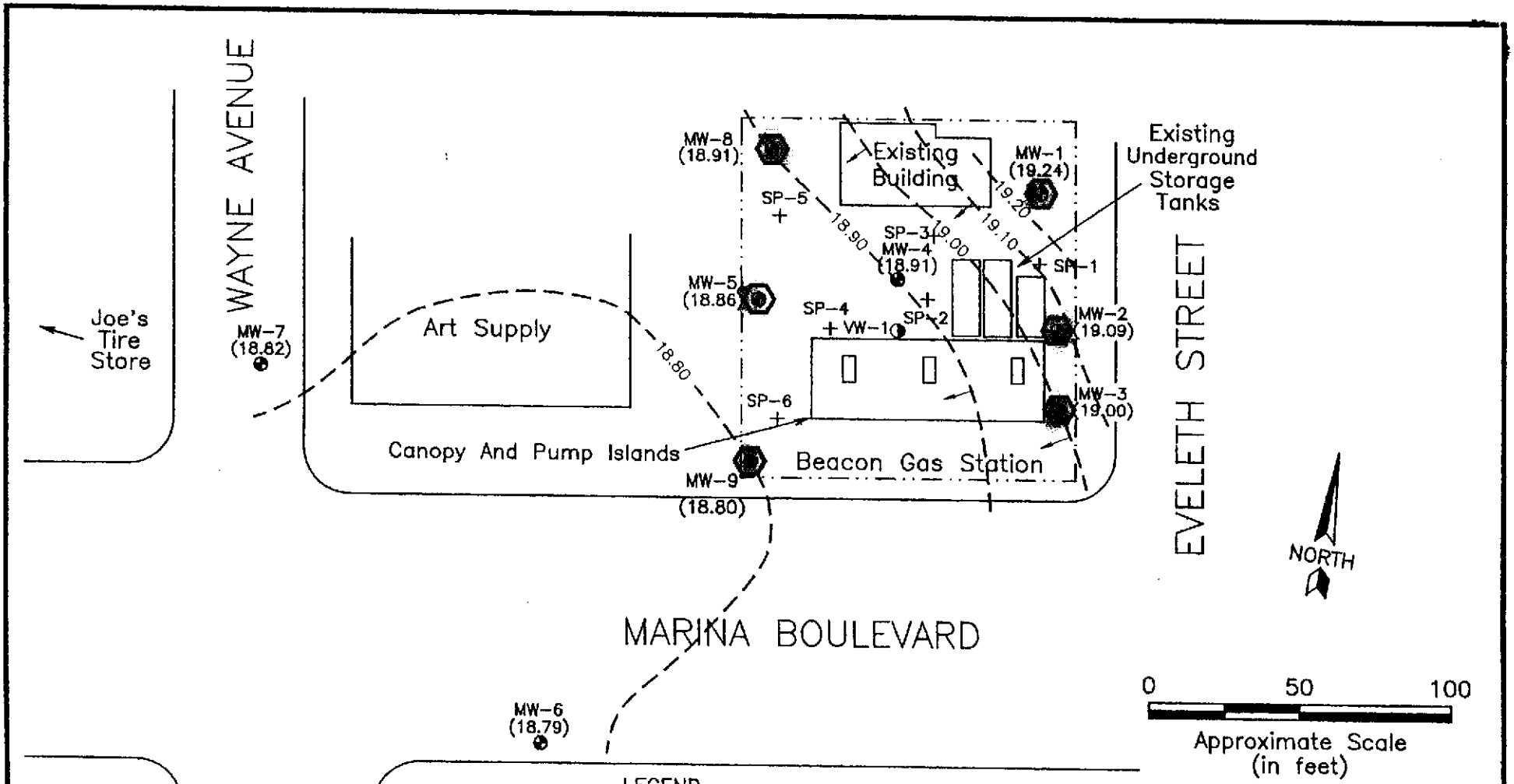

LEGEND

MW-6	Monitoring Well Location And Number
VW-1	Vapor Extraction Well Location And Number
MW-8	Monitoring Well/Vapor Extraction Well
SP-5	Sparge Well Location And Number
(13.82)	Ground Water Table Elevation In Feet
18.80	Ground Water Table Elevation Contour Indicating Inferred Flow Direction

Note: Base Map Adapted From Environmental Geotechnical Consultants, Inc. Dated 12/92. All Dimensions And Locations Not Verified By AMV.

FIGURE 3

GROUND WATER TABLE CONTOUR MAP (12/21/94)

BEACON STATION #720
1088 MARINA BOULEVARD
SAN LEANDRO, CALIFORNIA

Project No. 19030	Drawn CCB
File No. QMC4WTC3	Prepared SAL 1/5/95
Revision	Reviewed

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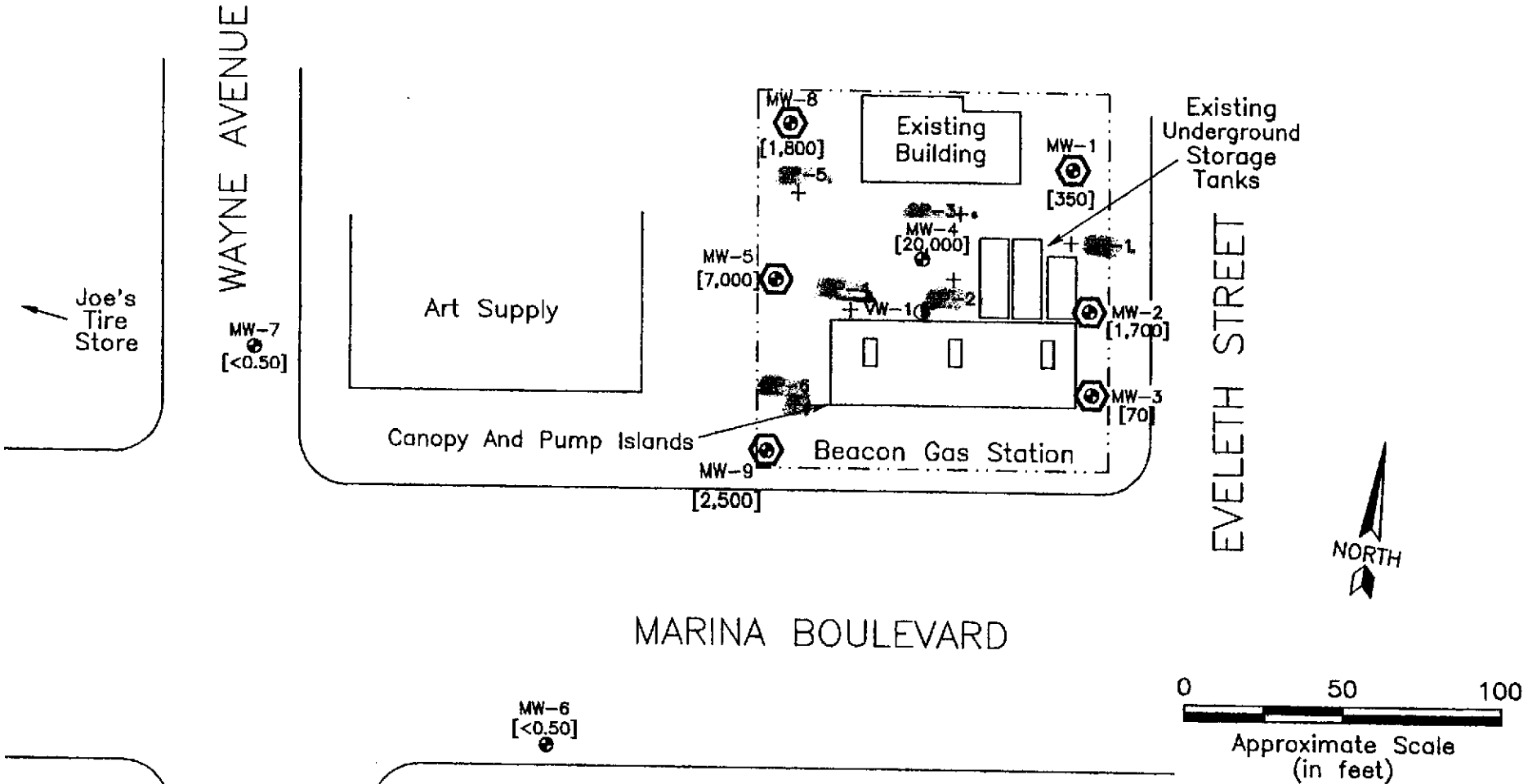

LEGEND

- MW-6 — Monitoring Well Location And Number
- VW-1 — Vapor Extraction Well Location And Number
- MW-8 — Monitoring Well/Vapor Extraction Well
- Location And Number
- [1,700] — Concentration of dissolved benzene in the ground water in ug/l

MW-9 sampled on 12/20/94, shortly after installation.

Note: Base Map Adapted From Environmental Geotechnical Consultants, Inc. Dated 12/92. All Dimensions And Locations Not Verified By AMV.

FIGURE 4

DISTRIBUTION OF DISSOLVED BENZENE IN THE GROUND WATER (12/19/94)

BEACON STATION #720
1088 MARINA BOULEVARD
SAN LEANDRO, CALIFORNIA

Project No.	Drawn
19030	CCB
File No.	Prepared
QMC4ICD4	SAL 1/5/95
Revision	Reviewed

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ENCLOSURE A

SOIL AND GROUND WATER SAMPLING TECHNIQUES

ENCLOSURE A

SOIL AND GROUND WATER SAMPLING TECHNIQUES

Proper sampling techniques were followed to assure that samples represented actual field conditions and that samples were labeled, preserved, and transported properly to retain sample integrity. This exhibit describes procedures followed by Acton • Mickelson • van Dam, Inc. (AMV), during collection of samples of subsurface soil and ground water. Sampling guidance documents from the American Society of Testing and Materials (ASTM), U.S. Environmental Protection Agency (EPA), and California Department of Health Services (DHS) were followed for all sampling procedures. Actual sampling procedures employed were based on field conditions and may differ from those described here.

1.0 EXPLORATION BORING/SOIL SAMPLING PROCEDURES

Soil borings and soil sampling were performed under the direction of an AMV geologist. The soil borings were advanced using a truck-mounted, hollow-stem auger drill rig.

Soil samples were collected at 5-foot vertical intervals. Soil sampling was done in accordance with ASTM 1586-84. Using this procedure, three 2-inch-diameter, 6-inch-length, brass tubes were placed in a California-type split-barrel sampler. The sampler was driven into the soil by a 140-pound weight falling 30 inches. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches is known as penetration resistance, or the "N" value. The "N" value was used as an empirical measure of the relative density of cohensionless soils and the consistency of cohesive soils.

Upon recovery of the split-barrel sampler, the brass tubes containing the soil were removed. The ends of one of the three brass tubes were sealed with Teflon tape and plastic end caps. The sample was labeled with an identification number, time, date, location, and requested laboratory analysis. The sample was placed in a plastic bag and stored at approximately 4° Celsius (C) in an ice chest for transport to the laboratory. Sample custody procedures outlined in Section 5.0 of this exhibit were followed. This was performed for each sample collection.

Soil in one of the brass tubes was extracted upon recovery, placed in a plastic bag, and sealed for later screening for organic vapors using a photoionization detector (PID) or a flame ionization detector (FID). The remaining portion of the soil sample was examined and a complete log of soil conditions was recorded on a soil boring log (Enclosure A) using the Unified Soil Classification System (Enclosure B). The soil was examined for grain size, color, and moisture content.

The split-barrel sampler was cleaned to prevent cross-contamination for each sampling interval using procedures described in Section 3.0.

Soil borings were normally advanced with 8- or 10-inch-diameter, hollow-stem augers. The soil generated from the soil borings was stored on visqueen.

2.0 WATER LEVEL AND LIQUID-PHASE HYDROCARBON (LPH) THICKNESS MEASUREMENTS AND GROUND WATER SAMPLING

2.1 Water Level and LPH Thickness Measurements

The static water level and/or LPH thickness in each well was measured prior to purging or sampling.

The depth to water/product was measured using an electronic interface probe. The wire of the interface probe is marked at 0.01 foot intervals. One tone is emitted from the interface probe if LPH is encountered; another tone for water. The wire of the interface probe was lowered slowly until LPH or water was encountered. At this point, the mark on the interface wire opposite the permanent reference point on the top of the well casing was read to the nearest 0.01 foot and recorded. If the first encountered substance was LPH, the probe was lowered until the tone corresponding to water was emitted. This depth was also recorded. The difference between the two depths corresponds to the LPH thickness. The interface probe was rinsed in deionized water between measurements in different wells.

A permanent reference point was marked on the well casings. The permanent reference point on the well casings was surveyed to a common reference point. All well casing riser elevations are known to within 0.01 foot.

Prior to well development, a disposable bailer was used to collect a sample of LPH, if present in a well, for subjective analysis. The sample was collected by gently lowering the bailer approximately one-half the bailer length past the air/LPH interface. The appearance (color, opacity, "freshness") was described and noted on field notes.

2.2 Well Evacuation and Development

After the static water level in a well was determined and prior to collection of a ground water sample, stagnant water was removed from the well casing and the surrounding gravel pack by bailing, pumping, or with a vacuum truck. At least three casing volumes of water were removed from each well from which a sample was collected. The volume of water in the casing was determined from the known elevation of the water surface, the well bottom elevation (as measured when the well is installed), and the well diameter.

If the well was bailed or pumped during purging, samples were collected and field analyzed for pH, temperature, and specific conductance. The well was considered stabilized when repeated readings of the following parameters were within the ranges indicated as follows:

- Specific conductance ±10 percent of the reading range
- pH ±0.1 pH unit
- Temperature ±0.5° C.

After stabilization, and after at least three well volumes were evacuated, a sample was collected for analysis. The field container used for well stabilization measurements, and the pH, temperature, and conductivity probes were rinsed between wells with deionized water.

All purge water was containerized and properly handled and documented for disposal. If the containers was stored on site, a label specifying the date of purging, source, and the known or suspected nature of the contents was affixed to each container.

2.3 Sample Collection, Preservation, and Handling

After purging, a new polyethylene disposable bailer was used to collect samples for analysis. The bailer was attached to a new disposable rope and lowered slowly into the water to avoid agitation of the collected sample. Containers for volatile organics analyses were filled completely so no airspace remained in the vial after sealing.

All sample containers were prewashed and prepared at the analyzing laboratory in accordance with quality assurance/quality control protocols of the laboratory. Only sample containers appropriate for the intended analyses were used.

3.0 DECONTAMINATION AND DISPOSAL PROCEDURES

3.1 Equipment Decontamination

All equipment that came in contact with potentially contaminated soil, drilling fluid, air, or water was decontaminated before each use. Decontamination consisted of steam-cleaning, a high-pressure, hot-water rinse, or trisodium phosphate (TSP) wash and freshwater rinse, as appropriate.

Drilling and sampling equipment were decontaminated as follows:

1. Drill rig augers, drill rods, and drill bits were steam-cleaned prior to use and between borings. Visible soil, grease, and other impurities were removed.

2. Soil sampling equipment was steam-cleaned prior to use and between each boring. Prior to individual sample collection, any sampling device was cleaned in a TSP solution and rinsed twice in clean water. Any visible soil residue was removed.

3. Water sampling containers were cleaned and prepared by the respective analytical laboratories.

4. Stainless steel or brass soil sampling tubes were steam-cleaned or washed in TSP solution and rinsed with clean water.

5. Field monitoring equipment (pH, conductivity, or temperature probes) was rinsed with clean water prior to use and between samples.

4.0 FIELD MEASUREMENTS

Field data were collected during various sampling and monitoring activities; this section describes routine procedures followed by personnel performing field measurements. The methods presented below are intended to ensure that field measurements are consistent and reproducible when performed by various individuals.

4.1 Buried Utility Locations

Prior to commencement of work on site, AMV contacted appropriate utility companies to have underground utility lines located. AMV also researched the location of all underground utilities using past site construction and surveying plans and by conducting a ground reconnaissance of the area. All work associated with the borings was preceded by hand augering to a minimum depth of 5 feet below grade to avoid contact with underground utilities.

4.2 Lithologic Logging

A log of soil conditions encountered during the drilling and sample collection (Enclosure A) was maintained using the Unified Soil Classification System (Enclosure B) by an AMV geologist. All boring logs were reviewed by a California registered geologist.

The collected soil samples were examined and the following information recorded: boring location, sample interval and depth, blow counts, color, soil type, moisture content (qualitative), and depth at which ground water (if present) is first encountered. Also recorded on the soil boring logs were the field screening results derived from the use of a portable PID or FID.

4.3 Disposal Procedures

Soils and fluids that were produced and/or used during the installation and sampling of borings, and that are known or suspected to contain potentially hazardous materials, were contained during the above operations. These substances were retained on site until chemical testing had been completed to determine the proper means of disposal. Handling and disposal of substances known or suspected to contain potentially hazardous materials complied with the applicable regulations of DHS, the California Department of Water Resources, and any other applicable regulations. Soils and fluids produced and/or used during the above-described operations that appeared to contain potentially hazardous materials were disposed of appropriately.

Residual substances generated during cleaning procedures that are known or suspected to pose a threat to human health or the environment were placed in appropriate containers until chemical testing had been completed to determine the proper means for their disposal.

4.4 Conductivity, Temperature, and pH

Specific conductance, water temperature, and pH measurements were made when a water sample was collected. Regardless of the sample collection method, a representative water sample was placed in a transfer bottle used solely for field parameter determinations. A conventional pH meter with a combination electrode or equivalent was used for field-specific conductance measurements. Temperature measurements were performed using standard thermometers or equivalent temperature meters. Combination instruments capable of measuring two or all three of the parameters may have also been used.

All instruments were calibrated in accordance with manufacturer methods. The values for conductivity standards and pH buffers used in calibration were recorded daily in a field notebook. All probes were thoroughly cleaned and rinsed with fresh water prior to any measurements, in accordance with Section 3.1.

5.0 SAMPLE CUSTODY

This section describes standard operating procedures for sample custody and custody documentation. Sample custody procedures were followed through sample collection, transfer, analysis, and ultimate disposal. The purpose of these procedures is to assure that (1) the integrity of samples was maintained during their collection, transportation, and storage prior to analysis and (2) post-analysis sample material was properly disposed of. Sample custody is divided into field procedures and laboratory procedures, as described below.

5.1 Field Custody Procedures

Sample quantities, types, and locations were determined before the actual fieldwork commenced. As few people as possible handled samples. The field sampler was personally responsible for the care and custody of the collected samples until they were properly transferred.

5.1.1 Field Documentation

Each sample was labeled and sealed properly immediately after collection. Sample identification documents was carefully prepared so that identification and chain-of-custody records could be maintained and sample disposition could be controlled. Forms were filled out with waterproof ink. The following sample identification documents were utilized.

- Sample labels
- Field notebook
- Chain-of-custody forms

5.1.2 Sample Labels

Sample labels provide identification of samples. Preprinted sample labels were provided. Where necessary, the label was protected from water and solvents with clean label-protection tape. Each label contained the following information:

- Name of collector
- Date and time of collection
- Place of collection
- AMV project number
- Sample number
- Preservative (if any)

5.1.3 Field Notebook

Information pertinent to a field survey, measurements, and/or sampling were recorded in a bound notebook. Entries in the notebook may have included the following:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Type of sampled or measured media (e.g., soil, ground water, air, etc.)
- Sample collection or measurement method(s).
- Number and volume of sample(s) taken.
- Description of sampling point(s).
- Description of measuring reference points.
- Date and time of collection or measurement.
- Sample identification number(s).
- Sample preservative (if any).
- Sample distribution (e.g., laboratory).
- Field observations/comments.
- Field measurements data (pH, etc.).

5.1.4 Chain-of-Custody Record

A chain-of-custody record was filled out for and accompanied every sample and every shipment of samples to the analytical laboratories in order to establish the documentation necessary to trace sample possession from the time of collection. The record contained the following information:

- Sample or station number or sample I.D.
- Signature of collector, sampler, or recorder.
- Date and time of collection.
- Place of collection.
- Sample type.
- Signatures of persons involved in the chain of possession.
- Inclusive dates of possession.

The laboratory portion of the form was completed by laboratory personnel and contains the following information:

- Name of person receiving the sample.
- Laboratory sample number.
- Date and time of sample receipt.
- Analyses requested.
- Sample condition and temperature.

5.1.5 Sample Transfer and Shipment

Samples were always accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the chain-of-custody record. Samples were packaged properly for shipment and dispatched to the appropriate laboratory for analysis. The chain-of-custody record accompanied each shipment. The method of shipment, courier name(s), and other pertinent information was entered in the chain-of-custody record.

5.2 Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample label matched that on the chain-of-custody record. Information regarding method of delivery and sample conditions was also checked on the chain-of-custody record. The custodian then entered the appropriate data into the laboratory sample tracking system. The laboratory custodian may have used the sample number on the sample label or may have assigned a unique laboratory number to each sample. The custodian then transferred the sample(s) to the proper analyst(s) or stored the sample(s) in the appropriate secure area.

Laboratory personnel are responsible for the care and custody of samples from the time they are received until the sample is exhausted. Once at the laboratory, the samples are handled in accordance with U.S. Environmental Protection Agency SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition, for the intended analyses. All data sheets, chromatographs, and laboratory records were filed as part of the permanent documentation.

5.3 Corrections to Documentation

Original data recorded in field notebooks, chain-of-custody records, and other forms were written in ink. These documents were not altered, destroyed, or discarded, even if they were illegible or contained inaccuracies that required a replacement document.

If an error was made or found on a document, the individual making the corrections did so by crossing a single line through the error, entering the correct information, and initialing and dating the change. The erroneous information was obliterated. Any subsequent error(s) discovered on a document were corrected. All corrections were initialed and dated.

5.4 Sample Storage and Disposal

Samples and extracts were retained by the analytical laboratory for 60 days after a written report was issued by the laboratory. Unless notified by the program manager, excess or unused samples were disposed of by the laboratory in an appropriate manner consistent with applicable government regulations.

Boring Log Key

Log of Soil Boring: Example

Project Number: 00000.00

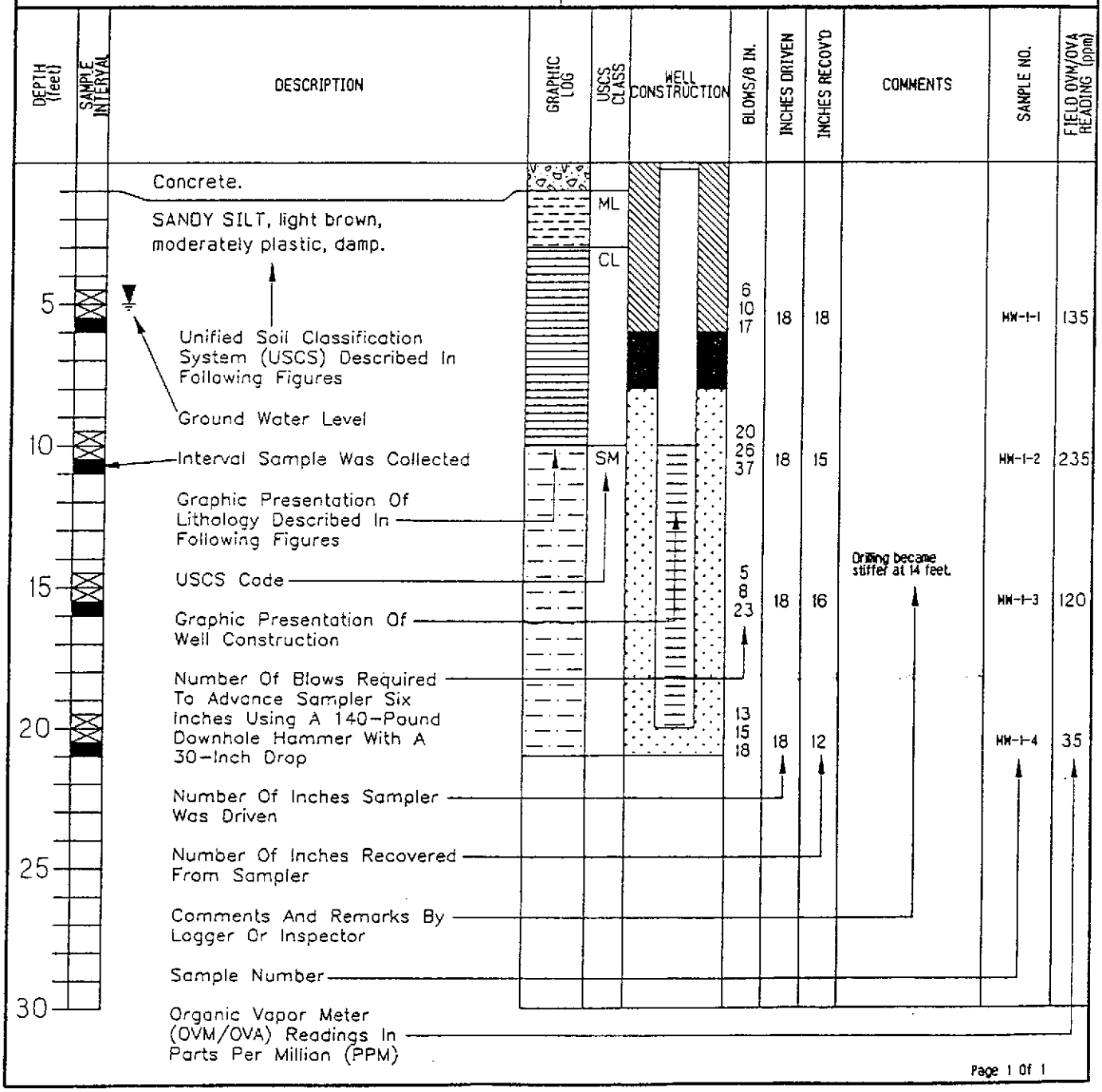
Location: Generic Properties
1234 Sweetwater Street
Anytown, California

Drilling Company: WEDIG Drilling Company
Drilled By: I. M. Augering
Drilling Method: HSA CME-75 high torque drill rig
Sampling Method: California modified split-spoon sampler fitted with 6" brass sample sleeves.

OVM/OVA: hNu PID with 10.2 eV probe

Drilling	Time	Date
Start	8:00 am	1/1/93
Finish	10:45 am	1/1/93

Water Depth (Date): 5 Feet (1/2/93)
Casing Elevation: 120.5 Feet
Completion Depth: 21 Feet
Logged By:
Checked By:

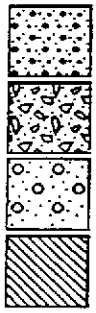


UNIFIED SOIL CLASSIFICATION SYSTEM CHART

Major Divisions			Group Symbols	Typical Names
Coarse–Grained Soils More Than 50% Retained On No. 200 Sieve *	Gravels 50% Or More Of Coarse Fraction Retained On No. 4 Sieve	Clean Gravels	GW	Well–graded gravels and gravel–sand mixtures, little or no fines.
			GP	Poorly graded gravels and gravel–sand mixtures, little or no fines.
		Gravels With Fines	GM	Silty gravels, gravel–sand–silt mixtures.
			GC	Clayey gravels, gravel–sand–clay mixtures.
	Sands More Than 50% Of Coarse Fraction Passes No. 4 Sieve	Clean Sands	SW	Well–graded sands and gravelly sands, little or no fines.
			SP	Poorly graded sands and gravelly sands, little or no fines.
		Sands With Fines	SM	Silty sands, sand–silt mixtures.
			SC	Clayey sands, sand–clay mixtures.
Fine–Grained Soils 50% Or More Passes No. 200 Sieve *	Silts And Clays Liquid Limit 50% Or Less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	Silts And Clays Liquid Limit Greater Than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity.
Highly Organic Soils			PT	Peat, muck and other highly organic soils.

* Based On The Material Passing The 3–inch (75–mm) Sieve.

Additional Fill Patterns



Road Base/ Asphalt

Concrete

Backfill

Cement

Relative Density

Sands, Gravels, And Non–Plastic Silts	Blows/Foot *
Very Loose	0 – 4
Loose	4 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	Over 50

Consistency

Clays And Plastic Silts	Strength **	Blows/Foot *
Very Soft	0 – 1/4	0 – 2
Soft	1/4 – 1/2	2 – 4
Firm	1/2 – 1	4 – 8
Stiff	1 – 2	8 – 16
Very Stiff	2 – 4	16 – 32
Hard	Over 4	Over 32

* Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1–3/8 inch I.D.) split spoon (ASTM D–1586).

** Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D–1586), pocket penetrometer, torvane, or visual observation.

ENCLOSURE B

SOIL BORING LOGS

Acton • Mickelson • van Dam, Inc.

Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: SP-1

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	13:30	12/20/94
Finish	14:40	12/20/94

Water Depth (Date) : 14.07 Feet (12/21/94)

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

Completion Depth: 28 Feet
Logged By: S. Liaty
Checked By:

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark grayish brown, (10 YR 4/2), damp, trace silt		CL		3 3 5	18	18		SP1-1
5										
						7 8 10	18	18		SP1-2
10										
		Becomes dark yellowish brown, (10 YR 4/2) and [redacted] feet				5 5 7	18	18	Samples collected from below the water table for lithology only.	SP1-3
15										
		[redacted] at 18 feet.								
20										
		SANDY CLAY, dark yellowish brown, (10 YR 3/4), saturated, some silt, fine-grained sand		CL						
25										
		Trace gravel at 28 feet							Boring terminated at 28 feet	
		Total depth = 28 feet								
30										

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Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: SP-2

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	14:30	12/21/94
Finish	15:45	12/21/94

Water Depth (Date): 13.94 Feet (12/21/94)

Completion Depth: 28 Feet

Logged By: S. Liaty

Checked By:

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark grayish brown, (10 YR 4/2), damp		CL						
5						7 7 7	18	0	No sample recovered at 5 feet	
10						3 6 8	18	18		SP2-2
15		Moist to wet at 15 feet				2 4 7	18	18		SP2-3
20		SANDY CLAY, dark yellowish brown, (10 YR 3/4), [illegible], some silt, fine-grained sand		CL		7 8 10	18	14		
25						3 6 12	18	18		
		Total depth = 28 feet							Boring terminated at 28 feet	
30										

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Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: SP-3

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	12:40	12/20/94
Finish	12:50	12/20/94

Water Depth (Date): 14.12 Feet (12/21/94)

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

Completion Depth: 28 Feet
Logged By: S. Liaty
Checked By: JM

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark grayish brown, (10 YR 4/2), damp, trace silt		CL		9 14 19	18	18		SP3-1
5										
						3 3 7	18	18		SP3-2
10										
						3 3 5	18	18		SP3-3
15										
		[illegible] with some fine-grained sand at 20 feet								
20										
25		SAND, dark yellowish brown, (10 YR 4/6), saturated, fine- to medium--grained, some silt		SP						
		Total depth = 28 feet							Boring terminated at 28 feet	
30										

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Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: SP-4

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	10:50	12/20/94
Finish	11:30	12/20/94

Water Depth (Date) : 13.92 Feet (12/21/94)

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

Completion Depth: 28 Feet
Logged By: S. Liaty
Checked By:

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark grayish brown, (10 YR 4/2), damp, trace silt		CL		10 12 12	18	18		SP4-1
5										
						4 6 9	18	18		SP4-2
10										
		Becomes brown (10 YR 4/3) with trace fine-grained sand at 15 feet				7 7 12	18	18	Samples collected below water table for lithology only.	SP4-3
15		[redacted]								
20		[redacted] feet								
		SANDY CLAY, dark yellowish brown, (10 YR 3/4), [redacted] some silt, fine-grained sand		CL						
25										
		Total depth = 28 feet							Boring terminated at 28 feet	
30										

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Log of Soil Boring: SP-5

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	13:15	12/21/94
Finish	14:25	12/21/94

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

Completion Depth: 28 Feet
Logged By: S. Liaty
Checked By:

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark grayish brown, (10 YR 4/2), damp, some silt		CL		3 3 4	18	0	No sample recovered at 5 feet	
10		Becomes dark yellowish brown, (10 YR 4/6) at 10 feet				6 6 8	18	14		SP5-2
15		Moist at 15 feet with some fine-grained sand				4 7 10	18	16		SP5-3
20										
25		SANDY CLAY, dark yellowish brown, (10 YR 4/6), [redacted] trace silt, fine-grained sand		CL						
30		Total depth = 28 feet							Boring terminated at 28 feet	

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Log of Soil Boring: SP-6

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	15:20	12/20/94
Finish	16:05	12/20/94

Water Depth (Date) : 14.00 Feet (12/21/94)

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"X6" brass sample sleeves

Completion Depth: 28 Feet
Logged By: S. Liaty
Checked By:

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
5		CLAY, very dark gray, (10 YR 3/1), damp		CL		7 8 10	18	18		SP6-1
10						3 3 5	18	18		SP6-2
15		Decomes dark yellowish brown, (10 YR 4/2) and [redacted] at 15 feet				7 7 10	18	18	Samples collected from below water table for lithology only.	SP6-3
20		[redacted] at 20 feet								
25		SANDY CLAY, dark yellowish brown, (10 YR 4/2), saturated, fine- to medium-grained sand		CL						
		SAND, dark yellowish brown, (10 YR 4/2), saturated, medium-grained		SP					Boring terminated at 28 feet	
30		Total depth = 28 feet								

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Log of Soil Boring: VW-1

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	11:20	12/21/94
Finish	12:05	12/21/94

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 8" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

Completion Depth: 14 Feet
Logged By: S. Liaty
Checked By:

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
		Asphalt and backfill material								
		CLAY, dark greenish brown, (10 YR 4/2), damp		CL		3 3 7	18	0	No sample recovered	
10		Becomes dark yellowish brown, (10 YR 4/6) at 9 feet				5 7 9	18	18		VW1-2
						5 5	12	12		VW1-3
15		Total depth = 14 feet							Boring terminated at predetermined depth	
20										
25										
30										

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Log of Soil Boring: MW-9

Project Number: 19030.03

Location: Beacon Station #720
1088 Marina Boulevard
San Leandro, California

Drilling	Time	Date
Start	08:45	12/20/94
Finish	09:30	12/20/94

Water Depth (Date): 13.76 Feet (12/21/94)
Casing Elevation: 32.56 Feet
Completion Depth: 25 Feet
Logged By: S. Liaty
Checked By:

Drilling Company: V & W Drilling
Drilled By: Tim Whitney
Drilling Method: 10" O.D. H.S.A.; Mobile B-61 HDX
Sampling Method: California modified split spoon sampler fitted with 2"x6" brass sample sleeves

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOV'D	COMMENTS	SAMPLE NO.
0		Asphalt and backfill material								
		CLAY, very dark gray, (7.5 YR n3/3), damp, minor silt		CL		5 5 7	18	18		MW1-1
5										
10						3 9 7	18	18		MW2-2
15		Becomes dark grayish brown, (10 YR 4/2) and [redacted]				5 5 7	18	10	Samples collected from below the water table for lithology only.	MW1-3
20		SANDY CLAY, dark grayish brown, (10 YR 4/2), saturated, fine- to medium-grained sand		CL						
25		Total depth = 25 feet								
30										

ENCLOSURE C

SOIL SAMPLE ANALYTICAL REPORTS

WEST LABORATORY

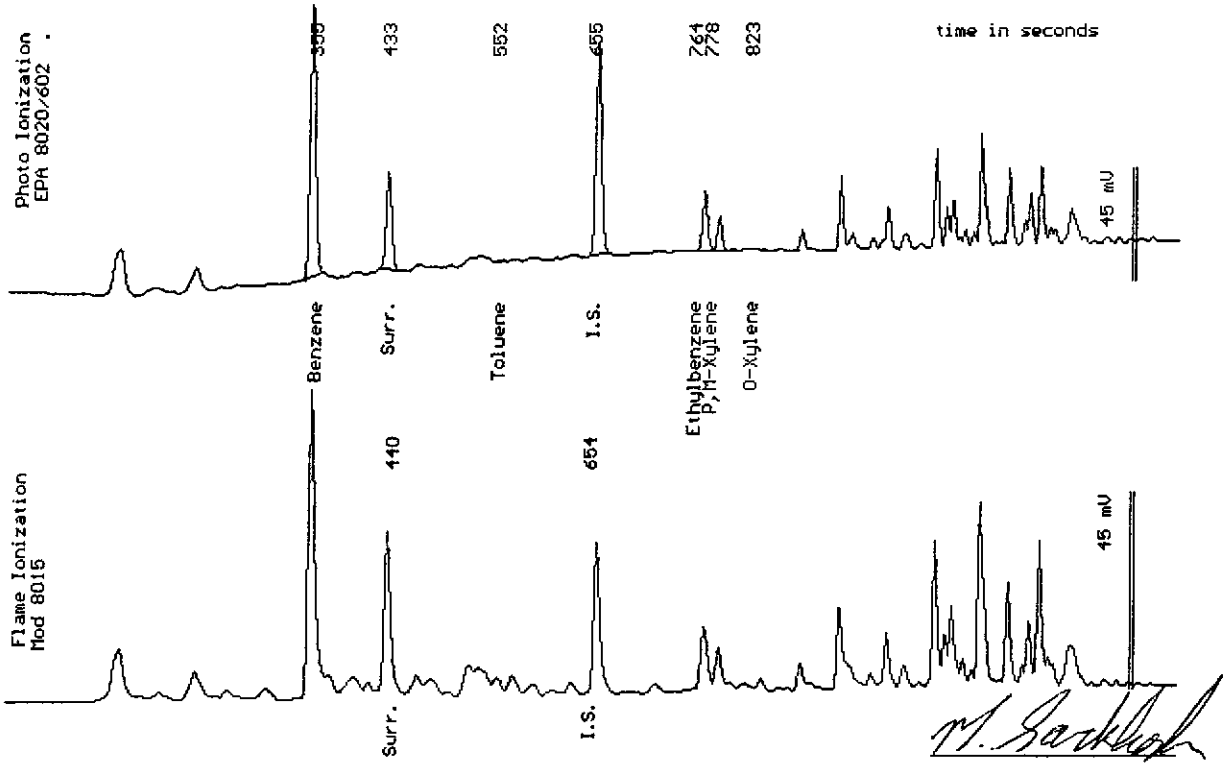
Sample Log 11010

11010-1

Sample: **VW1-2**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.12
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	.027
Total Xylenes	(.0050)	.014
TPH as Gasoline	(1.0)	1.2
Surrogate Recovery		96 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

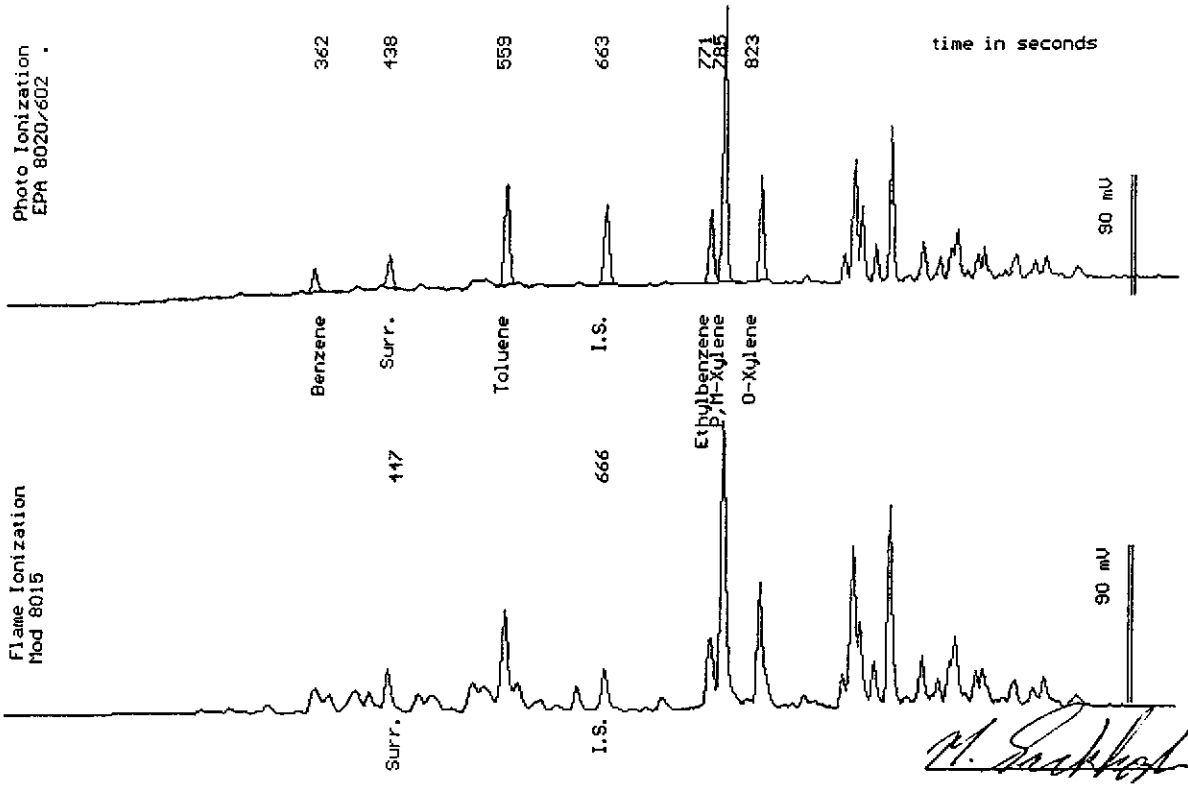
Sample Log 11010

11010-2

Sample: **VW1-3**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:100 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.50)	12
Toluene	(.50)	54
Ethylbenzene	(.50)	36
Total Xylenes	(.50)	180
TPH as Gasoline	(100)	1600
Surrogate Recovery		84 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

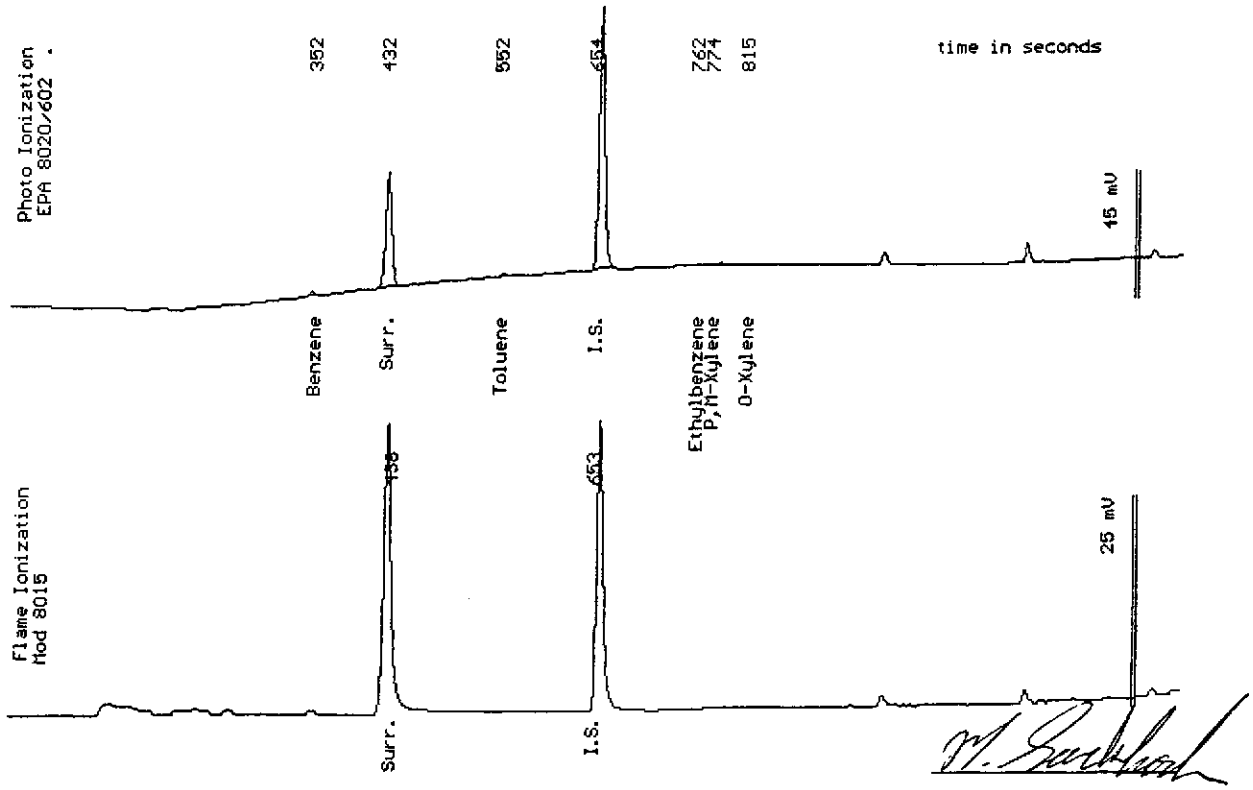
Sample Log 11010

11010-3

Sample: **MW9-1**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		105 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

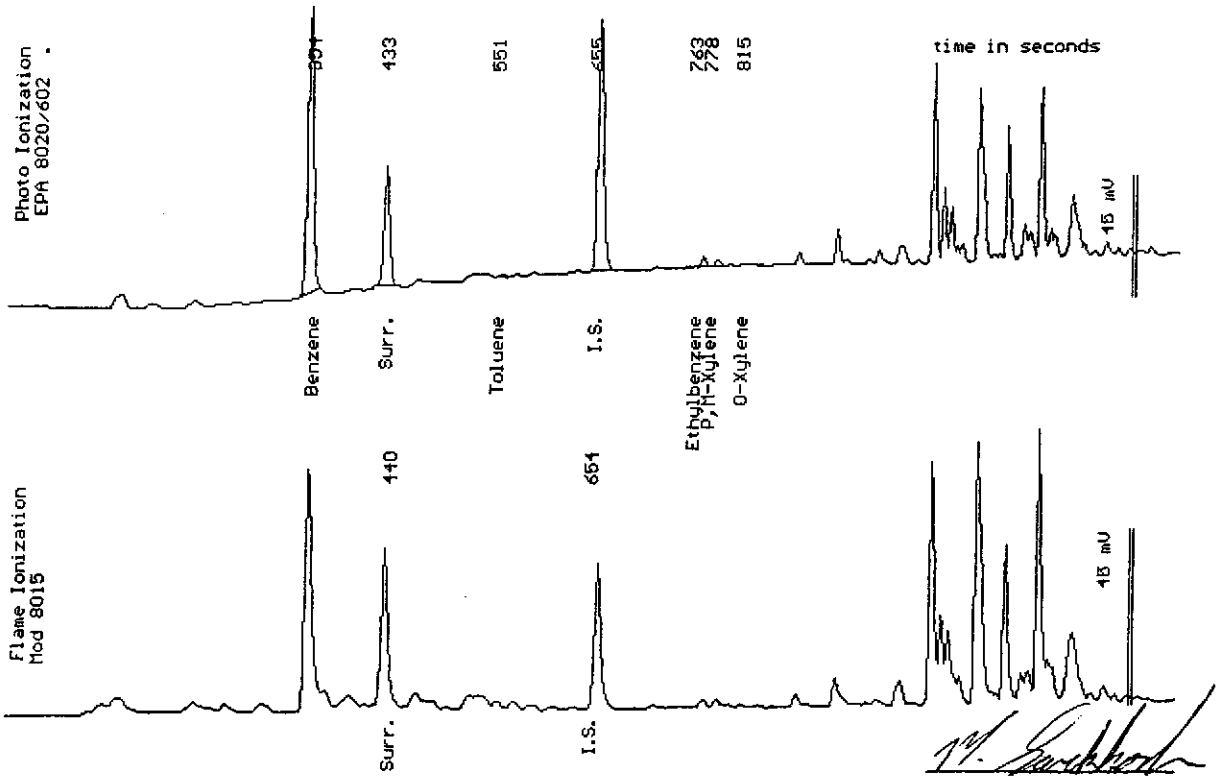
Sample Log 11010

11010-4

Sample: **MW9-2**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.10
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	1.0
Surrogate Recovery		97 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

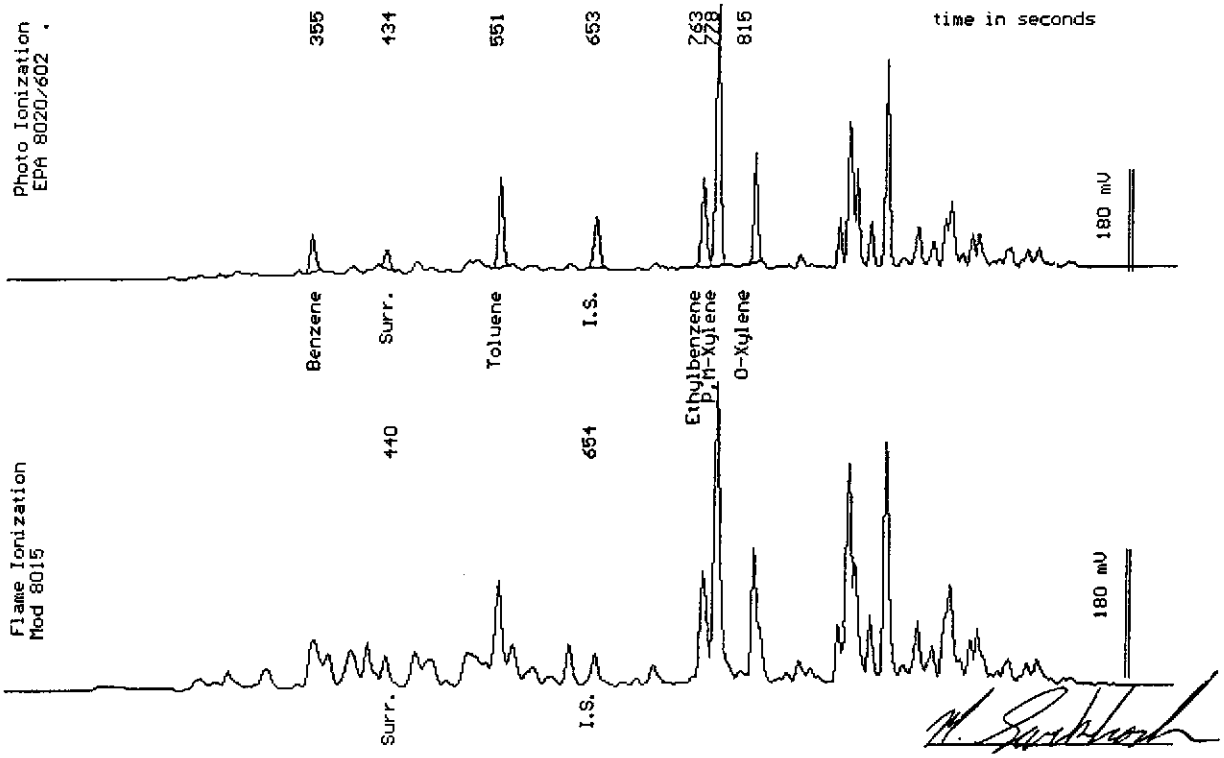
Sample Log 11010

11010-5

Sample: **MW9-3**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:10 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.050)	2.8
Toluene	(.050)	6.9
Ethylbenzene	(.050)	7.0
Total Xylenes	(.050)	29
TPH as Gasoline	(10)	280
Surrogate Recovery		77 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

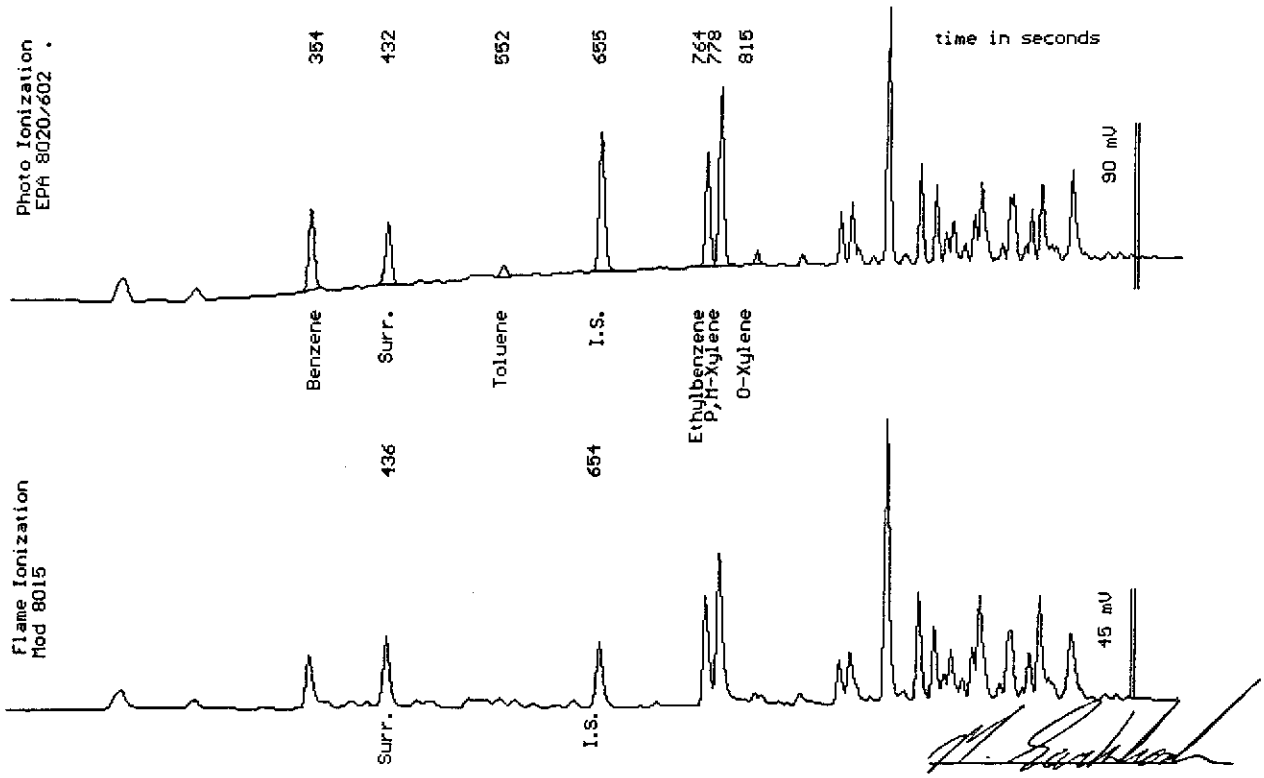
Sample Log 11010

11010-7

Sample: SP1-2

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.049
Toluene	(.0050)	.0063
Ethylbenzene	(.0050)	.074
Total Xylenes	(.0050)	.12
TPH as Gasoline	(1.0)	1.7
Surrogate Recovery		97 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

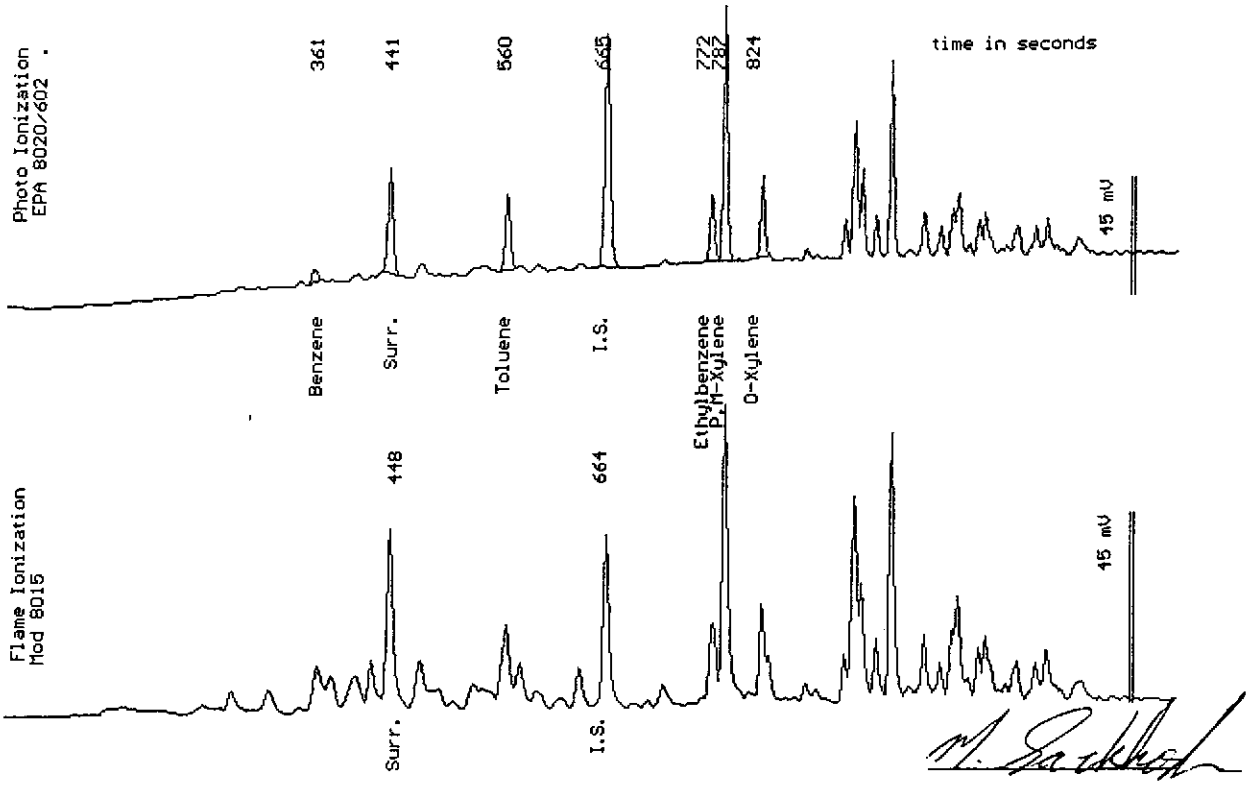
Sample Log 11010

11010-8

Sample: SP1-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:100 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.50)	1.0
Toluene	(.50)	6.3
Ethylbenzene	(.50)	5.7
Total Xylenes	(.50)	26
TPH as Gasoline	(100)	270
Surrogate Recovery		92 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

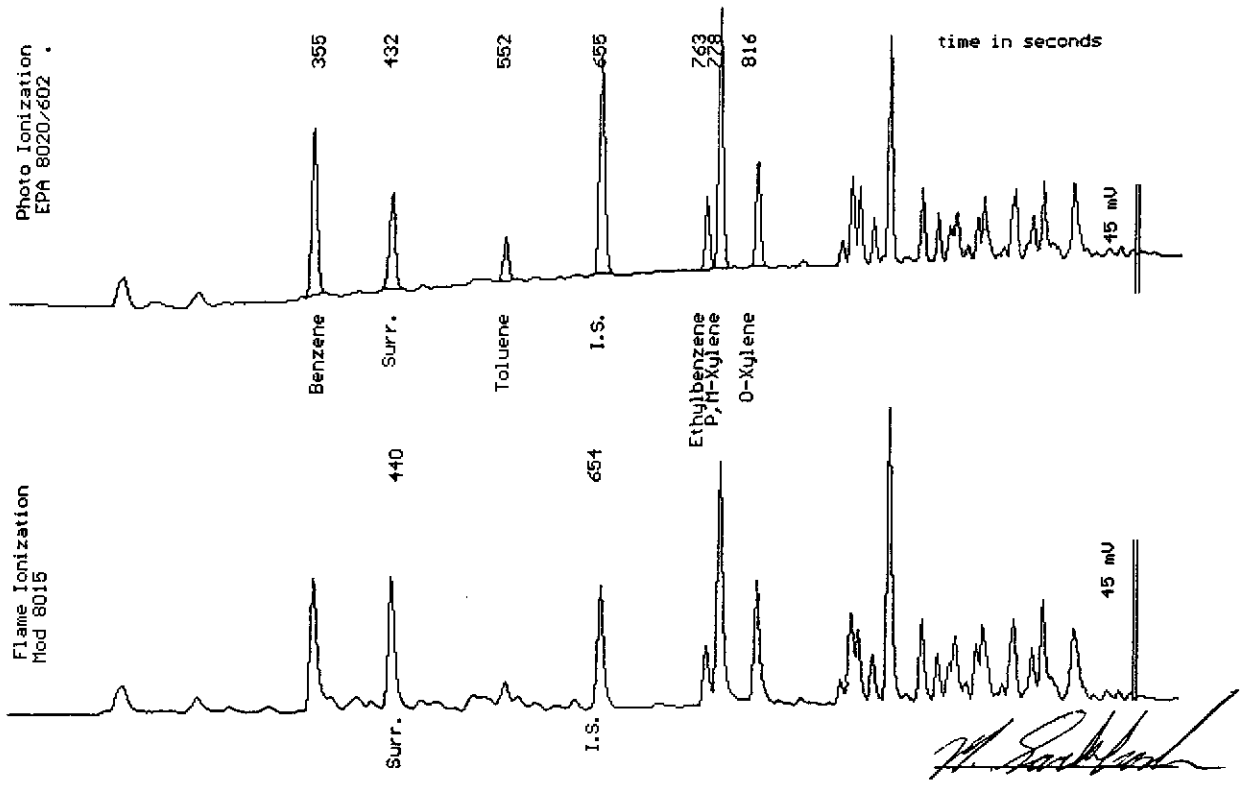
Sample Log 11010

11010-9

Sample: SP2-2

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.074
Toluene	(.0050)	.019
Ethylbenzene	(.0050)	.030
Total Xylenes	(.0050)	.16
TPH as Gasoline	(1.0)	1.3
Surrogate Recovery		99 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

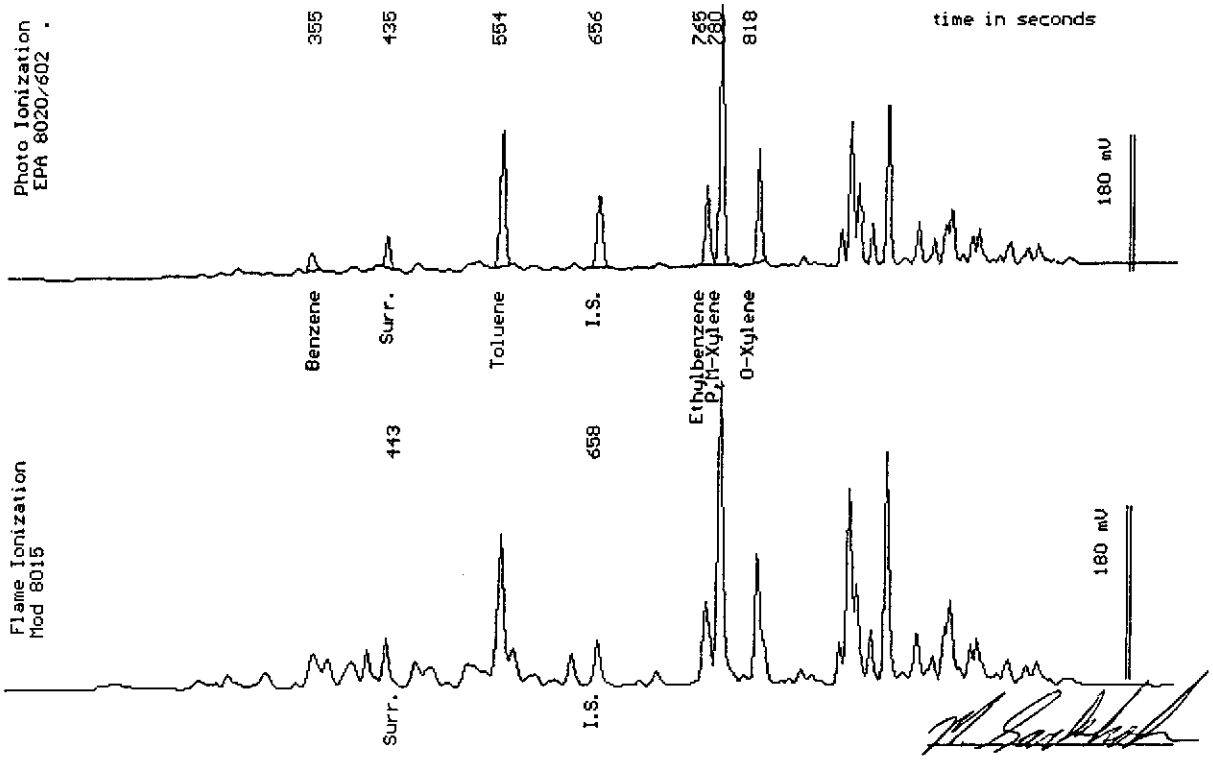
Sample Log 11010

11010-10

Sample: SP2-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:100 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.50)	4.9
Toluene	(.50)	36
Ethylbenzene	(.50)	21
Total Xylenes	(.50)	94
TPH as Gasoline	(100)	1100
Surrogate Recovery		84 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

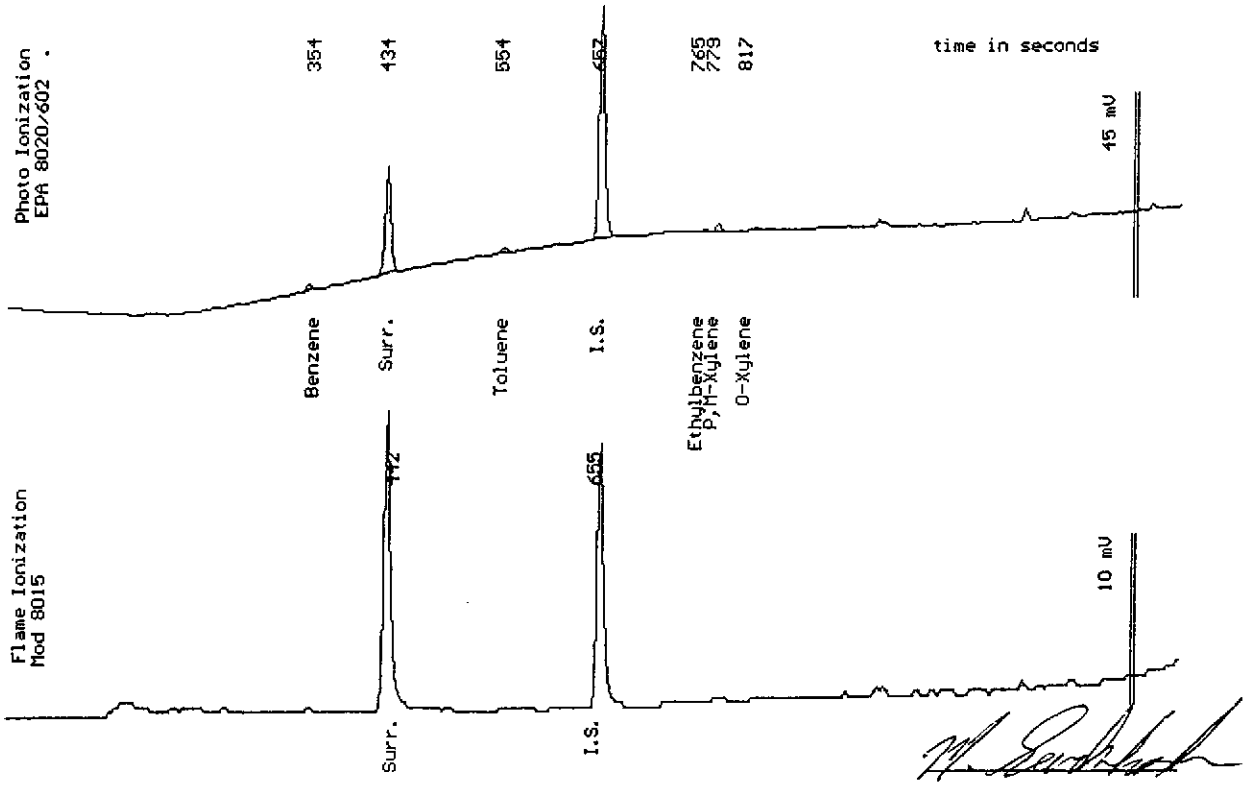
Sample Log 11010

11010-11

Sample: SP3-1

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6136Z
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		93 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

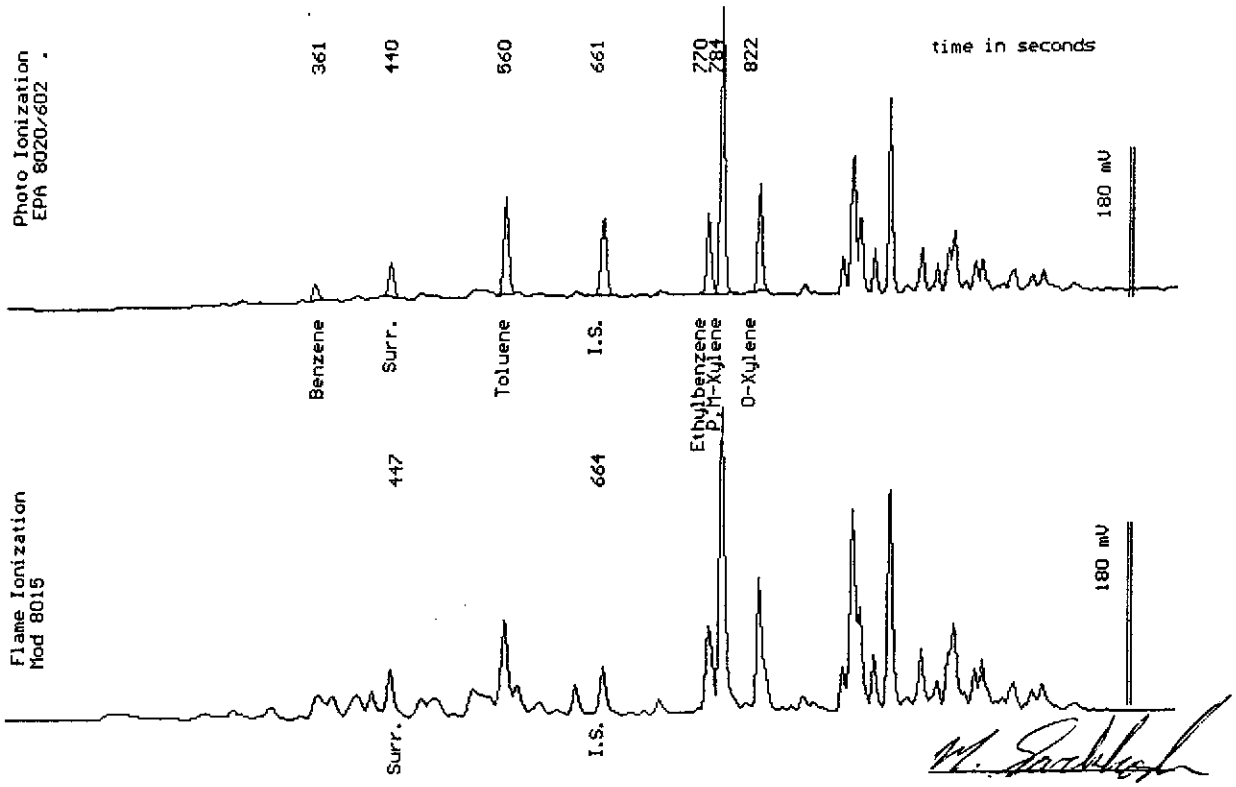
Sample Log 11010

11010-13

Sample: SP3-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:100 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) ug/kg	Measured Value ug/kg	
Benzene	(.50)	3.9	
Toluene	(.50)	25	
Ethylbenzene	(.50)	20	
Total Xylenes	(.50)	93	
TPH as Gasoline	(100)	900	
Surrogate Recovery		89	%



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

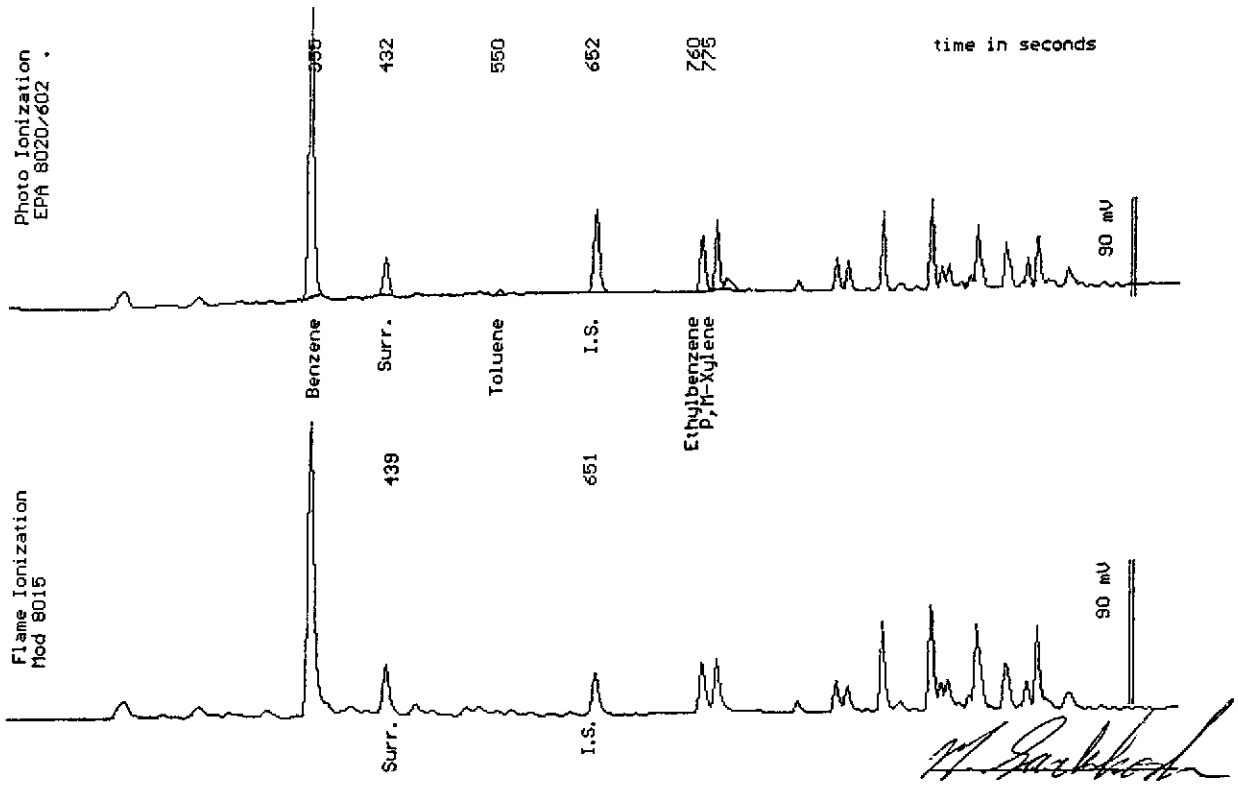
Sample Log 11010

11010-15

Sample: SP4-2

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.30
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	.063
Total Xylenes	(.0050)	.065
TPH as Gasoline	(1.0)	2.0
Surrogate Recovery		88 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

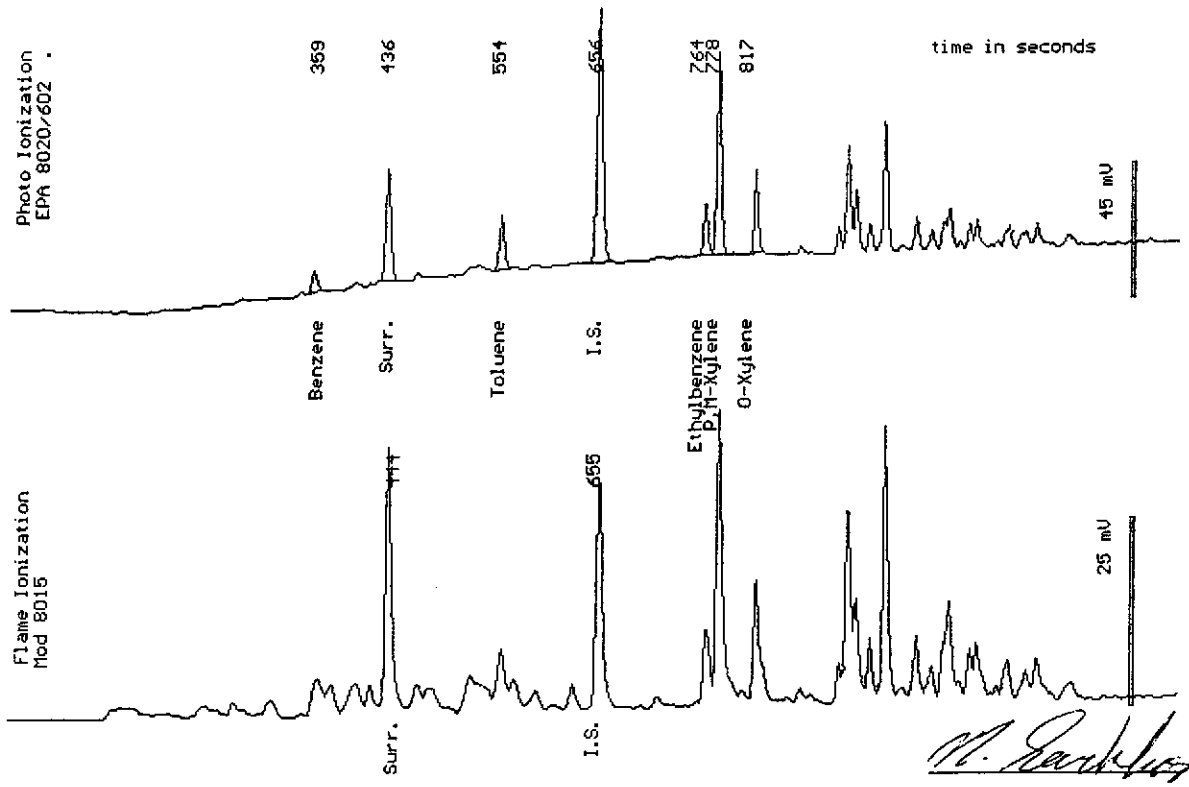
Sample Log 11010

11010-16

Sample: SP4-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:100 QC Batch : 6137DD
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg	
Benzene	(.50)	3.2	
Toluene	(.50)	8.1	
Ethylbenzene	(.50)	8.4	
Total Xylenes	(.50)	42	
TPH as Gasoline	(100)	340	
Surrogate Recovery		96	%



Date Analyzed: 12-30-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

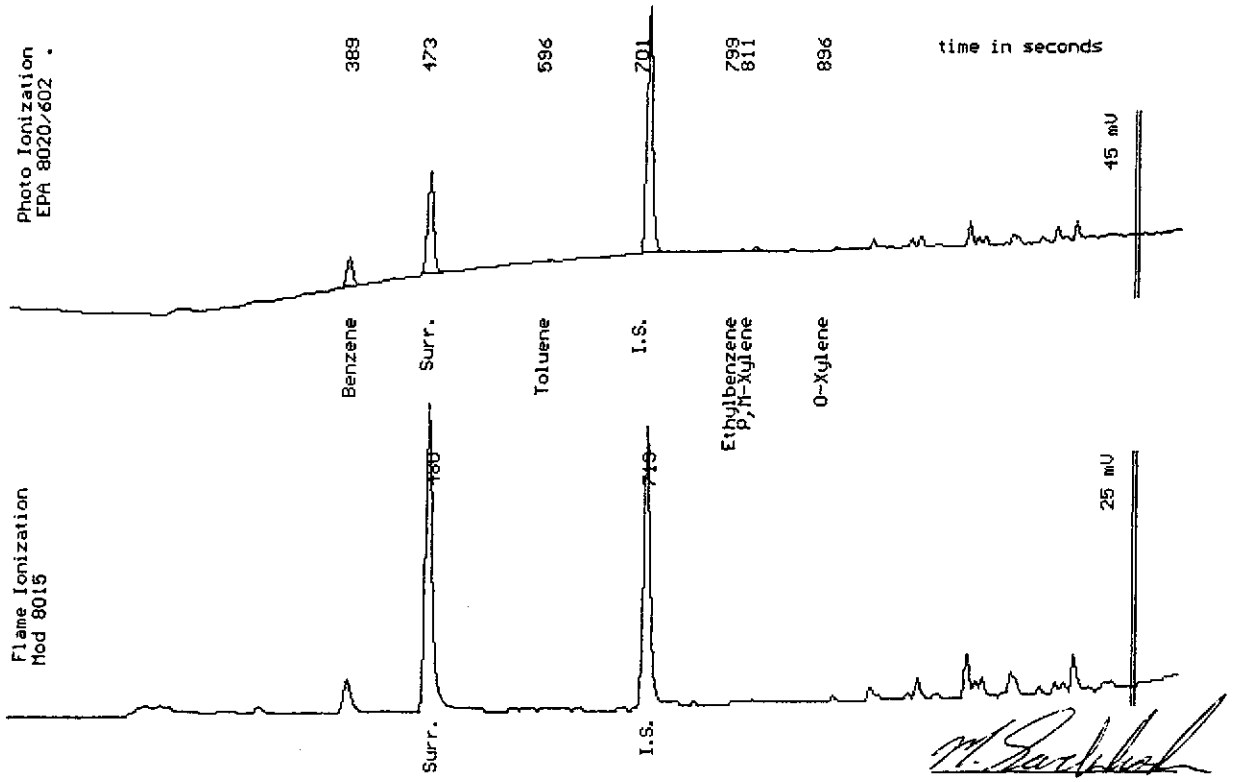
Sample Log 11010

11010-17

Sample: SP5-2

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:1 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.011
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		96 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

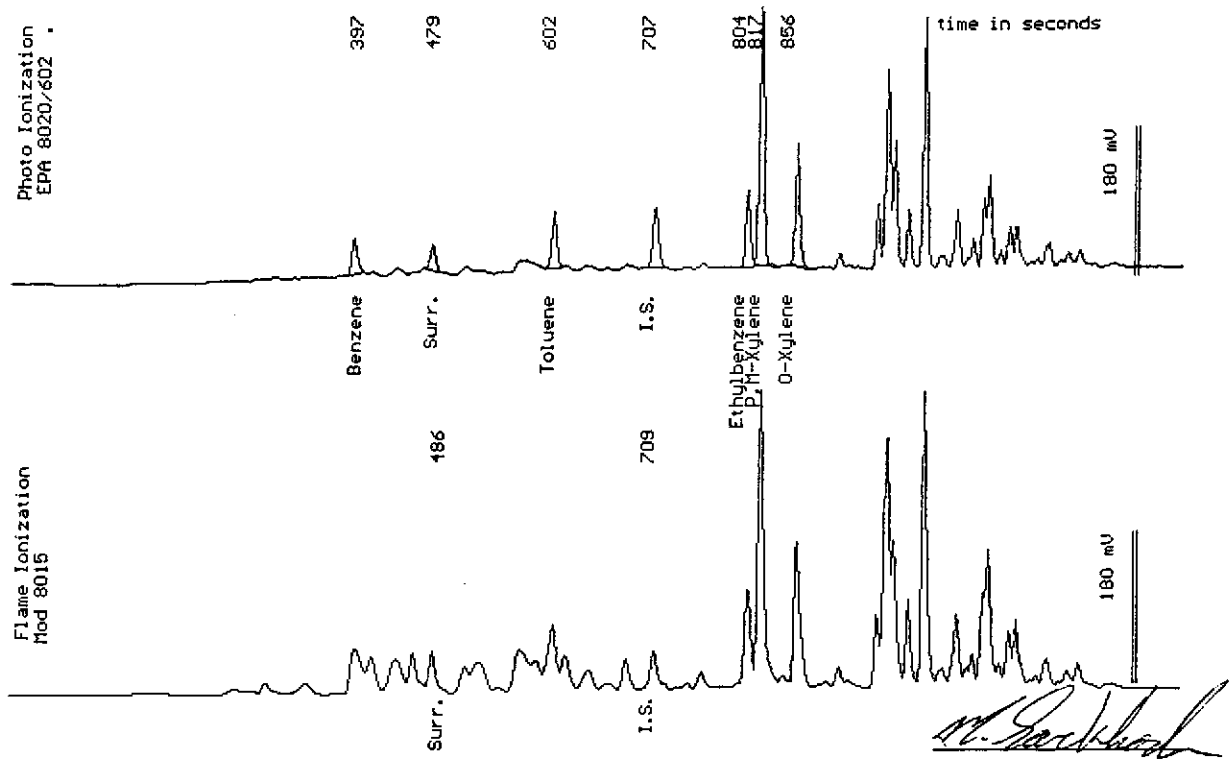
Sample Log 11010

11010-18

Sample: SP5-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:1 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg	
Benzene	(.0050)	.44	
Toluene	(.0050)	.63	
Ethylbenzene	(.0050)	.94	
Total Xylenes	(.0050)	4.6	
TPH as Gasoline	(1.0)	57	
Surrogate Recovery		83	%



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

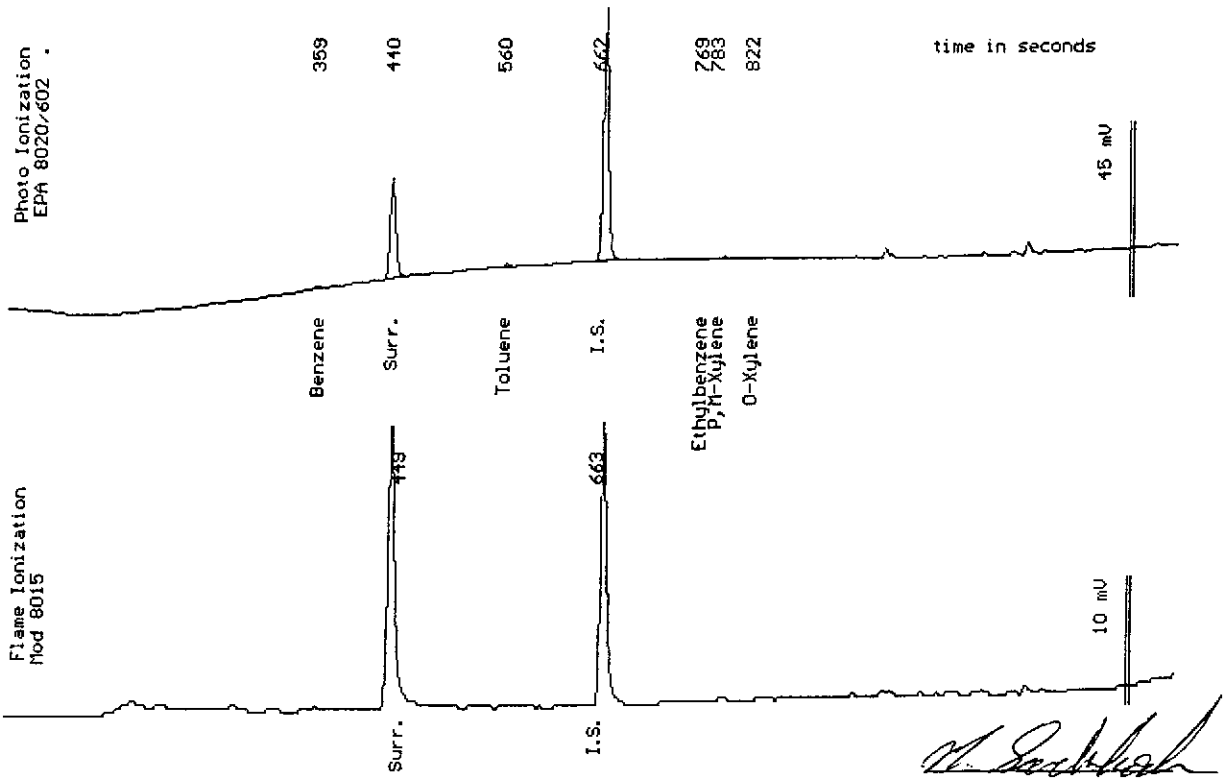
Sample Log 11010

11010-19

Sample: SP6-1

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		96 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

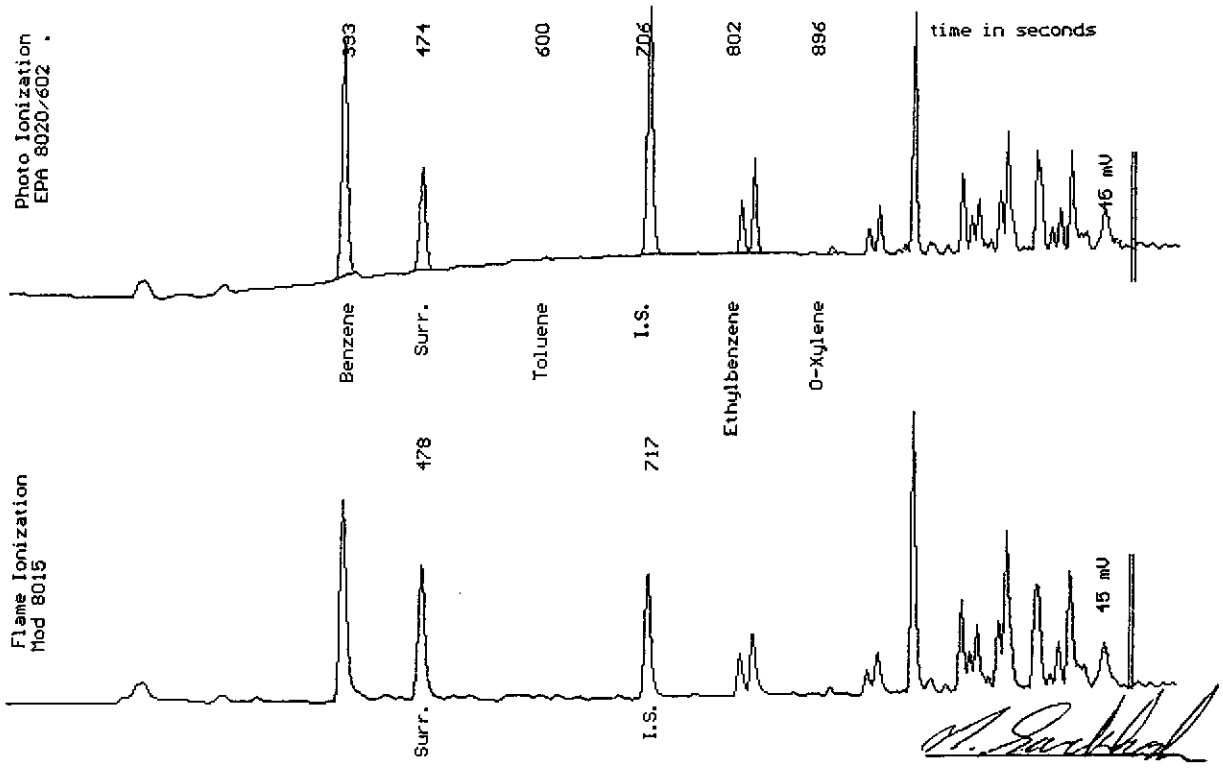
Sample Log 11010

11010-20

Sample: SP6-2

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:1 QC Batch : 6137B
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	.098
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	.018
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		100 %



Date Analyzed: 12-29-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

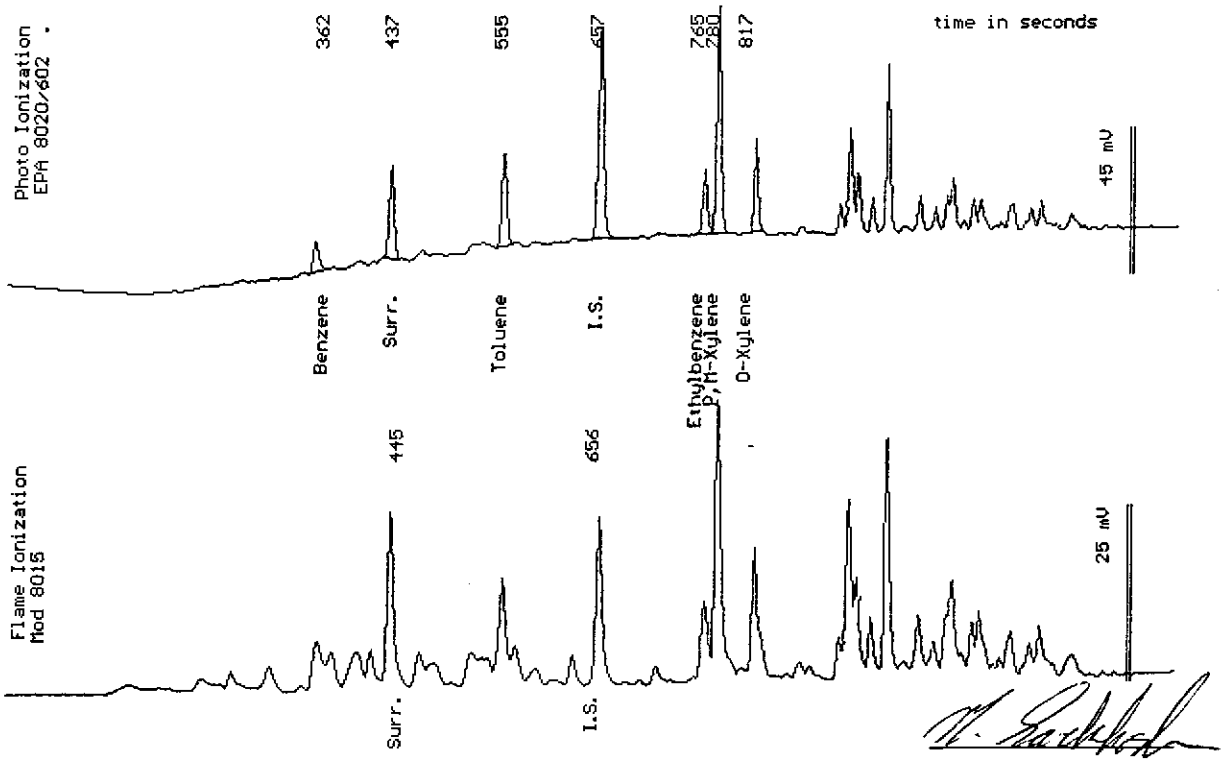
Sample Log 11010

11010-21

Sample: SP6-3

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:100 QC Batch : 6137DD
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.50)	2.9
Toluene	(.50)	9.0
Ethylbenzene	(.50)	5.7
Total Xylenes	(.50)	27
TPH as Gasoline	(100)	280
Surrogate Recovery		91 %



Date Analyzed: 12-30-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

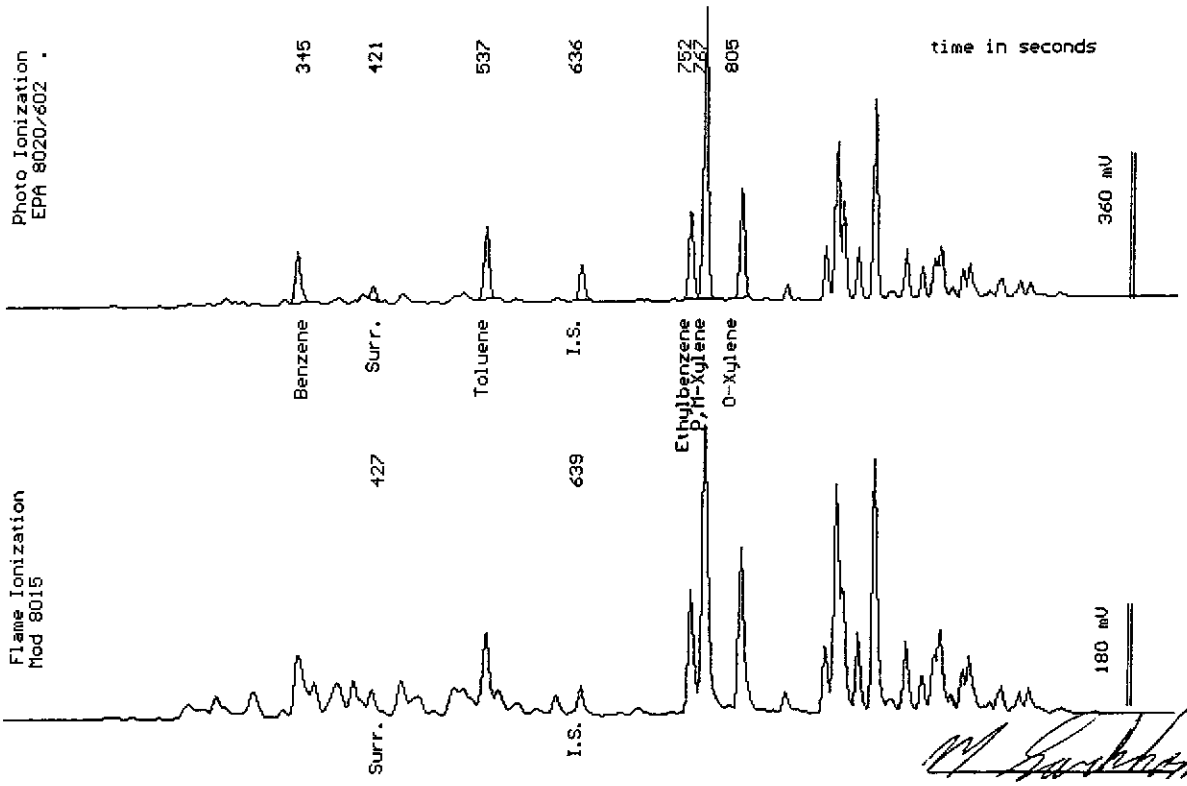
Sample Log 11010

11010-22

Sample: **#720(A-D)**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/21/94
Dilution : 1:1 QC Batch : 6136U
Matrix : Soil

Parameter	(MRL) mg/kg	Measured Value mg/kg	
Benzene	(.0050)	.48	
Toluene	(.0050)	.66	
Ethylbenzene	(.0050)	.89	
Total Xylenes	(.0050)	3.8	
TPH as Gasoline	(1.0)	32	
Surrogate Recovery		79	%



Date Analyzed: 12-23-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

December 28, 1994
Sample Log 11010

From : Project # 19030.03 (Beacon 720)
Date Sampled : 12/21/94
Matrix : Soil
Reported as : wet weight

Date Received : 12/22/94
Units : (mg/kg)

Total Lead by ICP by SW-846 Method 6010

WEST ID	Sample ID	Result	MRL	Date Digested	Date Analyzed
11010-22	**720 (A-D)**	<10	10	12/27/94	12/28/94

MRL = Method Reporting Limit

Michelle L. Anderson
Inorganics Supervisor

WEST LABORATORY

December 28, 1994

Metals QC Report for Sample Log 11010

From : Project # 19030.03 (Beacon 720)
Matrix : Soil
Sample Spiked for MS/MSD : 10965-8

Units : (mg/kg)

Method Blank

Analyte	Result	MRL	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	<10	10	6010	12/27/94	12/28/94

MRL = Method Reporting Limit

Laboratory Control Sample (LCS)

Analyte	% Recovery	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	99	6010	12/27/94	12/28/94

LCS Limits are 85 - 115%.

Matrix Spikes

Analyte	MS % Recov	MSD % Recov	RPD	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	92	97	5	6010	12/27/94	12/28/94

MS = Matrix Spike MSD = Matrix Spike Duplicate RPD = Relative Percent Difference
Spike Recovery Limits for Matrix Spikes are 75 - 125%. The RPD Limits are ± 20%.

Michelle L. Anderson
Inorganics Supervisor

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	ANALYSES										Date	Form No.
720	Steve Luty											12/22/94	1 of 3
Project No.	Sampler (Signature)												
19030.03	Steve Luty											Standard TAT	
Project Location	Affiliation												
San Leandro	AMW Geo												

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
MW1-2	12/21											1	1 to 2
MW1-3	12/21												
MW9-1	12/20												
MW9-2	12/20												
MW9-3	12/20												
SP1-1	12/20												
SP1-2	12/20												
SP1-3	12/20												

RECEIVED
DATE 12/22 TIME 1637
TEMP 0°C
INITIAL JC
WEST LAB

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Steve Luty	12/22	1555		12/22/94	1555
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
	12/22/94	1635			
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			J. Cantrell	12/22/94	1637

Report To:
Joe Mello

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Terry Fox

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

32-8003 1/90

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	ANALYSES									Date	Form No.
720	Steve Lutz										12/22/94	2 of 3
Project No.	Sampler (Signature)											
19030.03											Standard TAT	
Project Location	Affiliation											
San Leandro	AMV Geo											

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)					No. of Containers	REMARKS
SP2-2	12/21										1	Hold
SP2-3	12/21										1	
SP3-1	12/20										1	
SP3-2	12/20										1	
SP3-3	12/20										1	
SP4-1	12/20										1	
SP4-2	12/20										1	
SP4-3	12/20										1	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Steve Lutz	12/22	1555		12/22/94	1555
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
	12/22/94	1635			
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			D. Cartwell	12/22/94	1635

Report To: Joe Mello

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Terry Fox

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

32-8003 1/90

ENCLOSURE D

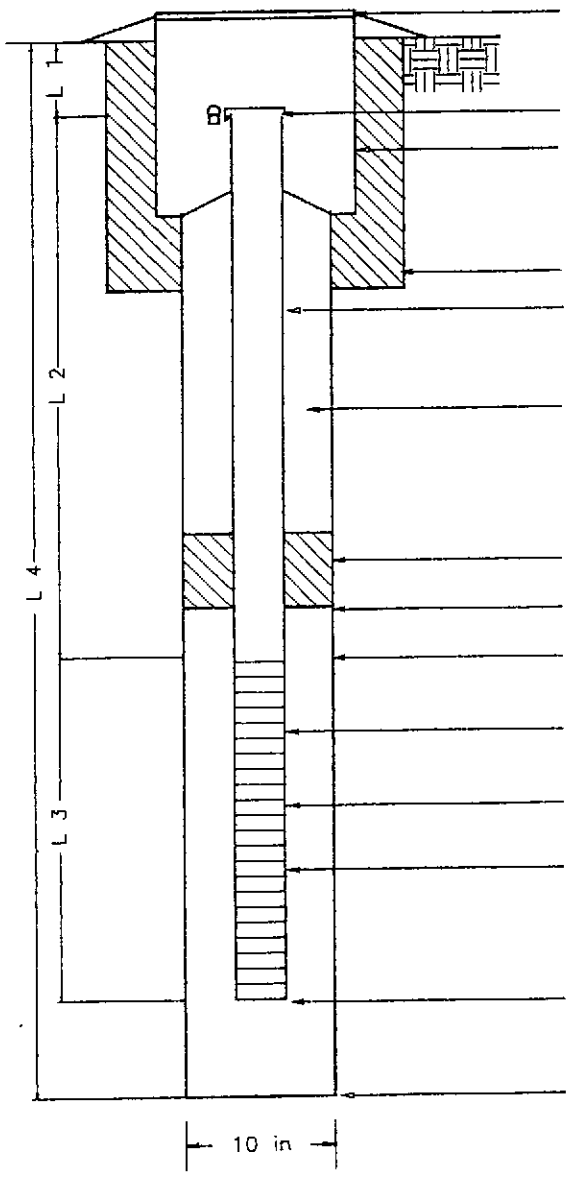
WELL CONSTRUCTION DIAGRAMS

AIR SPARGING WELL CONSTRUCTION DETAILS

PROJECT NO: 19030.02

AIR SPARGING WELL NO.: SP-1 THROUGH SP-6

LOCATION: Beacon station #720
1088 Marina Boulevard
San Leandro, California



Protective Casing	
Locking Water Tight Cap	
Flush Grade Well Construction	
Diameter and Mat'l	12-inch steel
Total length	12 inches
Length Above Ground	1/4 inch
Thickness and Type of Seal	2 feet, concrete
Diameter, Mat'l and Joint Type of Riser Pipe	2 inch, SCH 40 PVC, flush thread
Type of Backfill Around Riser	cement/5% bentonite grout
Thickness and Type of Seal	8 feet bentonite chips
Distance of Filter Sand Above Top of Screen	0 feet
Type of Filter Around Screen	#3 lonestar
Monitoring Well Mat'l	SCH 40 PVC
Screen Gauge/Slot Size	0.020 inch
Diameter and Length of Screen	2 inch, 5 feet
Depth to Bottom of Monitoring Well	25 feet
Depth to the Bottom of Filter Sand	25 feet

L1 = 0.25 feet
L2 = 22.75 feet
L3 = 25.00 feet
L4 = 25.00 feet

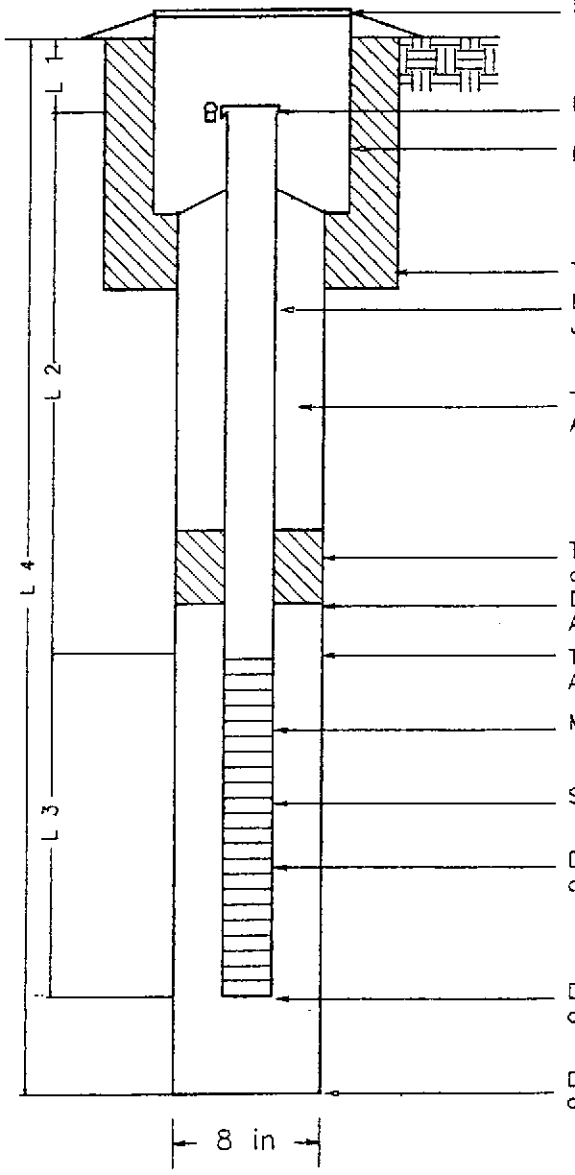
ACTON • MICKELSON • VAN DAM, INC.
4511 Golden Foothill Parkway, #1
El Dorado Hills, CA 95762

VAPOR EXTRACTION WELL CONSTRUCTION DETAILS

PROJECT NO: 19030.02

VAPOR EXTRACTION WELL NO.: VW-1

LOCATION: Beacon Station #720
1088 Marina Boulevard
San Leandro, California



Protective Casing	
Locking Water Tight Cap	
Flush Grade Well Construction	
Diameter and Mat'l	12-inch steel
Total length	12 inches
Length Above Ground	1/4 inch
Thickness and Type of Seal	2 feet, concrete
Diameter, Mat'l and Joint Type of Riser Pipe	2 inch, SCH 40 PVC, flush thread
Type of Backfill Around Riser	cement/5% bentonite grout
Thickness and Type of Seal	1 foot bentonite chips
Distance of Filter Sand Above Top of Screen	1 foot
Type of Filter Around Screen	#3 lonestar
Monitoring Well Mat'l	SCH 40 PVC
Screen Gauge/Slot Size	0.020 inch
Diameter and Length of Screen	2 inch, 10 feet
Depth to Bottom of Monitoring Well	14 feet
Depth to the Bottom of Filter Sand	14 feet

L1 = 0.25 feet
L2 = 3.75 feet
L3 = 10.00 feet
L4 = 14.00 feet

ACTON • MICKELSON • VAN DAM, INC.
4511 Golden Foothill Parkway, #1
El Dorado Hills, CA 95762

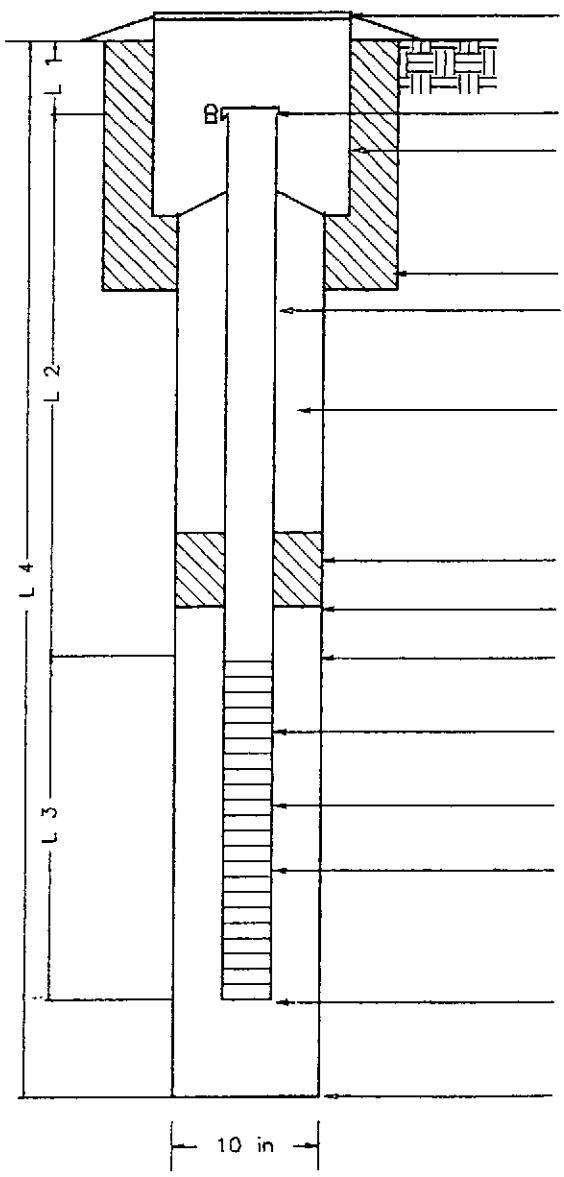
MONITORING WELL
CONSTRUCTION DETAILS

PROJECT NO: 19030.02

LOCATION: Beacon station #720
1088 Marina Boulevard
San Leandro, California

MONITORING WELL NO.: MW-9

ELEVATION: 32.56 feet



Protective Casing	
Locking Water Tight Cap	
Flush Grade Well Construction	
Diameter and Mat'l	12-inch steel
Total length	12 inches
Length Above Ground	1/4 inch
Thickness and Type of Seal	2 feet, concrete
Diameter, Mat'l and Joint Type of Riser Pipe	2 inch, SCH 40 PVC, flush thread
Type of Backfill Around Riser	cement/5% bentonite grout
Thickness and Type of Seal	1 foot bentonite chips
Distance of Filter Sand Above Top of Screen	2 feet
Type of Filter Around Screen	#3 lonestar
Monitoring Well Mat'l	SCH 40 PVC
Screen Gauge/Slot Size	0.020 inch
Diameter and Length of Screen	2 inch, 20 feet
Depth to Bottom of Monitoring Well	25 feet
Depth to the Bottom of Filter Sand	25 feet

L1 = 0.25 feet
L2 = 4.75 feet
L3 = 20.00 feet
L4 = 25.00 feet

MONITORING WELL WATER LEVEL MEASUREMENTS

Date:	Time:	Water Level*
12/21/94	1:45 pm	13.76 ft.

Completion Date and Time: 12/20/94 9:30 am

* Measuring Point: Top Of Casing

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4511 Golden Foothill Parkway, #1
El Dorado Hills, CA 95762

ENCLOSURE E

FIELD NOTES AND DATA SHEETS

DAILY FIELD REPORT

ACTON • MICKELSON • van DAM, INC.

Project No. 19030.03	Date: 12/20/94 & 12/21/94
Project Name: Beacon #720	Project Location: 1088 Marina Boulevard San Leandro, CA
Weather: Overcast / Cold	Field Crew: SAL / U+W

Today's Work Activities: 12/20/94

0540 - 0810	Drive from office to site (San Leandro)
0815	Meet U+W Crew and go over schedule.
0820	Set up on MW-9
0845 - 1000	Drill / Install MW-9
1050 - 1200	Drill / Install Sparge well SP-4
1210 - 1320	Drill / Install Sparge well SP-3
1330 - 1510	Drill / Install Sparge well SP-1
1520 - 1630	Drill / Install Sparge well SP-6
1630 - 1730	Clean site and Leave site

12/21/94

0800 Arrive at site and meet with U+W Crew. U+W had left both the rig and support truck on site locked up. The support truck had been broken into ~~the~~ (passenger side window) and gotten the keys to the rig. A cellular phone, the split-spoon sampling tools, and other goods have been stolen.

1120 Begin drilling VW-1 after downtime for acquiring new sampling tools

1245 Set up to SP-2 location, pea gravel @ location. Move to SP-5

1305 Begin drilling SP-5

1430 Set up on new SP-2 location

1545 Finish drilling, begin grouting and cleanup of site

1730 Leave site

Signature Steve Ling Date 12/21/94

ACTON • MICKELSON • van DAM, INC.

SURVEY FIELD NOTES

Project Name	Project No. 19030.03	Date 12/21/94
Beacon Station #720	Bench Mark MW-3	Bench Mark Description
Surveyor SAL	Rod Man Tim Whitney	Monitoring Well Riser

Station	(+) B.S.	H.I.	(-) F.S.	Elevation	Stadia Readings	Distance	Horizontal Angle	Remarks
MW-3				32.30				
	5.75	38.05						
MW-9			5.49	32.56				
MW-3				32.30				
	5.54	37.84						
MW-9			5.25	32.59				

SITE SKETCH

Signature Steve Lang

ACTON • MICKELSON • van DAM, INC.

GROUND WATER LEVEL DATA

Project Name Beacon #720 Project Number 19030.03

Date 12/21/94 Field Crew SAL Measuring Device and Number Interface Probe

Well No.	Time	Depth to Product (feet)	Depth to Ground Water (feet)	Product Thickness (feet)	Reference Elevation (feet)	Ground Water Elevation (feet)	Physical Observations/Comments
MW-9	1345		13.76		32.56	18.80	No odor
MW-1	1330		13.86		33.10	19.24	"
MW-2	1335		13.71		32.80	19.09	"
MW-3	1340		13.30		32.30	19.00	"
MW-4	1350		13.99		32.90	18.91	"
MW-5	1355		13.84		32.70	18.86	"
MW-6	1400		11.61		30.40	18.79	"
MW-7	1410		12.38		31.20	18.82	"
MW-8	1420		14.99		33.80	18.91	"

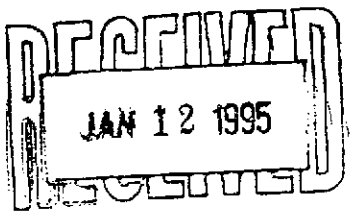
Signature Steve Ling

ENCLOSURE F

GROUND WATER SAMPLE ANALYTICAL REPORTS

WEST LABORATORY

January 3, 1995
Sample Log 11010



Joe Mello
Acton, Mickelson, & van Dam
4511 Golden Foothill Pkwy Suite #1
El Dorado, CA 95762

Subject: Analytical Results for 1 Water Sample and 19 Soil Samples
Identified as: Project # 19030.03 (Beacon 720)
Received: 12/22/94

Dear Mr. Mello:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on January 3, 1995 and describes procedures used to analyze the samples.

Sample(s) were received in 40-mL glass vials sealed with TFE lined septae, and in brass sleeves sealed with TFE sheets and endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 8020/Purge-and-Trap)
"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"Total Lead" (EPA 6010)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

M. Sarkhosh

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

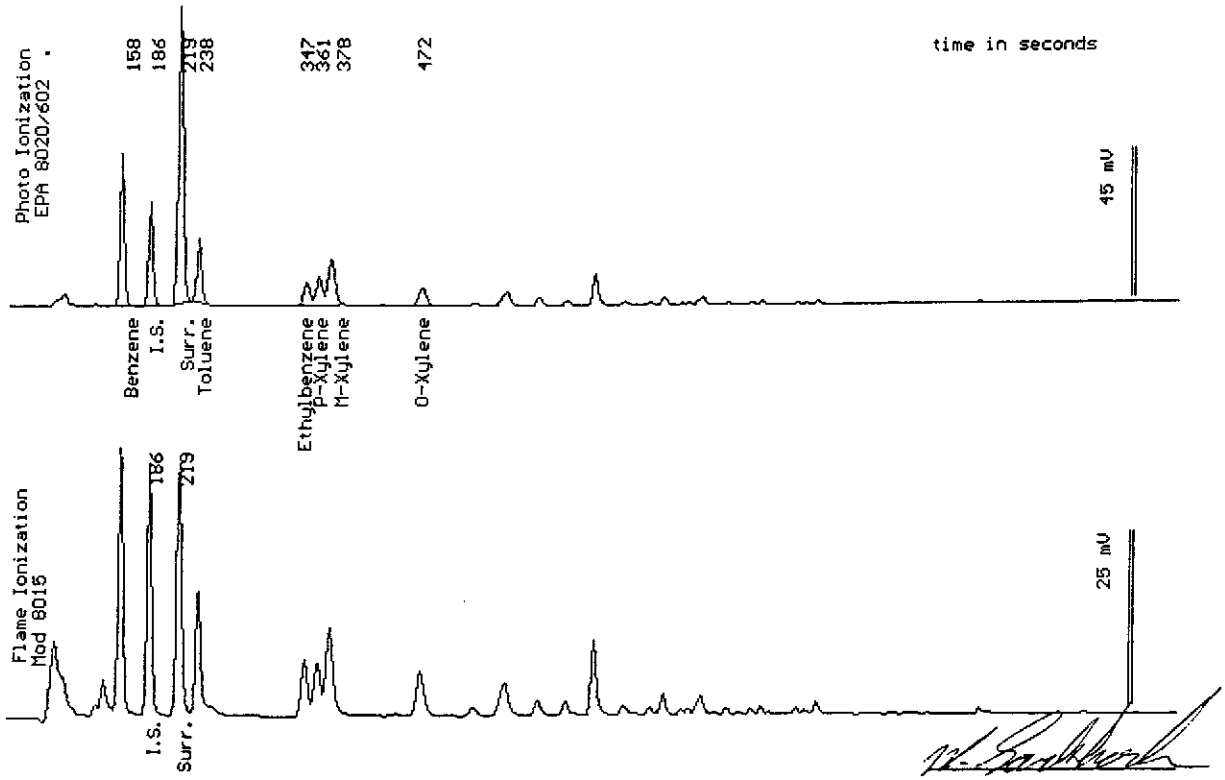
Sample Log 11010

11010-23

Sample: **MW-9**

From : Project # 19030.03 (Beacon 720)
Sampled : 12/20/94
Dilution : 1:100 QC Batch : 4109Z
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(50)	2500
Toluene	(50)	1400
Ethylbenzene	(50)	690
Total Xylenes	(50)	2800
TPH as Gasoline	(5000)	16000
Surrogate Recovery		106 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)			ANALYSES									Date	Form No.
720	Steve Lusty												12/22/94	3 of 3
Project No.	Sampler (Signature)													
19030.03													Standard	
Project Location	Affiliation												TAT	
San Leandro	AMV Geo													
Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	Total Lead					No. of Containers	REMARKS	
SP 5-2	12/21											1	1 to 12	
SP5-3	12/21													
SP6-1	12/20													
SP6-2	12/20													
SP6-3	12/20													
#720 (A-D)	12/21			X	X		X					4	Composite	
MW-9	12/20			X	X							3	40 ml VOA's (H2O)	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
	12/22	1330		12/22	1555
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
	12/22	1635			
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			J. Cortez	12/22/94	1635

Report To:

Joe Mello

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Terry Fox

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

32-8003 1/90

LABORATORY

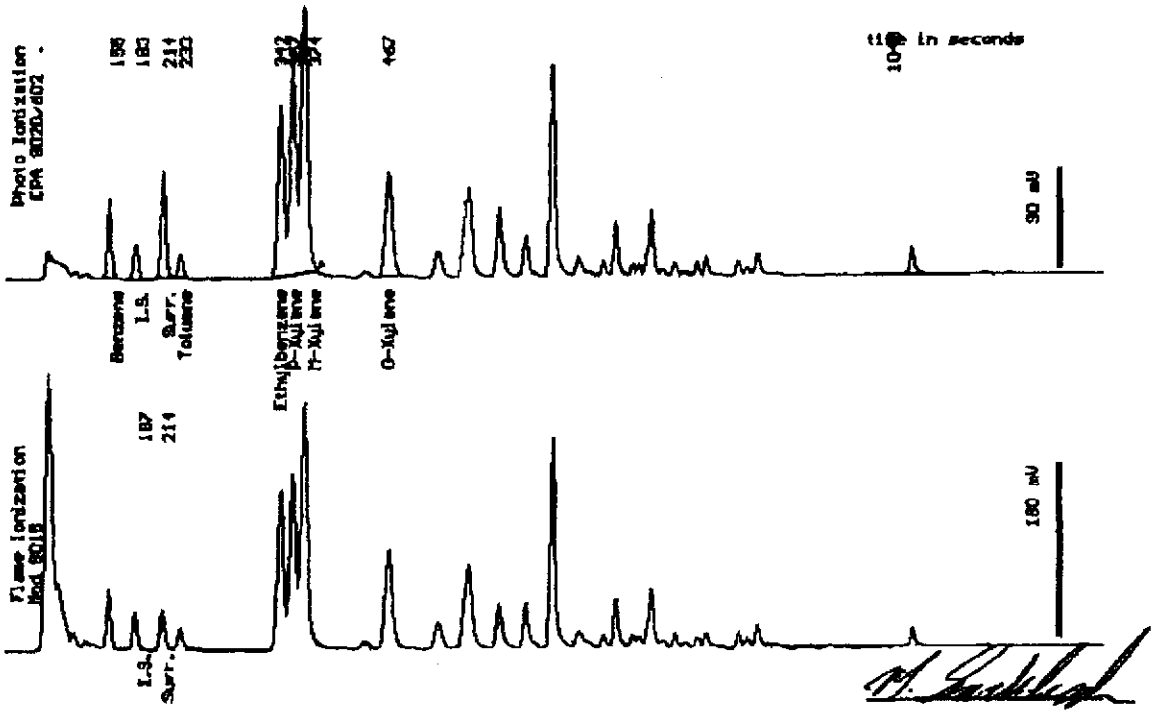
Sample Log 10825

10825-1

Sample: MW-1

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:10 QC Batch : 4109V
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(5.0)	350
Toluene	(5.0)	150
Ethylbenzene	(5.0)	1500
Total Xylenes	(5.0)	5200
TPH as Gasoline	(500)	17000
Surrogate Recovery		101 %



Date Analyzed 12-28-94
Column 1 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Barkhoth
Senior Chemist

LABORATORY

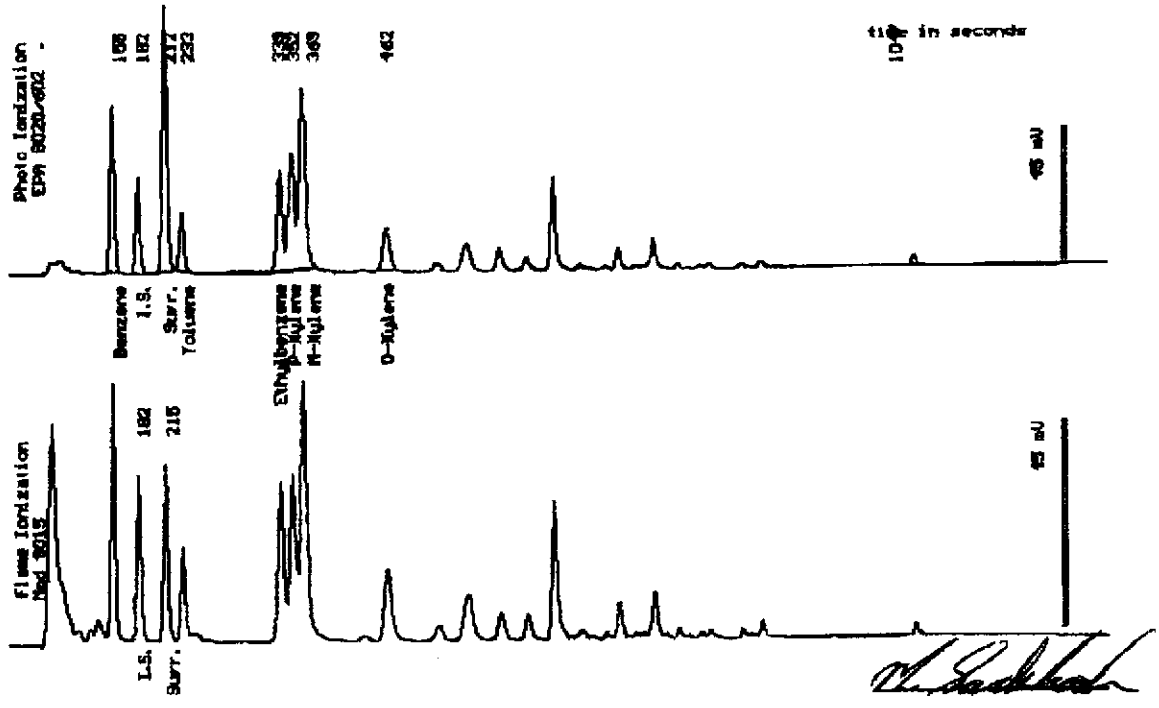
Sample Log 10825

10825-2

Sample: MW-2

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:50 QC Batch : 4109U
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(25)	1700
Toluene	(25)	750
Ethylbenzene	(25)	1600
Total Xylenes	(25)	5800
TPH as Gasoline	(2500)	19000
Surrogate Recovery		104 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB-WAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

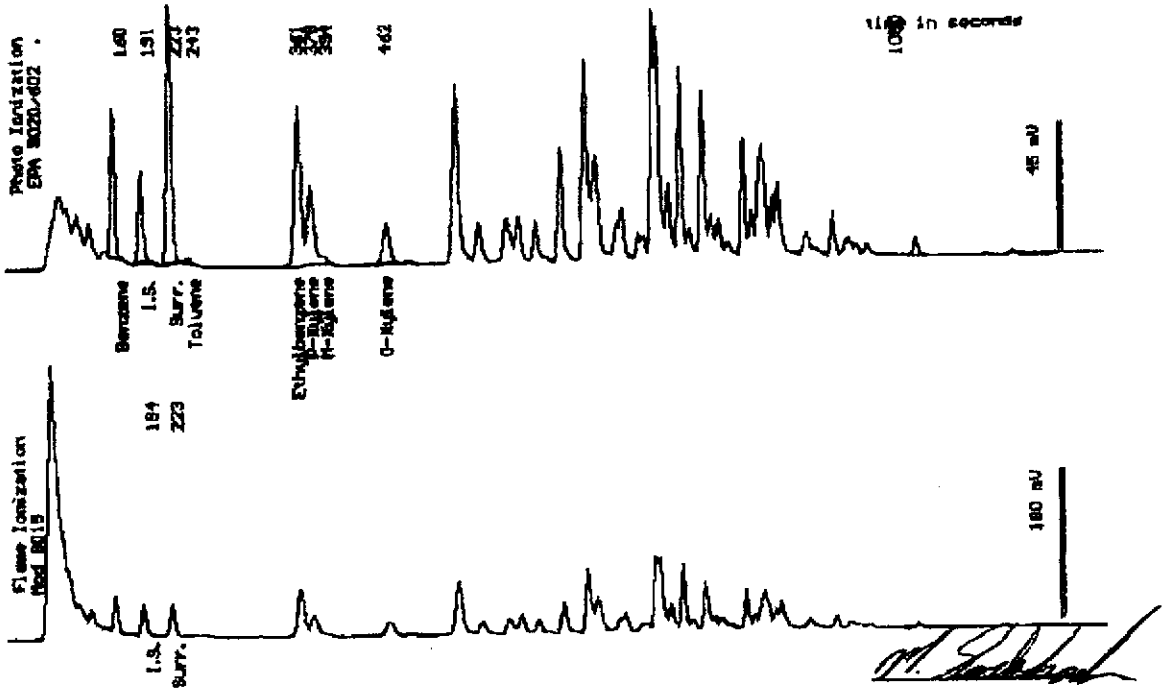
LABORATORY

Sample Log 10825
10825-9

Sample: MW-3

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:3 QC Batch : 4109V
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(1.3)	70
Toluene	(1.3)	1.7
Ethylbenzene	(1.3)	140
Total Xylenes	(1.3)	110
TPH as Gasoline	(130)	3800
Surrogate Recovery		103 %



Date Analyzed: 12-20-94
Column : 0.53mm ID x 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

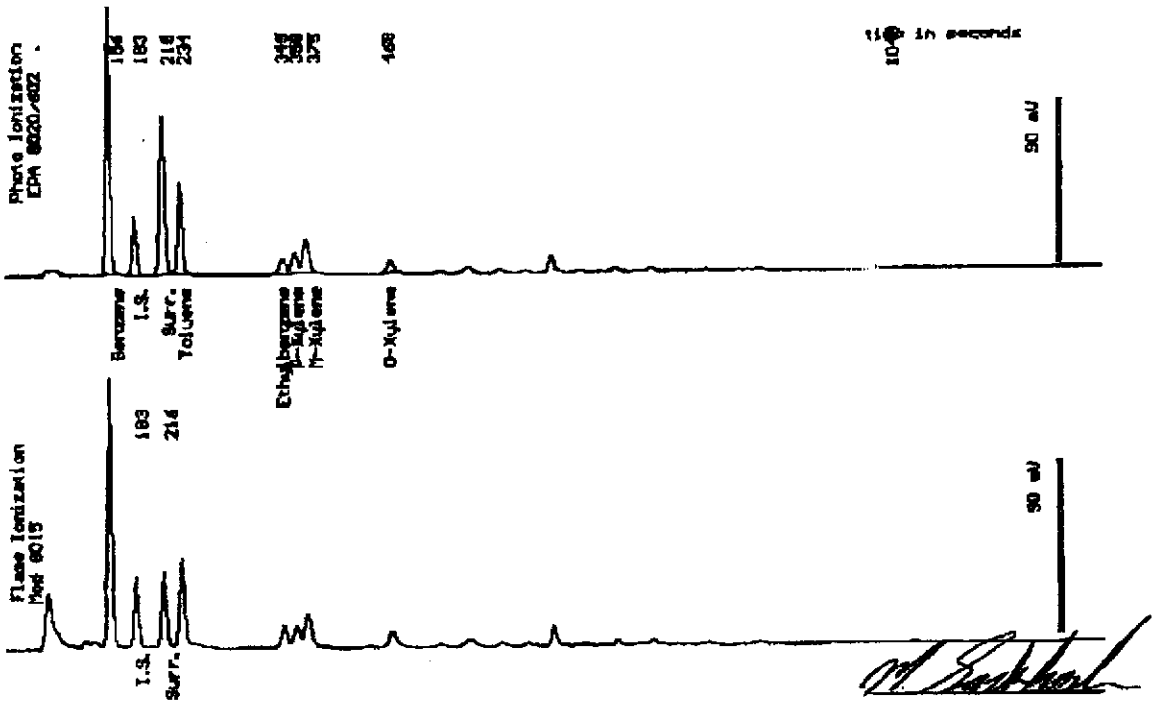
LABORATORY

Sample Log 10825
10825-4

Sample: MW-4

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:250 QC Batch : 4109U
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(130)	20000
Toluene	(130)	8300
Ethylbenzene	(130)	2300
Total Xylenes	(130)	9100
TPH as Gasoline	(13000)	67000
Surrogate Recovery		102 %



Date Analyzed: 12-25-94
Column : 0.53mm ID X 30m DBLWX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

LABORATORY

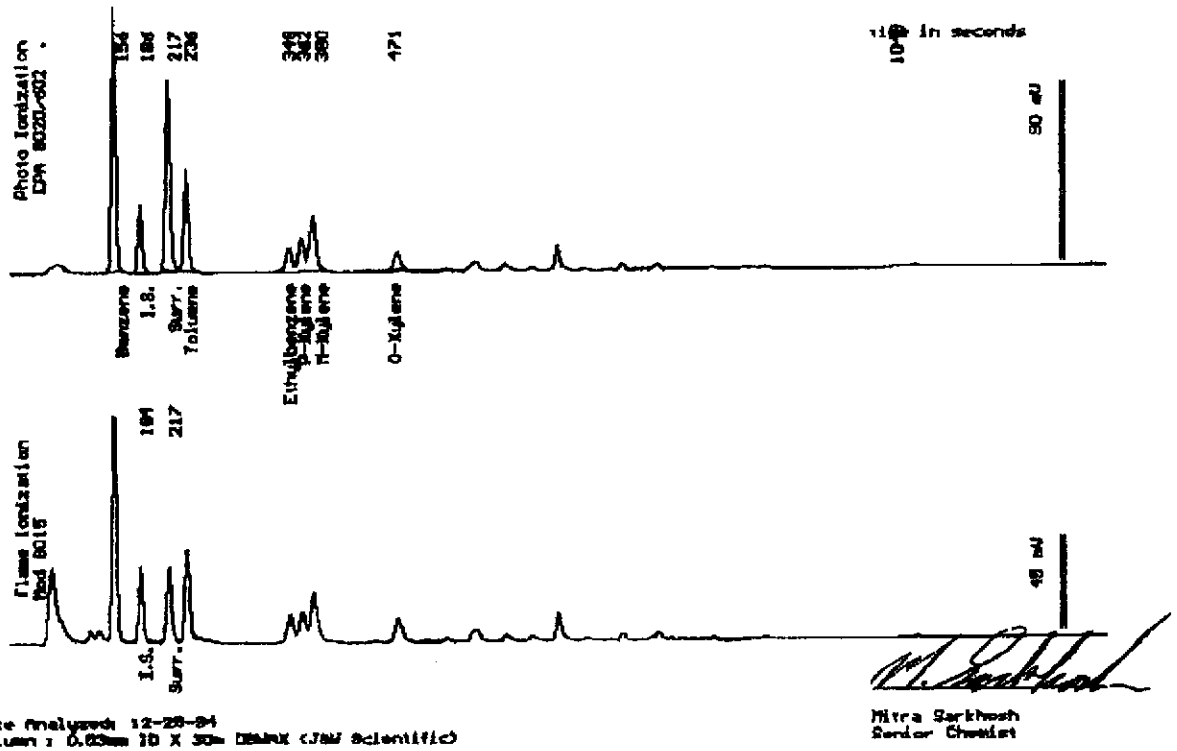
Sample Log 10825

10825-5

Sample: MW-5

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:100 QC Batch : 4109U
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(50)	7000
Toluene	(50)	3400
Ethylbenzene	(50)	1200
Total Xylenes	(50)	5200
TPH as Gasoline	(5000)	29000
Surrogate Recovery		104 %



Date Analyzed: 12-28-94
Column : 0.53mm ID X 30m DB5MX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

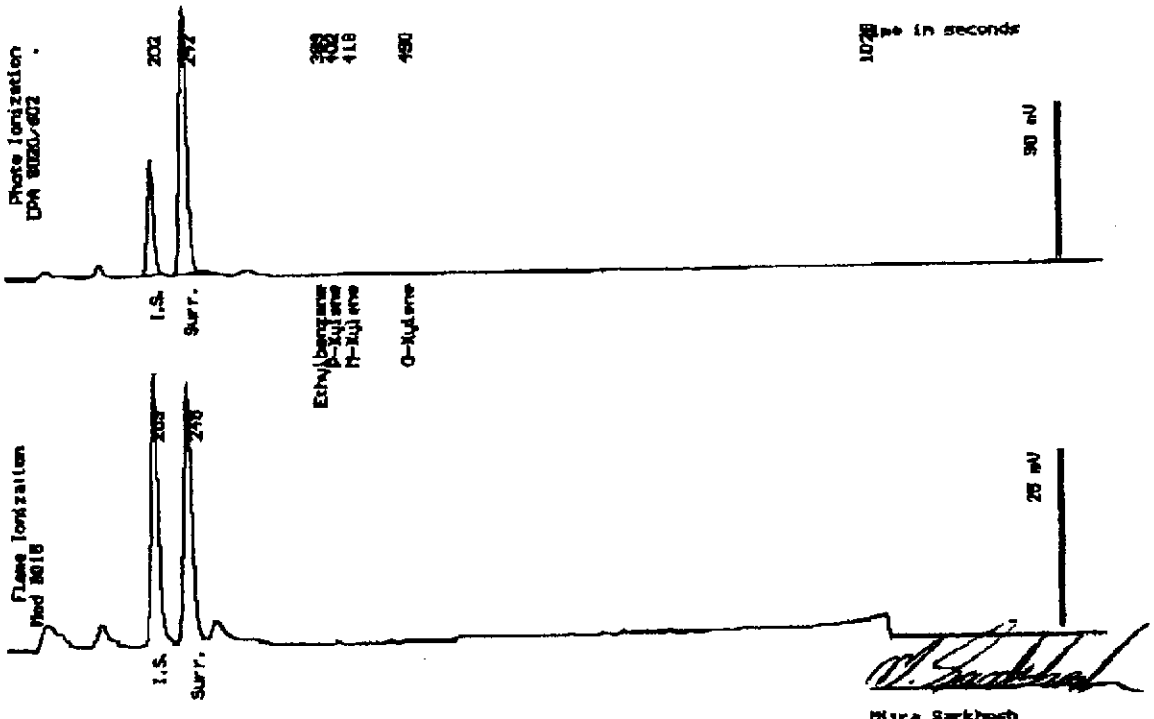
LABORATORY

Sample Log 10825

Sample: MW-6

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:1 QC Batch : 2110X
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		106 %



Date Analyzed: 12-25-94
Column : 0.53mm ID X 30m DB624 (J&W Scientific)

Mira Sarkhosh
Senior Chemist

LABORATORY

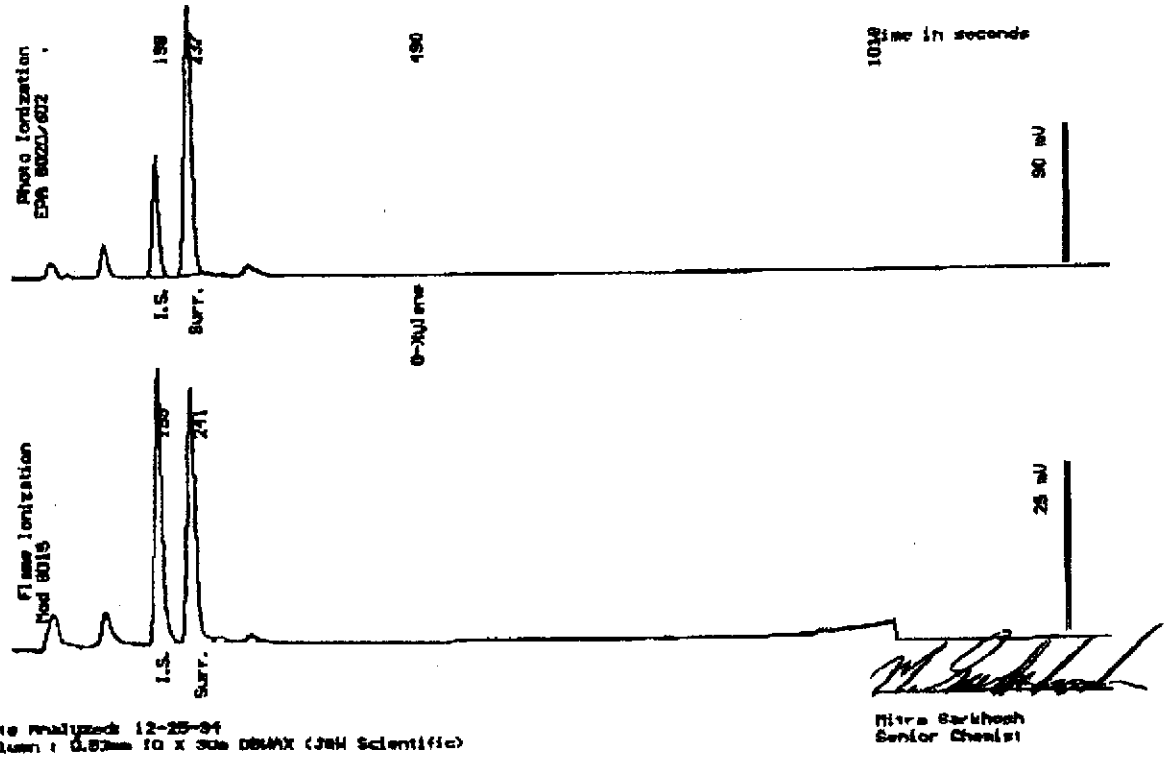
Sample Log 10825

10825-7

Sample: MW-7

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:1 QC Batch : 2110X
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		105 %



Date Analyzed: 12-25-94
Column : 0.53mm ID x 30m DB-WAX (J&W Scientific)

Mitra Barkhosh
Senior Chemist

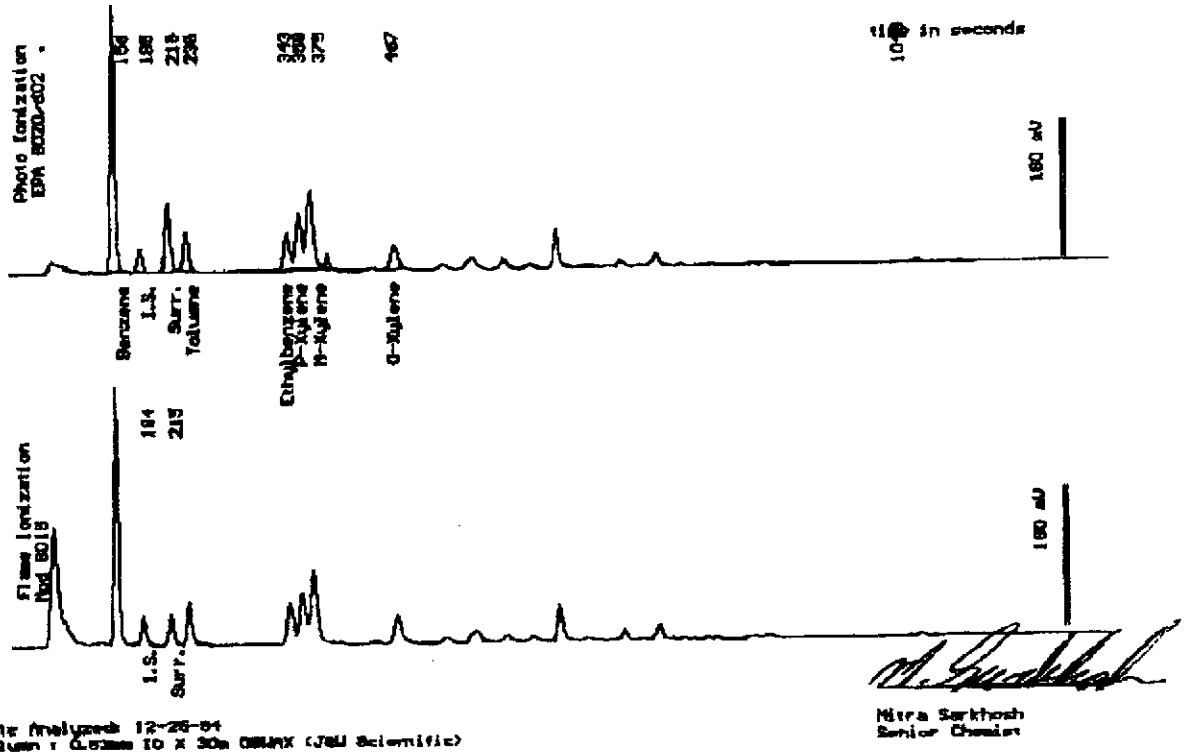
[redacted] LABORATORY

Sample Log 10825
10825-6

Sample: MW-8

From : Project # 94-720-01 (Beacon 720)
Sampled : 12/19/94
Dilution : 1:10 QC Batch : 4109U
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(5.0)	1800
Toluene	(5.0)	390
Ethylbenzene	(5.0)	500
Total Xylenes	(5.0)	2000
TPH as Gasoline	(500)	8400
Surrogate Recovery		103 %



Date Analyzed 12-26-94
Column : Glass 10 X 30m OV624 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist