Mobil Oil Corporation

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February 11, 1991

Mr. Ravi Arulanantham
Alameda County
Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

MOBIL OIL CORPORATION
FORMER S/S 10-KNK
[redacted]
BP S/S 11116

Dear Mr. Arulanantham:

Enclosed for your review and information is the Site Investigation Report, dated January 4, 1991, for subject location. Included in the report are the results of the ground water survey. Three monitoring wells/soil borings were installed to define the extent of the soil and groundwater contamination.

The highest dissolved-phase ground water contamination concentrations were detected in up-gradient monitoring well AW-6. The dissolved phase plume is defined on the site by wells MW-1, MW-2, and AW-4, which are ND for TPH and BTEX. We therefore propose that coordinated sampling be conducted to accurately determine the regional ground water gradient and the extent of the contamination.

If you have any questions, please feel free to contact me at (818) 953-2519.

Sincerely,

David Noe

David M. Noe, P.E.
GW Projects Engineer

DMN/st
enclosure

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SITE INVESTIGATION REPORT

Mobil Oil Corporation
Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Project No. 30-095

Prepared for:

Mobil Oil Corporation
3800 West Alameda Avenue, Suite 2000
Burbank, California

Prepared by:

Alton Geoscience, Inc.

January 4, 1990

SITE INVESTIGATION REPORT
for
Mobil Oil Corporation
Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Project No. 30-095

This report was based on currently available data and was developed in accordance with current hydrogeologic and engineering practices.

This report was prepared by:

Brady Nagle
Project Geologist

1/3/91
Date

This report was reviewed by:

Al Sevilla
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No. 26392
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1/3/91
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1.0 INTRODUCTION

Mobil Oil Corporation retained Alton Geoscience, Inc. in July 1990 to conduct a site investigation at former Mobil Oil Service Station 10-KNK, located at 7197 Village Parkway, Dublin, California. The site vicinity map is shown in Figure 1, while the site plan is shown in Figure 2.

1.1 Purpose and Scope

As stated in the work plan for this site investigation prepared by Alton Geoscience, Inc. (1990), this investigative work was performed to: (1) address the concerns of the Alameda County Health Agency (ACHA) as set forth in their letter to Mobil Oil Corporation dated November 27, 1990; (2) define the nature and extent of petroleum hydrocarbon constituents detected at the site; and (3) develop an appropriate course of action for further investigation and/or remediation.

The tasks performed under this site investigation included the following:

- Performance of a qualitative shallow ground water survey to assist in assessing the nature and extent of hydrocarbons detected in the ground water at the site.
- Drilling of three additional soil borings for conversion into three 4-inch-diameter ground water monitoring wells.
- Collection and analysis of soil and ground water samples for the specified hydrocarbon constituents.
- Preparation of a technical report presenting the results, findings, and conclusions of the investigation.

The above tasks and related field and sampling activities were performed in accordance with the requirements of the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) (1989), and the ACHA (1989).

1.2 Site Location and Description

The former Mobil Oil service station is located on the southeast corner of the intersection of Village Parkway and Amador Valley Boulevard, Dublin, California. The site is presently an operating BP Oil Company service station with three underground, single-walled, fiberglass fuel storage

tanks and one underground, double-walled, fiberglass waste oil storage tank. Figure 2 shows the layout of the station and underground tanks, as well as the tank contents and capacities.

A sensitive receptors survey was conducted by Alton Geoscience, Inc. to identify nearby environmental elements and land uses that may be affected by or affect the subsurface environment at the site. The findings of the survey are as follows:

- The properties adjacent to the site are a mixture of residential and commercial developments. North of the site, across Amador Valley Boulevard, is an ARCO service station. Northwest of the site, across the intersection of Village Parkway and Amador Valley Boulevard, is Unocal Service Station No. 5366.

- An Oil Changers facility, which is a former Shell service station, is located west of the site and across Village Parkway.

- A former market and fuel retail facility is located west and adjacent to the former Shell station. A Taco Bell restaurant is located south and adjacent to the site, while residential developments are east and adjacent to the site.

- Review of RWQCB files revealed that both the Unocal and former Shell service stations have had confirmed releases of hydrocarbon constituents to the subsurface, and are currently undergoing site investigations.

- Conversations with the Alameda County Flood Control and Water Conservation District (Zone 7) reveals that there are no ground water production wells within a 1/2-mile radius of the site. The nearest municipal production well is at the Zone 7 facility, located approximately 3 miles southeast of the site.

- Alamo Creek is the nearest body of surface water, located approximately 4,000 feet east of the site.

- Valley High School is the nearest school, located approximately 1,500 feet east of the site.

A copy of the sensitive receptors survey is presented in Appendix A, while an adjacent properties location map is shown in Figure 3.

1.3 Project Background

On December 7, 1988, a 280-gallon, single-walled, steel waste oil tank was removed from the site. Several holes up to 3/8-inch in diameter were observed in the tank. Analysis of compliance soil samples collected from below the former waste oil tank revealed the presence of up to 550 parts per million (ppm) total oil and grease (TOG).

Between December 15 and 20, 1988, additional soil was excavated from the former waste oil tank cavity. Analysis of soil samples collected from the limits of excavation during this time detected up to 79 ppm of TOG (Kaprealian, 1989a).

In compliance with regulatory requirements, three monitoring wells (MW-1, MW-2, and MW-3) were installed to assess the extent of hydrocarbons in the soil and/or ground water onsite. Analysis of the soil samples collected during monitoring well installation revealed up to 4,000 ppm of TOG, 36 ppm of total petroleum hydrocarbons as diesel (TPH-D), and 17 ppm of total petroleum hydrocarbons as gasoline (TPH-G). Initial analysis of ground water samples detected up to 140 parts per billion (ppb) of TPH-D, 110 ppb of TPH-G, and 8,100 ppb of TOG (Kaprealian, 1989b).

Mobil Oil Corporation subsequently authorized Alton Geoscience, Inc. in January 1990 to prepare a work plan for the supplemental site investigation for submittal to the appropriate regulatory agencies (Alton, 1990).

1.4 Regional Geology and Hydrogeology

The site is located in the Amador Subbasin of the Livermore Valley Basin physiographic region. The uppermost stratigraphic units of the Livermore Valley Basin primarily consist of Quaternary sediments including gravel deposits, valley fill materials, stream channel deposits, alluvial fan deposits, and basin deposits (Department of Water resources, 1974).

These units are generally loose deposits of sand, gravel, and boulders (stream channel deposits), unconsolidated deposits of clay, silt, sand, and gravel (alluvium deposits), and semiconsolidated deposits of sand and gravel in a matrix of clayey sand (alluvial fan deposits). The thickness of these units ranges from 0 to 200 feet. Stream channel deposits are highly permeable but are limited in extent and thickness. Basin deposits are generally impermeable, while alluvium and alluvial fan deposits are permeable and represent the major water-bearing zone in the area (Department of Water resources, 1974).

The Amador Subbasin is bounded to the east by the middle zone of the Livermore Fault and to the west by the Pleasanton Fault. Ground water occurs in the Amador Subbasin in both unconfined and confined formations. Unconfined ground water occurs in the near-surface zones, however, in the deeper zones ground water is to some extent confined. The ground water in the Amador Subbasin is considered to be of good to excellent quality.

The subbasin is drained by Arroyo del Valle and Arroyo Mocho, the two principal streams of the Livermore Valley. Annual precipitation in the area ranges from 16 to 19 inches. Production rates of existing water supply wells in the subbasin range from 42 to 2820 gallons per minute (Evaluation of Groundwater Resources: Livermore and Sunol Valley, Bulletin No. 118-2, June 1974).

2.0 FIELD METHODS

The procedures and methods used during field activities were in accordance with applicable regulatory requirements of the RWQCB as outlined in Appendix B. This investigative work included drilling three additional soil borings for the installation of Monitoring Wells AW-4, AW-5, and AW-6, following the design and installation procedures outlined in Appendix C.

Prior to commencement of drilling activities, Well Permit No. 90609 was obtained from Zone 7. A copy of the permit is included in Appendix D.

2.1 Qualitative Shallow Ground Water Survey

To assess the lateral extent of hydrocarbons detected in the ground water, a qualitative shallow ground water survey (QSGWS) was conducted at the site. The QSGWS is essentially a screening process to assist in choosing the most appropriate locations of the additional monitoring wells necessary to define the lateral extent of hydrocarbon constituents detected in the ground water. The procedure is based on the soil boring technique combined with temporary wells to collect ground water samples for qualitative analysis.

On October 12, 1990, Alton Geoscience, Inc. supervised the drilling of eight soil borings to approximately 20 feet below grade, at the locations shown in Figure 2. Drilling activities were performed by West Hazmat Drilling Company of Rancho Cordova, California, using a CME-75 truck mounted drill rig equipped with 8-inch-diameter, hollow-stem augers.

The borings were advanced 3 to 4 feet beyond the depth at which ground water was encountered. Following drilling, the borings were converted into Temporary Wells TW-1 through TW-8 by inserting clean, 2-inch-diameter, Schedule 40, polyvinyl chloride (PVC) casing with 0.020-inch slots. Prior to sampling, each temporary well was purged of approximately 5 gallons of ground water.

In addition to sampling the temporary wells, Monitoring Wells MW-1, MW-2, and MW-3 were also sampled on October 12, 1990, after purging approximately 3 well volumes of ground water from each well. The sampling of the wells was to provide additional qualitative data concurrent with the time of sampling of the temporary wells to assess the extent of hydrocarbon constituents in the ground water.

Prior to sample collection, ground water from each well was inspected for the presence of free product or sheen. Samples were collected using a hand bailer and then decanted into sterile volatile organic analysis (VOA) containers and transported to the California-certified analytical laboratory for analysis following proper chain of custody procedures.

Following sample collection, the temporary casing was removed from the boring and steam cleaned. Soil borings were then backfilled with a cement and sand slurry and capped with asphalt, where appropriate, after removing all ground water from the borings.

2.2 Soil Borings and Sampling

On October 12 and November 6, 1990, Alton Geoscience, Inc. supervised the drilling of three exploratory soil borings, B-1, B-2, and B-3, in the vicinity of the former waste oil tank for the purpose of assessing the nature and extent of TOG remaining in the soil at the site. These borings were drilled using 8-inch-diameter, hollow-stem augers to depths of 20 feet below grade.

Based on the results of the QSGWS, the locations of the additional three monitoring wells, AW-4, AW-5, and AW-6, were selected. These borings were drilled using 10-inch-diameter, hollow-stem augers to depths ranging from 21.5 to 36.5 feet below grade. All drilling activities were performed by West Hazmat Drilling Corporation of Rancho Cordova, California using a CME-75 truck mounted drilling rig.

During drilling, soil samples were collected at 5-foot intervals, using a modified California split-spoon sampler lined with clean stainless steel tubes. The soil samples were retained in the stainless steel tubes and immediately

covered with aluminum foil, capped with plastic end caps, wrapped with tape, and immediately placed in an iced cooler for transport to the analytical laboratory.

Each soil boring was logged using the Unified Soil Classification System. Other soil characteristics such as color and consistency were also noted in the boring logs. A description of drilling procedures and soil sampling protocol is presented in Appendix B. The boring logs are presented in Appendix E, while geologic cross sections based on the boring logs are shown in Figure 4.

2.3 Ground Water Monitoring Well Construction

Soil Borings AW-4, AW-5, and AW-6 were all converted into Monitoring Wells AW-4, AW-5, and AW-6. These wells were constructed of clean, 4-inch-diameter, flush threaded, Schedule 40, PVC blank casing and 0.010-inch, slotted PVC casing, to depths of 17 and 35 feet below grade. The slotted portions of the well casings were between 10 and 20 feet in length. Well installation procedures are presented in Appendix C, while well construction details are included in the boring logs presented in Appendix E.

Monitoring Wells AW-4, AW-5, and AW-6 were installed to address the formation and where ground water was initially encountered during drilling and not necessarily where ground water stabilized. Ground water was first encountered during drilling at approximately 26.5 and 21.5 feet below grade and stabilized at approximately 8.51 and 9.67 feet below grade in Borings/Monitoring Wells AW-4 and AW-5, respectively. Consequently, the screened intervals in Monitoring Wells AW-4 and AW-5 are below the stabilized ground water surface to maximize the well seal and prevent the potential downward migration of any future hydrocarbon releases.

The screened intervals of the six monitoring wells on site are as follows:

Monitoring Well	Approximate Screen Depth Interval in Feet Below Grade
MW-1	6-26
MW-2	6-26
MW-3	6-26
AW-4	20-35
AW-5	15-35
AW-6	7-17

2.4 Monitoring Well Development and Sampling

Well development and sampling procedures were conducted in accordance with the RWQCB guidelines. A description of Alton Geoscience, Inc. general field procedures for well development and sampling is presented in Appendix F.

Monitoring Wells AW-4, AW-5, and AW-6 were developed on November 9, 1990. Prior to well development, a clear Teflon bailer was used in each well to check for the presence or absence of floating product. The wells were developed by removing 10 casing volumes of water from each well using a 4-inch-diameter bailer.

Monitoring Wells MW-1, MW-2, and MW-3 were sampled on October 12, 1990 as part of the QSGWS. On November 15, 1990, all onsite monitoring wells (MW-1, MW-2, MW-3, AW-4, AW-5, and AW-6) were sampled to define the nature and extent of hydrocarbon constituents in the ground water beneath the site. Prior to sampling, the wells were purged of 3 to 4 casing volumes of water using either a 2- or 4-inch-diameter bailer. During purging of the wells and prior to sampling, pH, specific conductivity, and temperature measurements were recorded and allowed to stabilize, indicating that formation water had entered the well. Field observations during well development and purging prior to sampling are presented in the water sampling survey forms included in Appendix F.

Following well development and purging, ground water samples were collected in accordance with RWQCB guidelines and the standard protocol described in Appendix F. Ground water samples were collected in clean containers and transported in an iced cooler to the analytical laboratory for analysis following proper chain of custody procedures.

2.5 Ground Water Level Monitoring and Surveying

The top of casing at each monitoring well was surveyed by Associated Professions, Inc. of Livermore, California in reference to a monument in the intersection of Village Parkway and Amador Valley Boulevard, with an elevation of 335.92 feet above mean sea level. The depth to ground water in the wells was measured from the top of the well casing to the nearest 0.01 foot, using an electronic sounder, on November 15, 1990 and December 11, 1990.

The survey data and calculated ground water elevations are presented in Table 1, while the graphical interpretation of the November 15, 1990 ground water elevation contours is shown in Figure 5.

3.0 ANALYTICAL METHODS AND RESULTS

All laboratory analyses of soil and ground water samples were performed by a California certified analytical laboratory, using standard test methods of the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services (DHS). Superior Analytical Laboratory of Martinez, California and Anametrix, Inc. of San Jose, California analyzed the soil and ground water samples.

3.1 Soil Analysis

Selected soil samples from Borings B-1, B-2, B-3, AW-4, AW-5, and AW-6 were analyzed for specific hydrocarbon constituents. All soil samples from Borings B-1, B-2, and B-3 below the bottom of the former waste oil tank cavity and above encountered ground water were analyzed for:

- TPH-G using EPA Methods 5030/8015
- BTEX constituents using EPA Methods 5030/8020
- TOG using EPA Method 5520EF
- TPH-D using EPA Method 3510/8015
- Halogenated volatile organic compounds (HVOC) using EPA Method 8010

Selected soil samples from Borings AW-4, AW-5, and AW-6 were analyzed for:

- TPH-G using EPA Methods 5030/8015
- BTEX constituents using EPA Methods 5030/8020

The results of the laboratory analysis of soil samples are presented in Table 2, while the official laboratory reports and chain of custody records are included in Appendix G.

3.2 Ground Water Analysis

The ground water samples collected from the temporary wells and from Monitoring Wells MW-1, MW-2, and MW-3 as part of the QSGWS were analyzed for:

- TPH-G using EPA Methods 5030/8015
- BTEX constituents using EPA Methods 5030/8020

The ground water samples collected from Temporary Wells TW-1 and TW-2 and from Monitoring Wells MW-1, MW-2, and MW-3 were additionally analyzed for TOG using EPA Method 5520BF, TPH-D using EPA Method 5030/8015, and HVOC using EPA Method 8010, due to its proximity to the former underground waste oil tank area.

The ground water samples collected from the six monitoring wells onsite to define the nature and extent of hydrocarbons constituents in the ground water were analyzed for:

- TPH-G using EPA Methods 5030/8015
- BTEX constituents using EPA Methods 5030/8020

Since the ground water samples collected from Monitoring Wells MW-1, MW-2, and MW-3 during the QSGWS revealed no detectable concentrations of TOG, TPH-D, and HVOC above laboratory detection limits, the samples collected on November 6, 1990 were not analyzed for those constituents.

The results of the laboratory analysis of the ground water samples collected during the QSGWS are presented in Table 3, while the results of the laboratory analysis of the ground water samples from the monitoring wells are presented in Table 4. The official laboratory report and chain of custody records are included in Appendix G.

4.0 SITE GEOLOGY AND HYDROGEOLOGY

This section presents a brief description of the pertinent information on the site geology and hydrogeology based on results of field activities.

4.1 Site Geology

Review of the boring logs generated during this and previous subsurface investigations at the site indicates that the stratigraphy beneath the site is primarily silty clay to a depth of approximately 25-30 feet, underlain by a more permeable silty to gravelly sand unit. Based on the stratigraphy of the southernmost boring onsite, AW-4, this permeable zone appears to be underlain by a silty clay unit with a thickness of at least 3.5 feet.

The stratigraphy encountered in Boring AW-6 was silty to poorly graded sand at a depth of 4 feet below grade, which continued to a depth of 15.5 feet below grade. This shallow, permeable zone, which may represent a buried stream channel

deposit, was also underlain by a silty clay unit with a thickness of at least 6 feet.

4.2 Site Hydrogeology

Ground water was first encountered at various depths during the drilling of the soil borings depending on the permeability of the subsurface material encountered. With the exception of Boring AW-6, the ground water throughout the site was confined by overlying silty clay, and was encountered below a depth of 20 feet below grade. In Boring AW-6, a partially saturated, shallow, permeable zone was encountered at approximately 8 feet below grade, and ground water was encountered at a depth of approximately 11.5 feet below grade. In all onsite monitoring wells, ground water stabilized at approximately 9 to 10 feet below grade.

The stabilized water elevations in AW-4 and AW-5 were approximately 11.5 and 5.5 feet higher than the top of the screened interval. However, this should have no effect on the validity of the water sampling and analytical results since: (1) no free floating product was evident or present in the water sample, and (2) the well was properly constructed in accordance with current regulations and standard practices.

The ground water elevations in the monitoring wells were calculated using top of casing survey data and the water level readings of November 15, 1990, as shown in Table 1. A ground water elevation contour map, based on interpretation of the November 1990 water level data, is shown in Figure 4. The data indicates that the shallow ground water at the site generally flows to the southeast, with an average hydraulic gradient of 0.004 foot per foot.

5.0 DISCUSSION OF RESULTS

The results of the field activities and laboratory analysis of soil and ground water samples collected during this investigation are discussed below.

5.1 Qualitative Shallow Ground Water Survey

A total of 11 ground water samples were collected for analysis during the QSGWS, including samples from existing monitoring wells. The analytical results are summarized in Table 2 and discussed below:

- Only the samples from two of the eight temporary wells, TW-1 and TW-7, had detectable concentrations

of TPH-G and all of the BTEX constituents. The sample from TW-3 had a detectable concentration of benzene at only 0.8 ppb and no TPH-G or the other BTEX constituents above laboratory detection limits.

- The concentrations of dissolved-phase TPH-G and BTEX detected in the ground water samples from Temporary Wells TW-1 and TW-7 were higher than those encountered in the monitoring wells subsequently installed near those locations. The elevated concentrations in the temporary wells may have been due to emulsification of hydrocarbon constituents in the soil during drilling and not necessarily representative of hydrocarbon concentrations in the formation water.

- Only the ground water sample collected from Monitoring Well MW-2 as part of the QSGWS had detectable TPH-G at a concentration of 93 ppb.

Figure 6 shows the locations of the temporary wells and the monitoring wells used for the QSGWS.

The results of the QSGWS were considered in determining the locations of additional monitoring wells installed onsite. Monitoring Wells AW-4 and AW-5 were installed near Temporary Wells TW-1 and TW-7, respectively, due to concentrations of TPH-G and BTEX constituents detected in the ground water.

5.2 Soil Analysis

A total of 16 soil samples were collected for analysis as part of this site investigation to assess the nature and extent of hydrocarbons in subsurface soil. The analytical results are summarized in Table 2 and discussed below.

- No TPH-G, benzene, toluene, ethylbenzene, TPH-D, TOG, or HVOC were detected above the laboratory detection limits in any of the soil samples from Borings B-1, B-2, or B-3. Only total xylenes at a concentration of 0.013 ppb were detected in the soil sample from Boring B-3 at a depth of 16 feet below grade.

- The soil sample from Boring AW-5, at a depth of 6-6.5 feet below grade, contained 6.0 ppm TPH-G and low concentrations of BTEX constituents (<0.1 ppb).

5.3 Ground Water Analysis

The results of laboratory analysis of ground water samples collected from all six monitoring wells, MW-1, MW-2, MW-3,

AW-4, AW-5, and AW-6, were used to assess the nature and extent of hydrocarbons detected in ground water at the site. Monitoring Wells MW-1, MW-2, and MW-3 were sampled for analysis on October 12, 1990 as part of the QSGWS. Upon completion and development of the three additional monitoring wells, all six wells were sampled on November 15, 1990. The analytical results of the water samples were used to define the nature and extent of hydrocarbon effected ground water onsite. The results of the laboratory analysis are summarized in Table 4 and discussed below:

- Ground water samples from Monitoring Wells MW-1, MW-2, and MW-3 from the October 12, 1990 sampling event had no detectable concentrations of TPH-D, BTEX, TOG, or HVOC. The ground water sample from MW-2 was the only sample that contained a detectable concentration of TPH-G (93 ppb).

- Ground water samples from Monitoring Wells MW-1, MW-2, and AW-4 from the November 15, 1990 sampling event did not contain detectable concentrations of TPH-G or BTEX constituents above laboratory detection limits.

- Ground water samples from MW-3 and AW-6 from the November 15, 1990 sampling event had 76 and 230 ppm TPH-G, respectively. ppb

- Among the BTEX constituents, only benzene and total xylenes were detected in the samples from AW-5 and AW-6. The highest concentration of benzene detected was in the sample from AW-6, the most upgradient well onsite.

Based on the laboratory results of the November 15, 1990 sampling event, isoconcentration maps for TPH-G and benzene in ground water were developed, as shown in Figures 7 and 8.

6.0 FINDINGS AND CONCLUSIONS

The findings and conclusions of this site investigation are summarized below:

1. Soil types encountered at the site during drilling generally consisted of silty clay with layers of silty to poorly graded sand.

2. The ground water elevation contour map developed from water level and survey data indicates a general southeasterly ground water flow direction at the

site, with an average hydraulic gradient across the site of approximately 0.004 foot per foot.

3. TPH-G and BTEX constituents were not detected above laboratory detection limits in the soil samples collected from the six borings during this investigation, with the exception of low concentrations of TPH-G (<10 ppm) and BTEX constituents (<1.0 ppm) in the 6-foot depth soil sample from Boring AW-5 and 0.013 ppm total xylenes in the 16-foot depth sample from Boring B-3.

4. Petroleum hydrocarbon constituents do not appear to have impacted the subsurface soil onsite. Since the removal of the waste oil tank and subsequent soil excavation in 1988, there have been no known releases of petroleum hydrocarbons into the subsurface soil onsite.

5. The highest concentrations of TPH-G and BTEX constituents in ground water were detected in the sample from AW-6, the most upgradient well onsite. The higher hydrocarbon concentrations in the sample from this well may be due to the shallow, more permeable zone encountered in this boring as compared to the other borings. This shallow zone of silty sand and sand may be a preferential pathway for hydrocarbons detected in ground water from an upgradient offsite source, or from the product tanks and lines onsite.

6. The extent of dissolved-phase petroleum hydrocarbon constituents in the ground water at the site can be defined except in the upgradient direction northwest of Monitoring Well AW-6.

7. The nature and extent of hydrocarbons in the ground water southwest of the site at the adjacent Shell Oil property and to the west at the adjacent Unocal site are currently being investigated by the respective consultants retained by Shell Oil and Unocal.

8. A coordinated effort between Mobil Oil Corporation, Shell Oil Company, and Unocal Corporation is necessary to properly address the hydrocarbon contaminates in ground water at these three sites.

9. From the results of this site investigation, no further characterization of the dissolved-phase petroleum hydrocarbons detected onsite as well as offsite is necessary at this time.

TABLES

TABLE 1

SURVEY AND WATER LEVEL MONITORING DATA

Former Mobil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Elevation and Depth Measurements in feet

Date of Measurement	Well Number	Top of Casing Elevation[a]	Depth to Water Level	Water Level Elevation[b]
10/12/90	MW-1	335.19	9.92	325.27
	MW-2	334.60	9.60	325.00
	MW-3	335.15	10.08	325.07
11/15/90	MW-1	335.19	10.16	325.03
	MW-2	334.60	9.68	324.92
	MW-3	335.15	10.12	325.03
	AW-4	333.44	8.51	324.93
	AW-5	334.81	9.67	325.14
	AW-6	334.93	9.58	325.35
12/11/90	MW-1	335.19	9.97	325.22
	MW-2	334.60	9.47	325.13
	MW-3	335.15	9.92	325.23
	AW-4	333.44	9.19	324.25
	AW-5	334.81	9.44	325.37
	AW-6	334.93	9.56	325.37

[a]Top of casing elevations for all wells was surveyed relative to the City of Dublin monument in the intersection of Village Parkway and Amador Valley Boulevard, with an elevation of 335.92 feet above mean sea level (NGVD-1929).

[b]Water level elevation in feet above mean sea level

TABLE 2

SUMMARY OF ANALYTICAL RESULTS OF SOIL SAMPLES

Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Concentrations in Parts Per Million

Boring Number	Depth in Feet	TPH[a] as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG[b]	HVOC[c]
Date of Sampling - October 12, 1990									
B-1	11-11.5	ND[d]<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-1	16-16.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-1	21-21.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	11-11.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	16-16.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	22.5-23	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
Date of Sampling - November 6, 1990									
B-3	10.5-11	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<10	ND<20	ND
B-3	16-16.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	0.013	ND<10	ND<20	ND
B-3	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<10	ND<20	ND
AW-4	6-6.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--[f]	--	--
AW-4	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	6-6.5	6.0	0.25	0.018	0.033	0.088	--	--	--
AW-5	11-11.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	16-16.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-6	6-6.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--

[a]Represents Total Petroleum Hydrocarbons
[b]Represents Total Oil and Grease
[c]Represents Halogenated Volatile Organic Compounds - Refer to Laboratory Reports for Detection limits
[d]Not Detected above the reported detection limits
[e]Not Analyzed

TABLE 3

SUMMARY OF ANALYTICAL RESULTS OF GROUND WATER SAMPLES
FROM QUALITATIVE SHALLOW GROUND WATER SURVEY

Former Mobil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Concentrations in Parts Per Billion

Well Number	TPH[a] as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG[b]	HVOC[c]
Date of Sampling - October 12, 1990								
MW-1	ND[d]<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-2	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
TW-1	6,100	94	490	92	590	--[e]	ND<5	--
TW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5	--
TW-3	ND<50	0.8	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-7	11,000[f]	250	580	344	1,700	--	--	--
TW-8	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--

[a]Represents Total Petroleum Hydrocarbons
[b]Represents Total Oil and Grease
[c]Represents Halogenated Volatile Organic Compounds - Refer to Laboratory Reports for Detection limits
[d]Not detected above the given detection limits
[e]Not analyzed
[f]Estimated value below detection limits

TABLE 4

SUMMARY OF ANALYTICAL RESULTS OF GROUND WATER SAMPLES

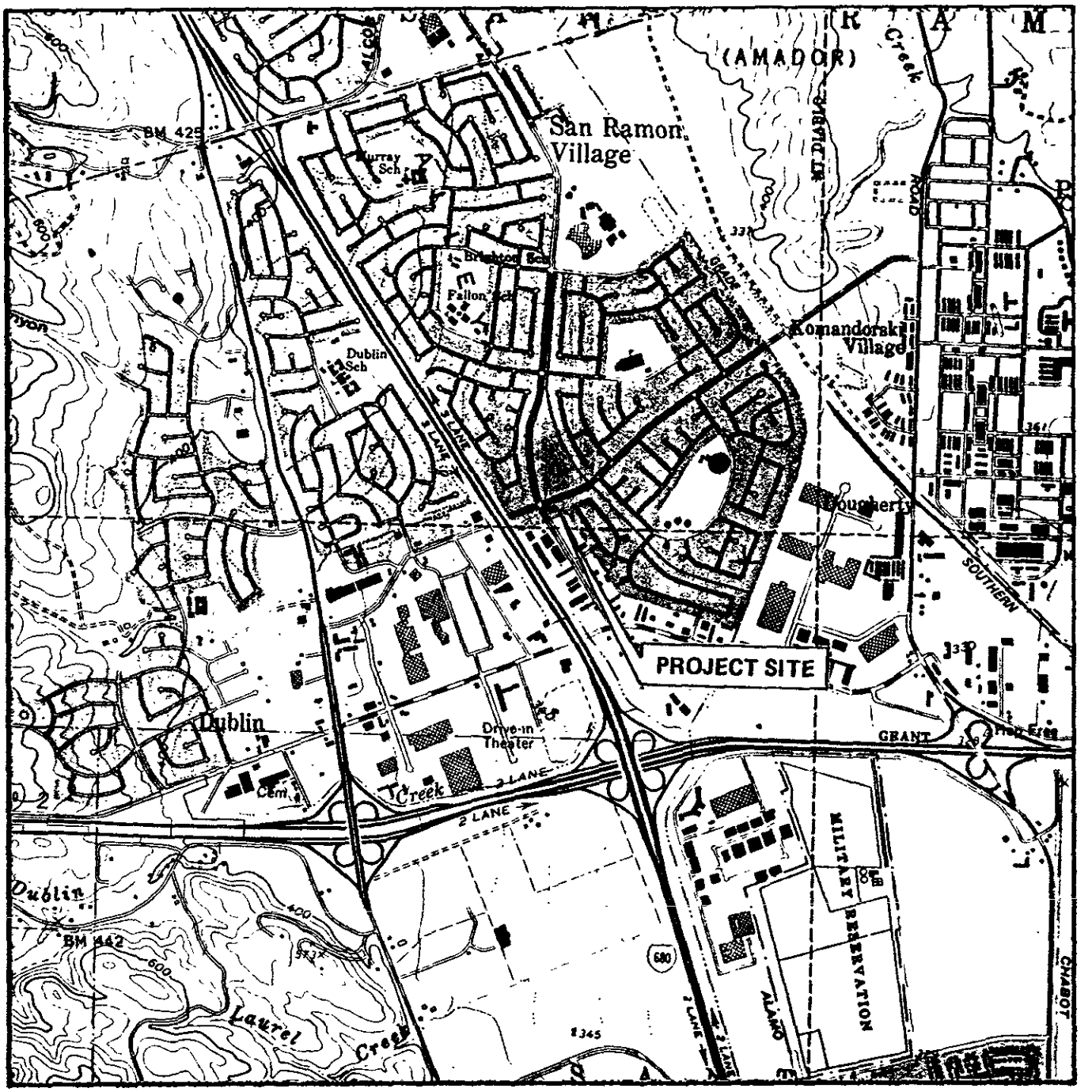
Former Mobil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Concentrations in Parts Per Billion

Well Number	TPH[a] as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG[b]	HVOC[c]
Date of Sampling - October 12, 1990[d]								
MW-1	ND[e]<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-2	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
Date of Sampling - November 15, 1990								
MW-1	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--[f]	--	--
MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
MW-3	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
AW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
AW-5	ND<50	1.3	ND<0.5	ND<0.5	1.0	--	--	--
AW-6	230	25	ND<0.5	ND<0.5	0.8	--	--	--

[a]Represents Total Petroleum Hydrocarbons
[b]Represents Total Oil and Grease
[c]Represents Halogenated Volatile Organic Compounds - Refer to Laboratory Reports for Detection limits
[d]Also represented in Table 2
[e]Not Detected above the reported detection limits
[f]Not Analyzed

FIGURES



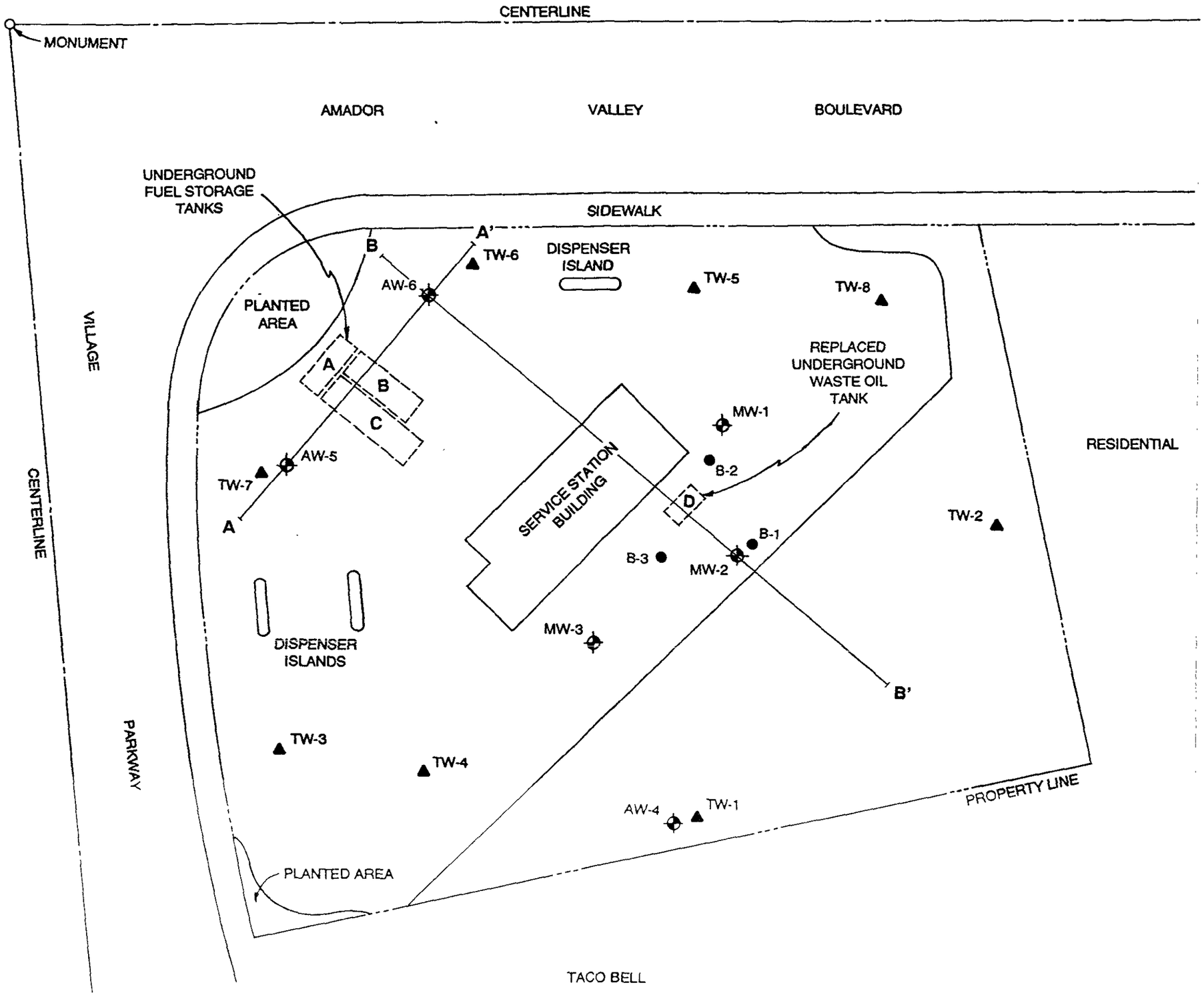
Source. U.S. Geological Map, Dublin Quadrangle, California. 7.5 minute series 1953. Photorevised 1980

N

0 1000 2000

SCALE IN FEET

FIGURE 1 VICINITY MAP



SCALE: 1" = 30'

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING
- QUALITATIVE SHALLOW GROUND WATER SURVEY BORING
- A ⟷ A' LINE OF GEOLOGIC CROSS SECTION

UNDERGROUND TANK CAPACITIES AND CONTENTS

A: 6,000 GAL. UNLEADED PREMIUM
B: 8,000 GAL. UNLEADED REGULAR
C: 10,000 GAL. LEADED REGULAR
D: 3,000 GAL. WASTE OIL (REPLACEMENT)

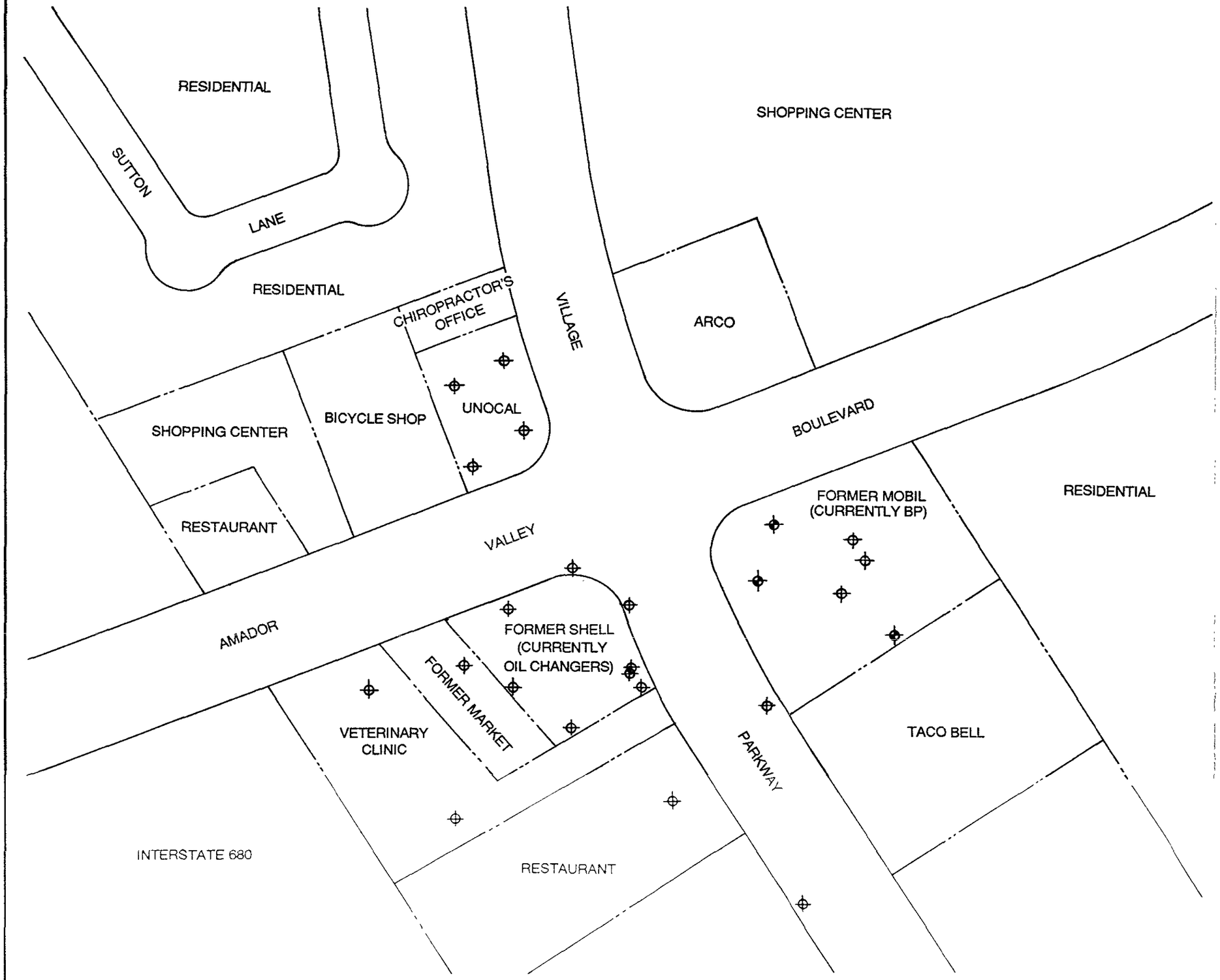
FIGURE 2

SITE PLAN

FORMER MOBIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave , Ste 140
Concord, CA 94520



N

SCALE: 1" = 100'

LEGEND

GROUND WATER MONITORING WELL INSTALLED BY ALTON GEOSCIENCE, INC.

GROUND WATER MONITORING WELL INSTALLED BY OTHERS

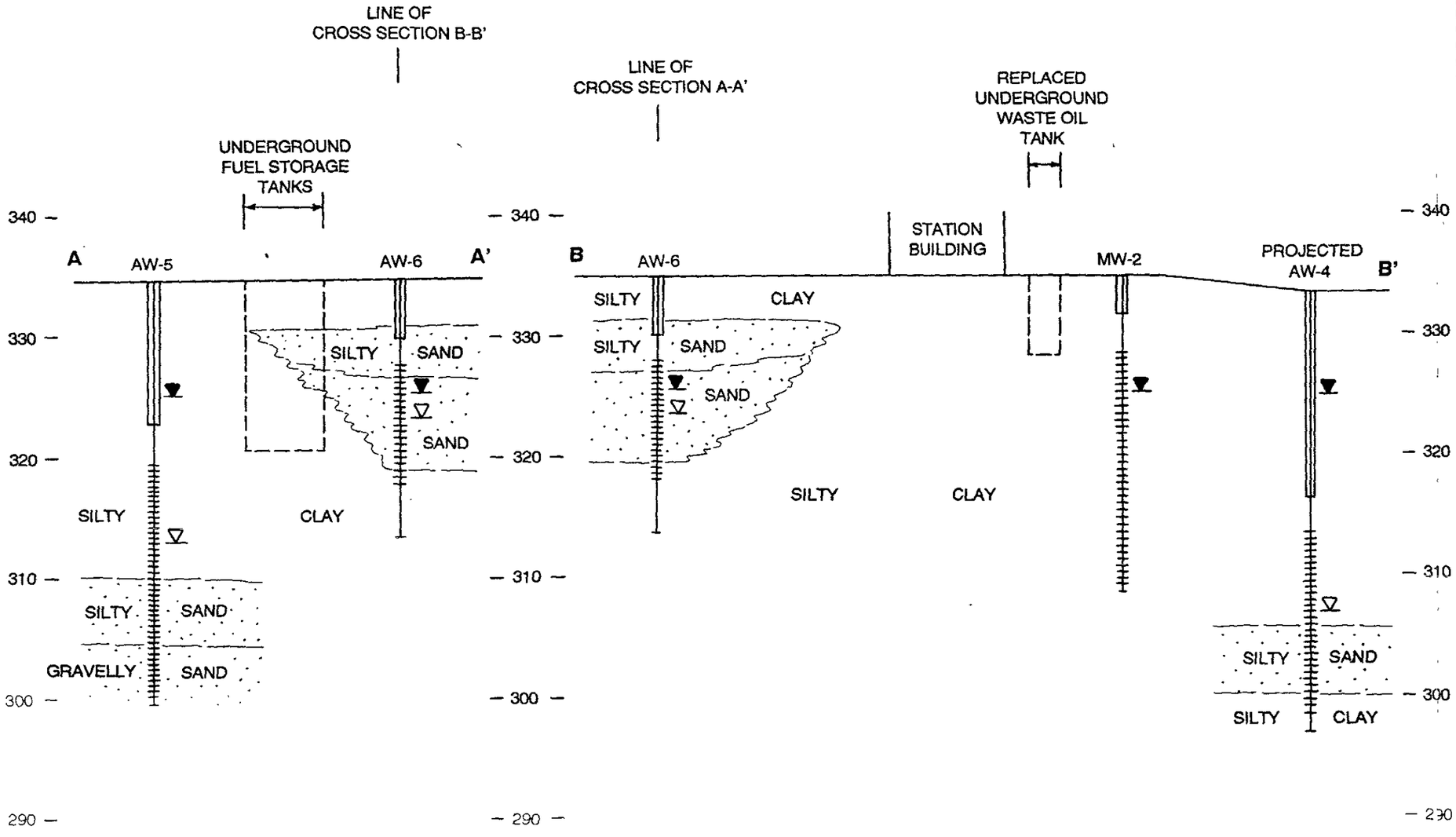
FIGURE 3

ADJACENT PROPERTIES MAP

FORMER MOBIL OIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave , Ste 140
Concord, CA 94520



SCALE: 1" = 30' HORIZONTAL
1" = 10' VERTICAL

DISTANCES AND ELEVATIONS IN FEET

ELEVATIONS RELATIVE TO A MONUMENT WITH AN ASSUMED ELEVATION OF 335.92 FEET ABOVE MEAN SEA LEVEL

LEGEND

- GROUND WATER MONITORING WELL SHOWING SEAL AND SLOTTING
- GEOLOGIC CONTACT
- GROUND WATER ELEVATION AT TIME OF DRILLING
- GROUND WATER ELEVATION ON NOVEMBER 15, 1990
- PERMEABLE MATERIAL

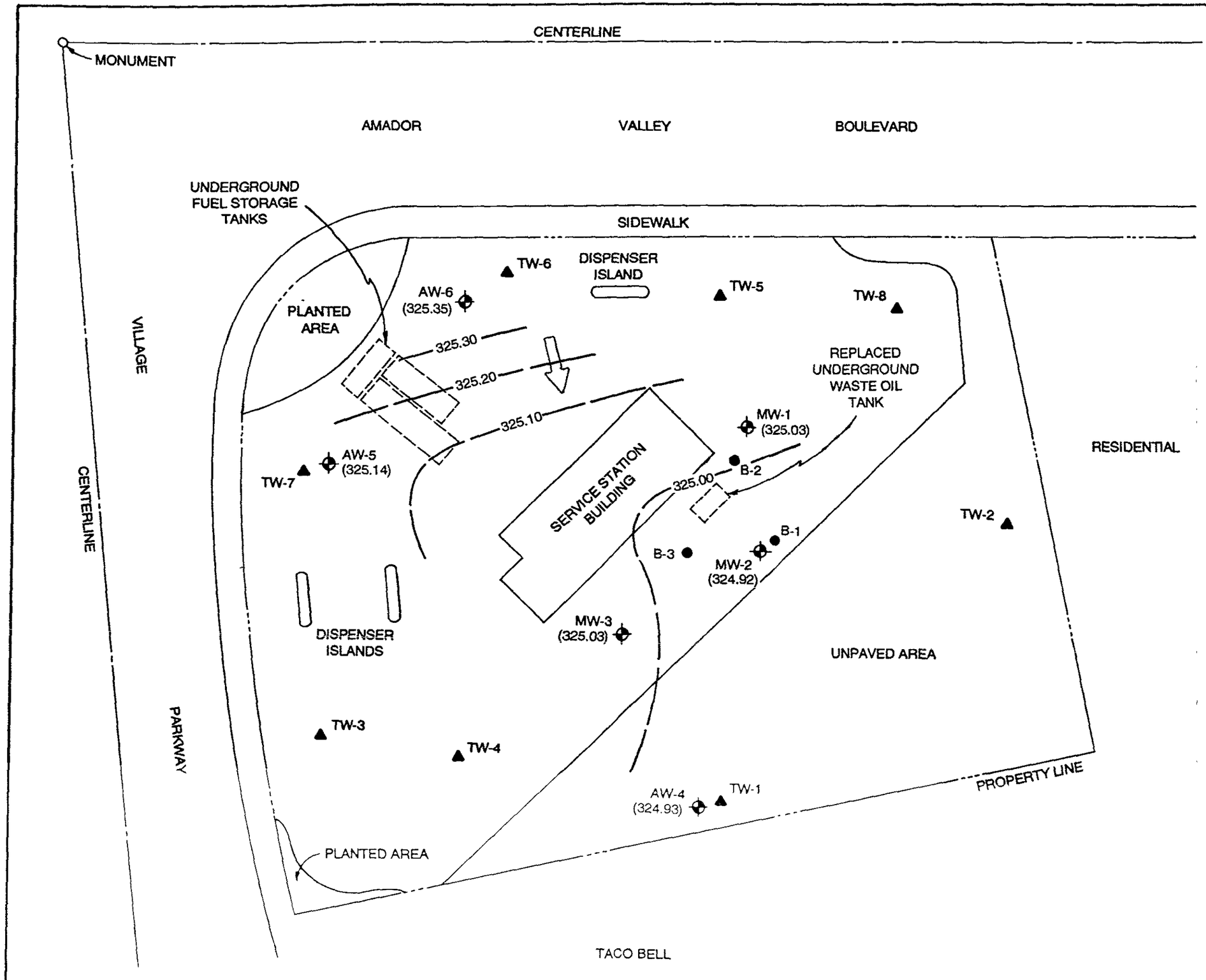
FIGURE 4

GEOLOGIC CROSS SECTIONS A-A' AND B-B'

FORMER MOBIL OIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520



SCALE: 1" = 30'

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING
- QUALITATIVE SHALLOW GROUND WATER SURVEY BORING
- (325.03) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- — 325.00 — GROUND WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.1 FEET)
- ESTIMATED GROUND WATER FLOW DIRECTION

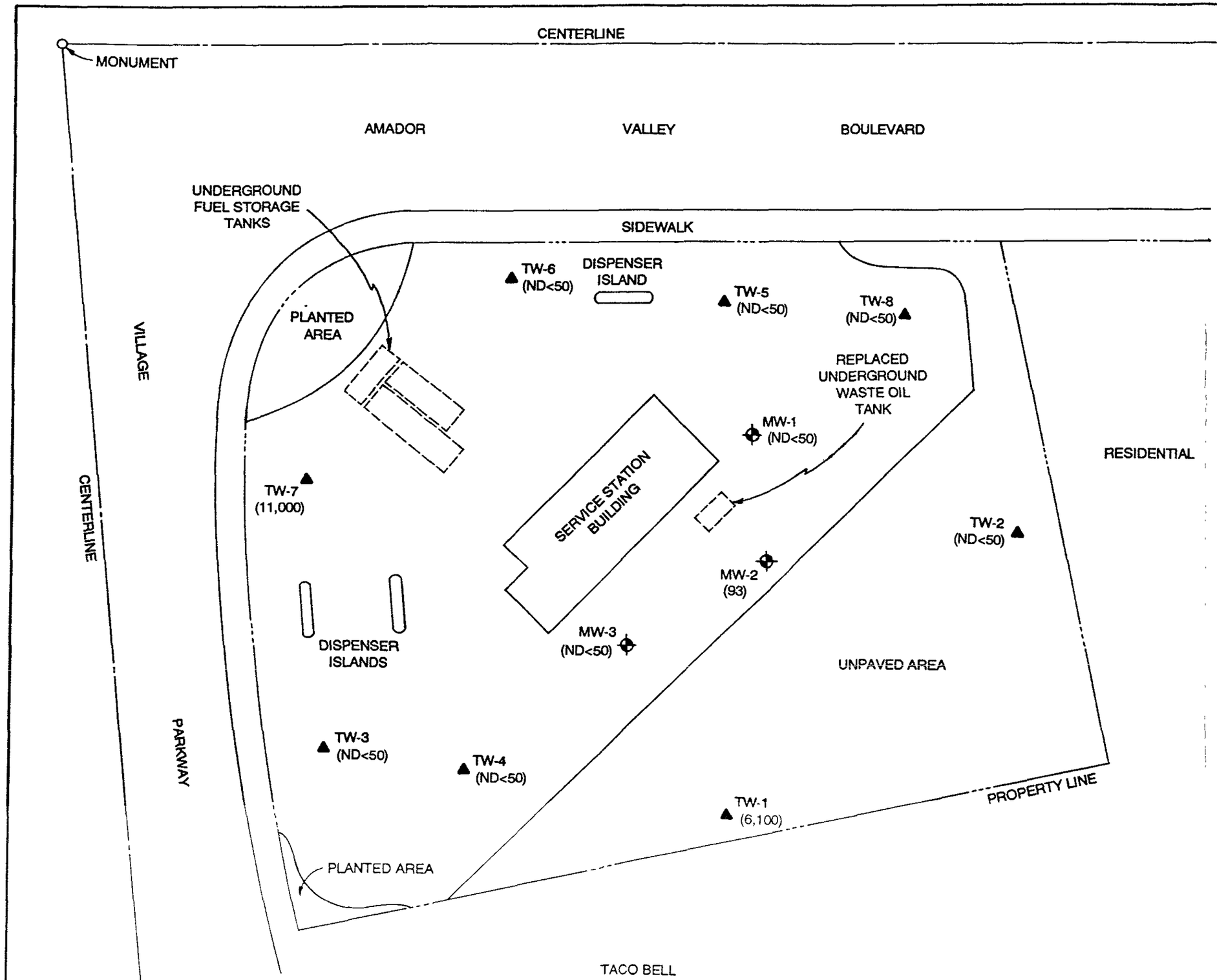
FIGURE 5

GROUND WATER ELEVATION CONTOUR MAP (NOVEMBER 15, 1990)

FORMER MOBIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520



SCALE: 1" = 30'

LEGEND

- GROUND WATER MONITORING WELL
- TEMPORARY WELL LOCATION
- (ND<50) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE CONCENTRATION IN PARTS PER BILLION

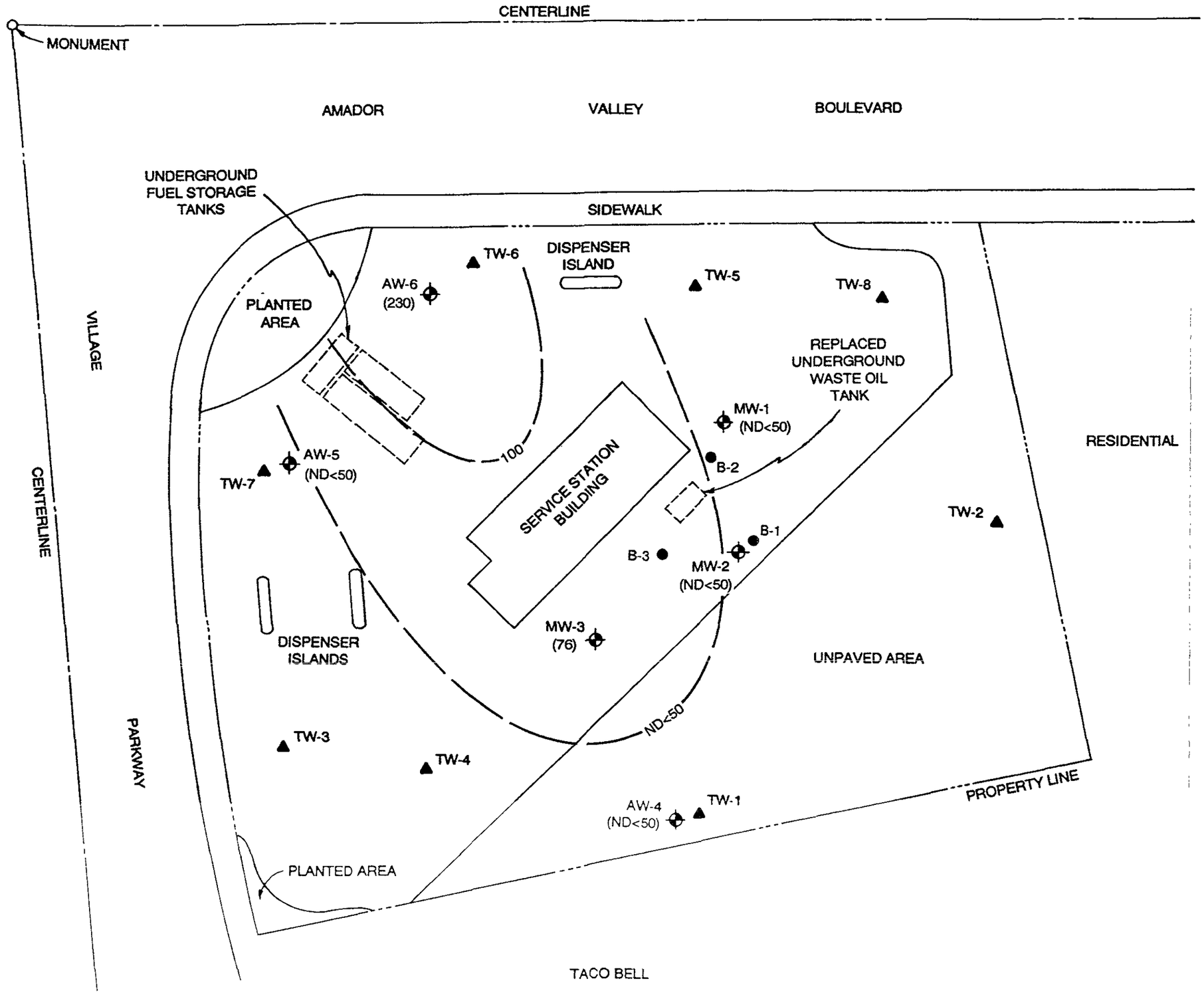
FIGURE 6

QUALITATIVE SHALLOW GROUND WATER SURVEY LOCATION MAP

FORMER MOBIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520



N

SCALE: 1" = 30'

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING
- QUALITATIVE SHALLOW GROUND WATER SURVEY BORING
- (76) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE CONCENTRATION IN PARTS PER BILLION
- —100— TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION CONTOUR IN PARTS PER BILLION

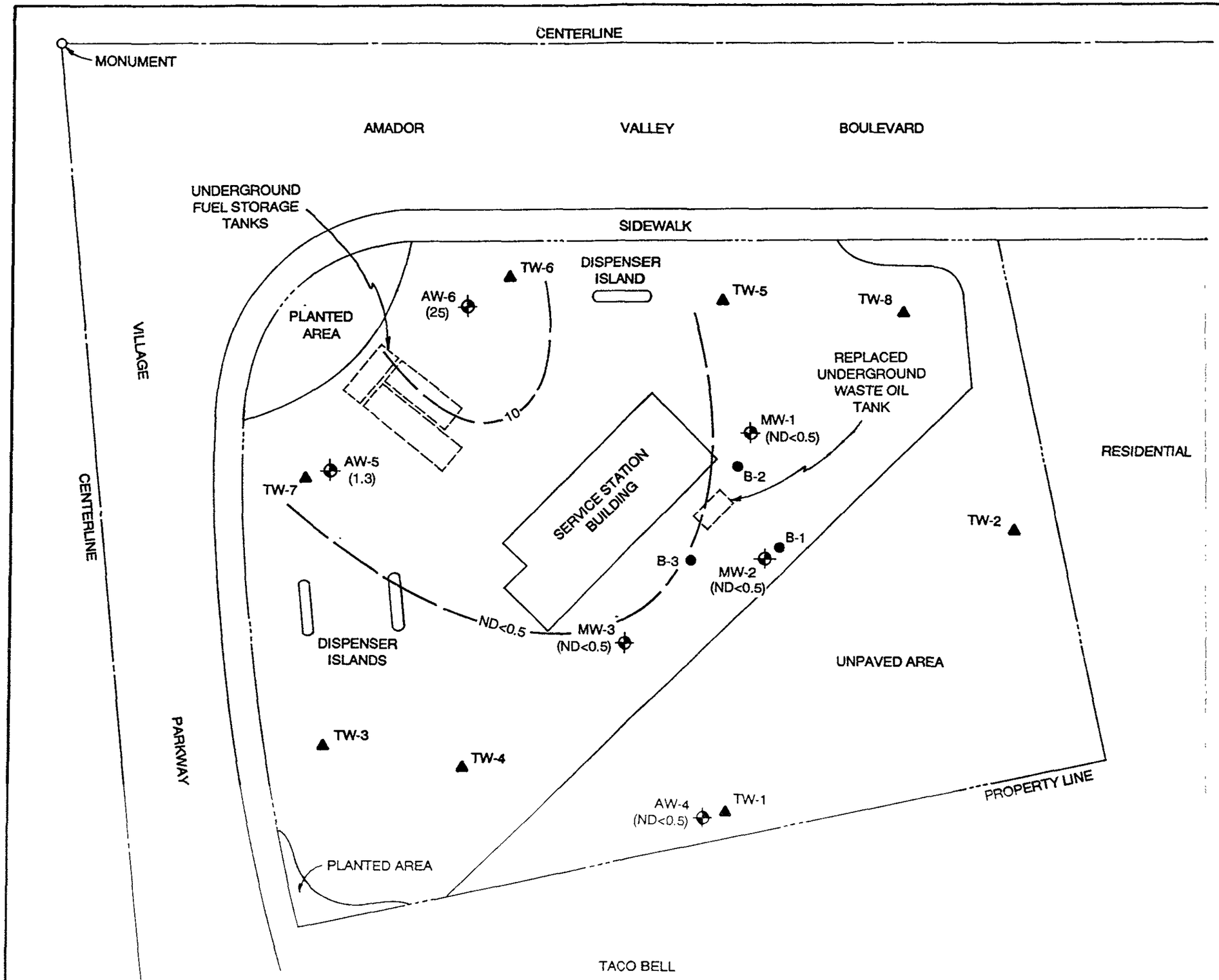
FIGURE 7

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION MAP (NOVEMBER 15, 1990)

FORMER MOBIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520



N

SCALE: 1" = 30'

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING
- QUALITATIVE SHALLOW GROUND WATER SURVEY BORING
- (1.3) BENZENE CONCENTRATION IN PARTS PER BILLION
- —10— BENZENE ISOCONCENTRATION CONTOUR IN PARTS PER BILLION

FIGURE 8

BENZENE ISOCONCENTRATION MAP (NOVEMBER 15, 1990)

FORMER MOBIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520

REFERENCES

1) Alameda County Health Agency, November 27, 1990, Preliminary Groundwater Investigation at Former Mobil Station 10-KNK.

2) Alton Geoscience, Inc., January 15, 1990, Work Plan Site Investigation.

3) California Regional Water Quality Control Board, July 1, 1988 and revised April 3, 1989, Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks.

4) Department of Water Resources, June 1974, Evaluation of Groundwater Resources: Livermore and Sunol Valley, Bulletin No. 118-2.

5) Kaprealian Engineering, Inc., January 11, 1989a, Soil Sampling Report.

6) Kaprealian Engineering, Inc., October 17, 1989b, Preliminary Ground Water Investigation.

APPENDIX A

SENSITIVE RECEPTORS SURVEY

SENSITIVE RECEPTORS SURVEY
SITE SURVEY AND LITERATURE SEARCH

Client: Mobil Oil Corporation Project No.: 30-095

Station No.: 10-KNK

Location: 7197 Village Parkway

City/State: Dublin, California

I. Provide answers to the following questions:

A. Is there a public water supply well within 2500 feet? Y/N No
If Yes, Distance _____ ft.

B. Is there a private water supply well within 1000 feet? Y/N No
If Yes, Distance _____ ft.

C. Is there a subway within 1000 feet? Y/N No
If Yes, Distance _____ ft.

D. Is there a basement within 1000 feet? Y/N Unknown
If Yes, Distance _____ ft.

E. Is there a school within 1000 feet? Y/N No
If Yes, Distance _____ ft.

F. Is there a surface body of water within 1000 feet? Y/N No
If Yes, Distance _____ ft.
Name _____

II. Describe type of local water supply.

Public: Alameda County Flood Control & Water Conservation District

- Suppliers Name: Dublin/San Ramon Services District
- Suppliers Source: Approx 90% Delta; Approx. 10% ground water
- Distance to Site: Approximately 3 miles

Private: None

SENSITIVE RECEPTORS SURVEY
SITE SURVEY AND LITERATURE SEARCH

III. Distance to Nearest Adjacent Properties:

Residential	0 ft.
Commercial	0 ft.
Industrial	None in vicinity
Hospital (Amador Valley Medical Clinic)	2,000 ft.
School (Valley High School)	1,500 ft.
Name	

IV. Aquifer Classification, if available.

Class I	- Special Ground Waters	
	- Irreplaceable Drinking Water Source	
	- Ecologically Vital	
Class II	- Current and Potential Drinking Water Sources	
Class III	- Not Potential Source of Drinking Water	X

V. Describe observation wells, if any.

Number	6
Free Product? Y/N	No

VI. Signature of Preparer: Brad Q/K

Date: 1/4/91

VII. Sketch of Site

APPENDIX B

DRILLING AND SOIL SAMPLING

APPENDIX B

DRILLING AND SOIL SAMPLING

Soil borings/monitoring wells were drilled using 8- and 10-inch-diameter, continuous-flight, hollow-stem augers. To avoid cross-contamination, the augers were steam cleaned prior to drilling each boring.

Soil samples were obtained for soil description, field hydrocarbon vapor testing, and laboratory analysis. Samples were collected at 5-foot intervals from Borings B-1, B-2, and B-3 and from Borings AW-4, AW-5, and AW-6.

Soil samples collected at 5-foot intervals were retrieved ahead of the lead auger using an 18-inch-long by 2-inch-diameter split spoon sampler lined with 1.5-inch-diameter stainless steel sample tube inserts. The sampler and sample tubes were washed with a sodium tripolyphosphate solution and rinsed before each sampling event. The sampler was driven by a 30-inch free fall of a 140-pound hammer. Blow counts were recorded for three successive 6-inch intervals.

Upon retrieval from the 18-inch sampler, the sample tubes were removed and securely sealed with aluminum sheeting and polyurethane caps. The bottom sample tube was removed and capped. The sample was labeled with sample identification, sample depth, engineer's initials, and date of collection. The soil sample was kept on dry ice prior to and during transport to a state-certified laboratory.

The remaining soil recovered was described in accordance with the Unified Soil Classification System. For each soil type, field estimates of density/consistency, moisture, color, grading, and soil type were recorded on the boring logs.

APPENDIX C

MONITORING WELL INSTALLATION PROCEDURES

APPENDIX C

MONITORING WELL INSTALLATION PROCEDURES

Included in this appendix are monitoring well installation and construction details for monitoring wells installed as part of this study.

Monitoring wells were constructed of 4-inch-diameter, flush-threaded, Schedule 40, PVC, blank and screened (0.010-inch slot size) casing. The annular space surrounding the screened portion was backfilled with No. 2 Monterey sand (filter pack) to approximately 2 feet above the top of the screened section. A 1-foot-thick, bentonite, annular seal was placed above the filter pack and the remaining annulus was grouted with neat cement to the surface. Utility boxes were installed slightly above grade to minimize infiltration of surface waters. Locking, water-tight well caps were installed to ensure the integrity of the well.

APPENDIX D

PERMITS

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94566 • (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7197 VILLAGE PARKWAY, DUBLIN (AT AMADOR VALLEY BLVD.)

CLIENT
Name MOBIL OIL CORP.
Address 3800 W. ALAMEDA Phone (818) 953-2626
City BURBANK Zip 91505-4331

APPLICANT
Name BRADY NAGLE / ALTON GEOSCIENCE
Address 1000 BURNETT Phone (415) 682-1582
City CONCORD Zip 94520

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other N/A
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C57 554979

WELL PROJECTS
Drill Hole Diameter 10 In. Maximum
Casing Diameter 4 In. Depth 30 ft.
Surface Seal Depth 7 ft. Number 2

~~GEOTECHNICAL PROJECTS~~ Contamination Investigation*
Number of Borings 10 Maximum
Hole Diameter 8 In. Depth 15 ft.

ESTIMATED STARTING DATE 10/12/90
ESTIMATED COMPLETION DATE 10/31/90

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Brady Nagle Date 10/1/90

FOR OFFICE USE

PERMIT NUMBER 90609
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

* Details from Brady Nagle, 3 October 1990.
Note: On 10/12/90 borings will be drilled, g.w. samples collected, and borings grouted. Wells will be installed approx. 2 weeks later at locations yet to be determined.

Approved Todd N. Wendler Date 3 Oct 90

121989

APPENDIX E

BORING LOGS

REFERENCES

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		A.C. Pavement Clay, sand and gravel: fill. Gravel to 8".
			CH	Clay, high plasticity, stiff, moist, black.
9/18/24		5	ML SM	Silt, 10-15% clay, stiff, moist, dark gray. Silty sand, dense, moist, dark gray.
6/7/10		10	CH	Clay, high plasticity, stiff, moist, black, with cementation from 9-14', blocky. Color change at 11' to very dark gray.
6/8/9	▼			
		15		Clay, high plasticity, trace-20% silt and sand, stiff, moist, dark olive gray to very dark gray.
		20		

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
			CH	Clay, as above.
				Silty clay, high plasticity, stiff, moist, olive gray.
		25		
		30		
		35		
		40		TOTAL DEPTH 26'

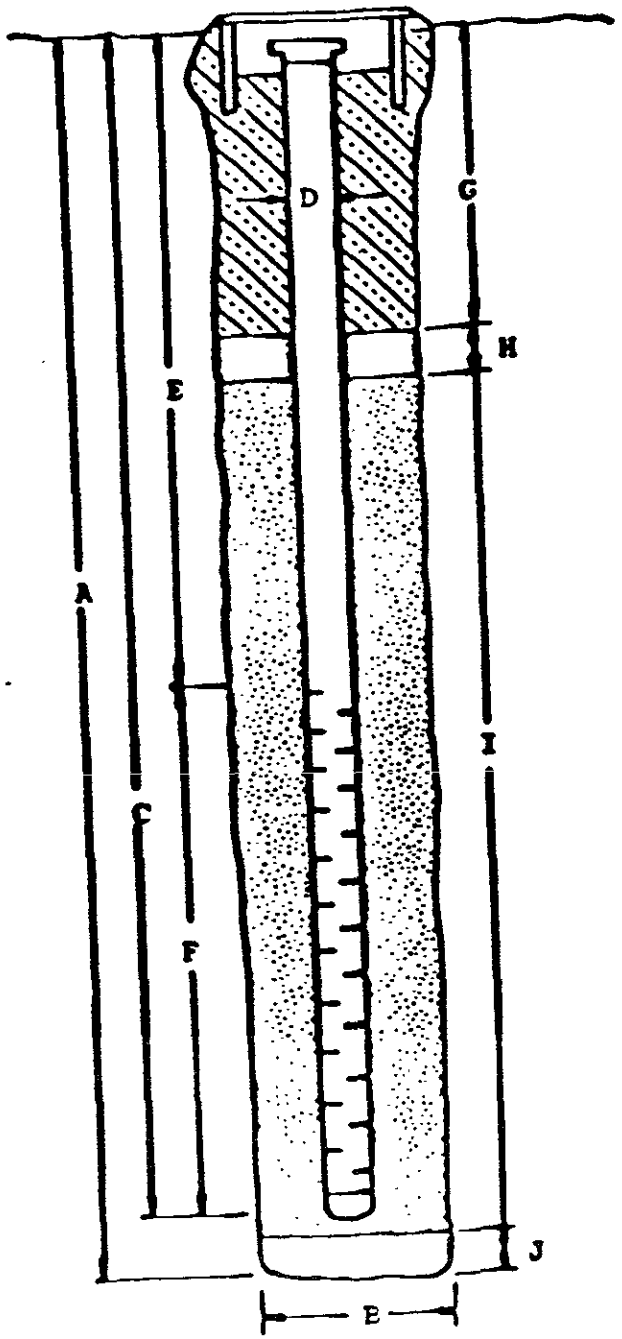
WELL COMPLETION DIAGRAM

PROJECT NAME: Mobil - Dublin, Village Parkway BORING/WELL NO. MW1

PROJECT NUMBER: KEI-P88-1206

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 26'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 26'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375" ID = 2.067"

E. Depth to Perforations: 6'

F. Perforated Length: 20'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 21'

Pack Material: RMC Lonestar Sand

Size: #3

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW2	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		A.C. Pavement Clay, sand and gravel: fill.
			CH	Clay, high plasticity, stiff, moist, black.
				Silt with clay, stiff, moist, dark gray.
14/17/21		5	ML SM	Silty sand, dense, moist, dark gray.
				Sandy clay, high plasticity, stiff, moist, very dark gray.
8/13/12		10	CH/ CL	
9/11/11				Clay, high plasticity, stiff, moist, dark olive gray with cementation, blocky. Color change at 14' to very dark gray.
8/8/14	▼	15		Clay, high plasticity, trace-20% silt and sand, stiff, moist, dark olive gray to very dark gray.
		20		

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW2	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		25	CH	Clay, as above.
				Silty clay, high plasticity, stiff, moist, olive gray.
		30		
		35		
		40		TOTAL DEPTH 26'

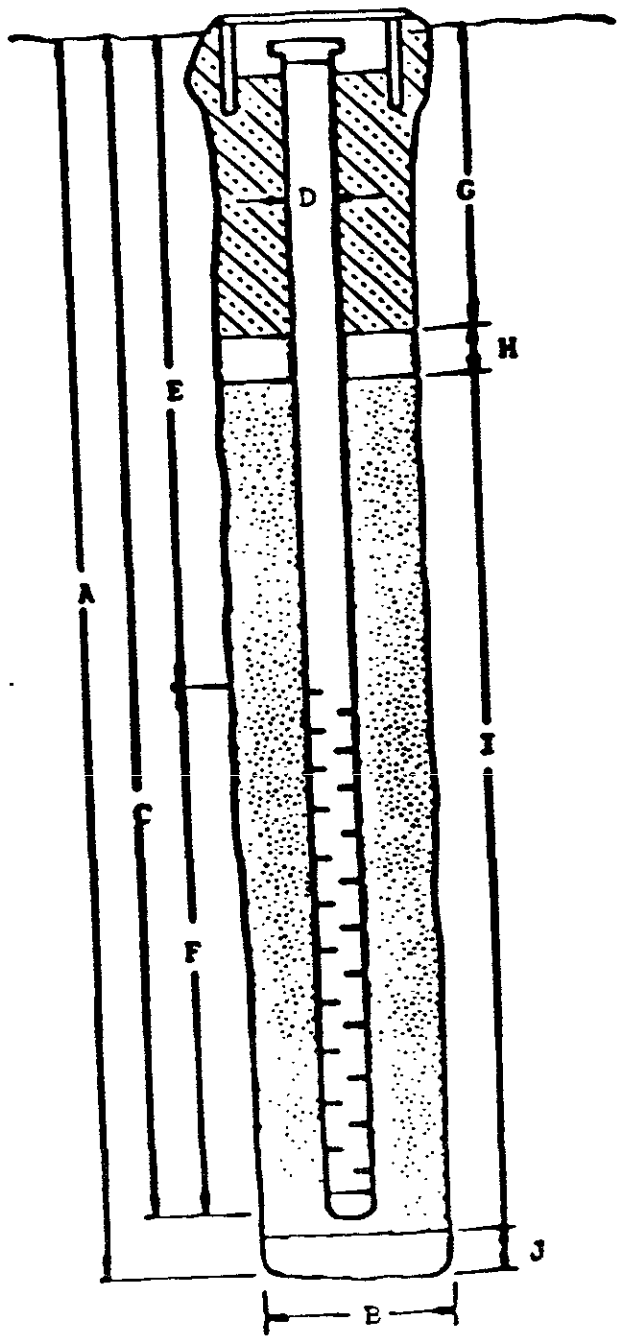
WELL COMPLETION DIAGRAM

PROJECT NAME: Mobil - Dublin, Village Parkway BORING/WELL NO. MW2

PROJECT NUMBER: KEI-P88-1206

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 26'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 26'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"
ID = 2.067"

E. Depth to Perforations: 6'

F. Perforated Length: 20'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 21'

Pack Material: RMC Lonestar Sand

Size: #3

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		A.C. Pavement Clay, sand and gravel: fill.
			CH	Clay, high plasticity, stiff, moist, black, silty above 3'.
10/16/22		5	ML	Silt, 10-15% clay, stiff, moist, dark gray.
				Clay, high plasticity, stiff, moist, very dark gray to black.
5/5/6		10	CH	Sandy clay, high plasticity, soft, moist to very moist, very dark gray, with cemented root holes, increasing with depth.
9/9/12				Silty clay, high plasticity, trace sand, firm, moist, dark olive gray, with cemented root holes, trace gravel below 13'.
4/7/9	▼	15		
				Clay, high plasticity, very stiff, moist, dark olive gray to very dark gray.
9/12/17		20		

BORING LOG

Project No. KEI-P88-1206	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Mobil, Dublin, Village Pkwy.	Well Head Elevation N/A	Date Drilled 8/29/89
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		25	CH	Clay, as above.
				Silty clay, high plasticity, very stiff, moist, olive gray.
		30		
		35		
		40		TOTAL DEPTH 26'

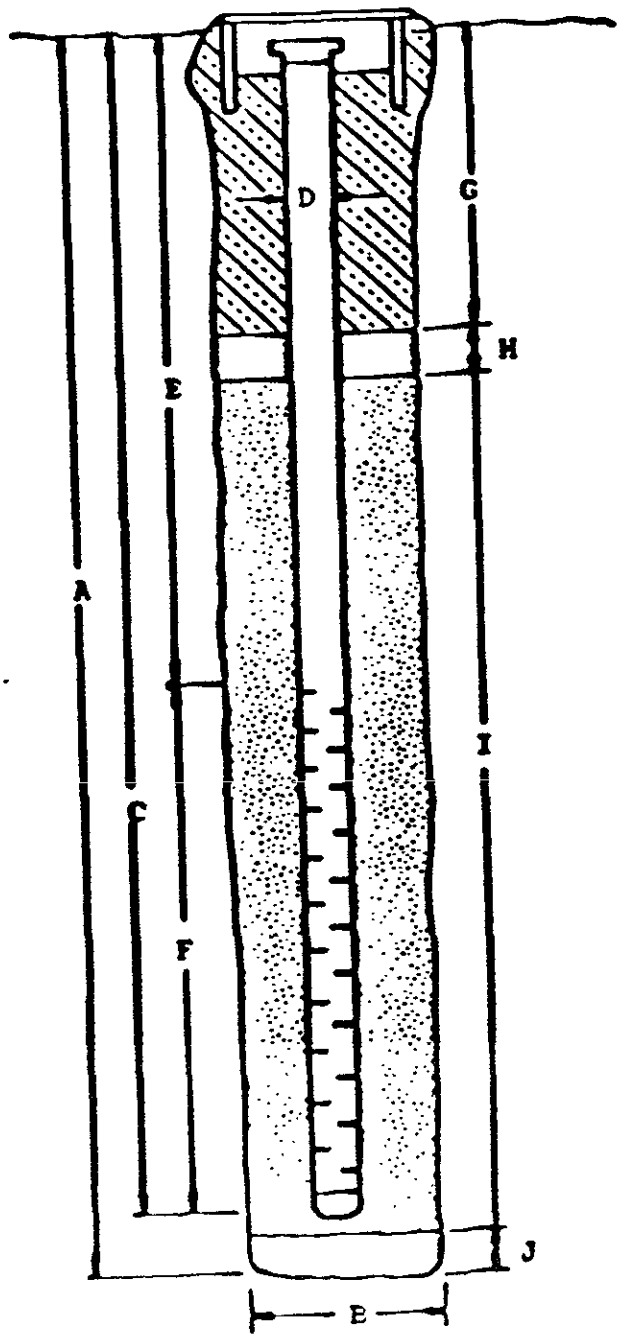
WELL COMPLETION DIAGRAM

PROJECT NAME: Mobil - Dublin, Village Parkway BORING/WELL NO. MW3

PROJECT NUMBER: KEI-P88-1206

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 26'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 26'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375" ID = 2.067"

E. Depth to Perforations: 6'

F. Perforated Length: 20'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 2'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 22'

Pack Material: RMC Lonestar Sand

Size: #3

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 10/12/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY W. Shipp APPROVED BY

BORING NO. B-1

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION

DRILLING METHOD Hollow stem auger HOLE DIAM. 8.5"
SAMPLER TYPE Modified split spoon
CASING DATA NA
DRILLER West Hazmat

WATER LEVEL	NA		
DATE	-		
TIME	-		

BLOWS PER FOOT(N)	CGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
			0				3" asphalt; 5" backfill
			2		CL		SILTY CLAY; dark brown, moist, medium plasticity, stiff
			4	Portland Cement			
	0		6		SM		SANDY SILT; brown, moist, low plasticity, hard
			8				SILTY CLAY; dark brown, moist, medium plasticity, hard; some rootlets
	0		10		CL		Same; trace calcite
			12				
			14				
	0		16				Same; becomes wet
			18				
			20				Same
			22				
			24				
			26				
			28				
			30				
			32				
			34				

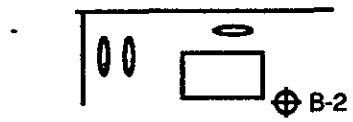
Boring terminated at approximately 21.5 feet below grade

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 10/12/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY W. Shipp APPROVED BY

BORING NO. B-2

FIELD SKETCH OF BORING LOCATION



TOP OF CASING ELEVATION

DRILLING METHOD Hollow stem auger HOLE DIAM. 8.5"
SAMPLER TYPE Modified split spoon
CASING DATA NA
DRILLER West Hazmat

WATER LEVEL	NA		
DATE	-		
TIME	-		

BLOWS PER FOOT(N)	CGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
			0				3" asphalt; 5" backfill
			2		CL		SILTY CLAY; dark brown, moist, medium plasticity, firm
			4	Portland Cement			
9, 26, 46	0		6		SM		SANDY SILT; brown, moist, low plasticity, hard
			8				
12, 32, 39	0		10		CL		SILTY CLAY; dark brown, moist, medium plasticity, hard; 10% calcite, trace organics
			12				
			14				
23, 46, 42	0		16				Same; no calcite, some organics
			18				
			20				Same; 2" recovery
13, 23, 36			22				
			24				Boring terminated at approximately 21.5 feet below grade
			26				
			28				
			30				
			32				
			34				

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 10/12/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY

BORING NO. B-3

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION

DRILLING METHOD Hollow stem auger HOLE DIAM. 8.5"
SAMPLER TYPE Modified split spoon
CASING DATA NA
DRILLER West Hazmat

WATER LEVEL	-	~7'	
DATE	11/6/90	11/6/90	
TIME	0830	1700	

BLOWS PER FOOT(N)	CGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
			0				2" asphalt; 4"base material
			2		CL		SILTY CLAY (FILL); with gravels and concrete blocks
28, 19, 12	0		4 6	Portland Cement	CL		SILTY CLAY TO CLAYEY SILT (POSSIBLY FILL); with abundant gravels to 1" diameter, brown, moist
5, 5, 9	0		8 10		CL		SILTY CLAY; dark brown with white mottling, damp to moist, high plasticity, stiff; abundant calcium carbonate
2, 4, 5	0		12 14 16				Color change to grayish brown, very moist
5, 7, 12			18 20				Appearance of occaisional rootlets
			22 24 26 28 30 32 34				Boring terminated at approximately 21.5 feet below grade

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 11/6/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY

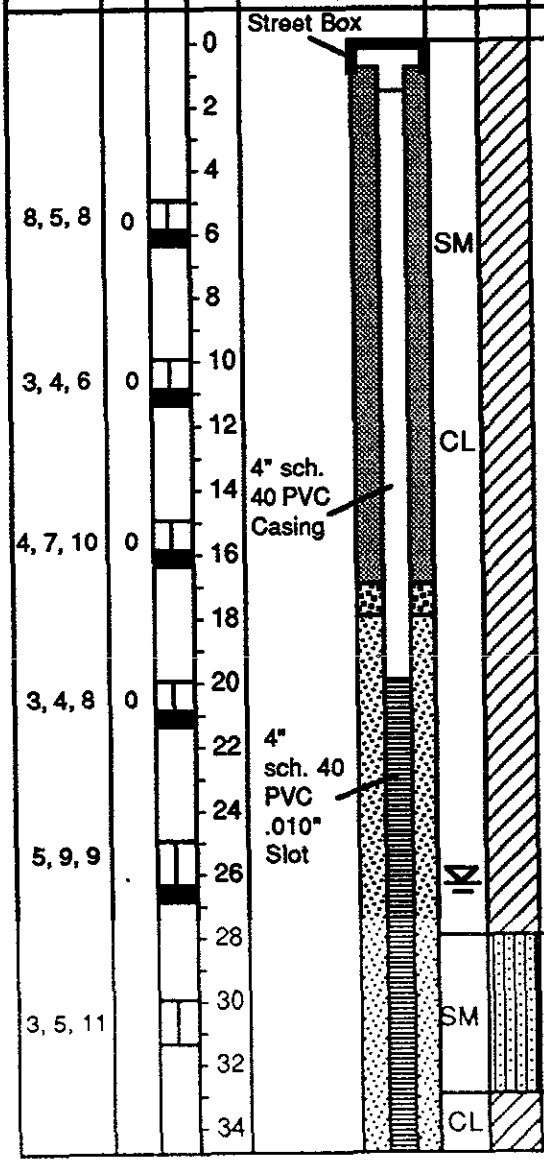
BORING NO. AW-4
WELL NO. AW-4

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 333.44

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
SAMPLER TYPE Modified split spoon
CASING DATA Perforations: 20-35'
DRILLER West Hazmat

WATER LEVEL	26'	8.51'	
DATE	11/6/90	11/15/90	
TIME	0930		



DESCRIPTION
SILTY CLAY; brown, damp to moist, moderate plasticity, stiff; minor lens of silty sand
Appearance of abundant rootlets; no sand lens
Appearance of occasional gravels to 1/2-inch diameter; no rootlets
Appearance of minor sand; moisture change to moist
Color change to mottled grayish brown and brown; moisture change to wet
Softer drilling at 28 feet SILTY SAND; light brown, wet, medium dense
SILTY CLAY; brown, damp to moist, low plasticity, very stiff

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 11/6/90
CLIENT Mobil Oil Corporation, USA
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY

BORING NO. AW-4
WELL NO. AW-4

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 333.4

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
SAMPLER TYPE Modified split spoon
CASING DATA Perforations: 20-35
DRILLER West Hazmat

BLOWS PER FOOT(N)	OVA (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE				
							WATER LEVEL			
							DATE			
							TIME			
							DESCRIPTION			
			34	End Cap			SILTY CLAY; brown, damp to moist, low plasticity, very stiff			
5, 11, 12			36							
			38				Boring termiated at 36.5'			
			40				Free ground water encountered at approximately 26.5 feet below grade.			
			42							
			44							
			46							
			48							
			50							

Portland Cement
Sand #3 Lonestar
Bentonite Pellets
Driven interval
Sample
Water level encountered during

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 11/6/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY

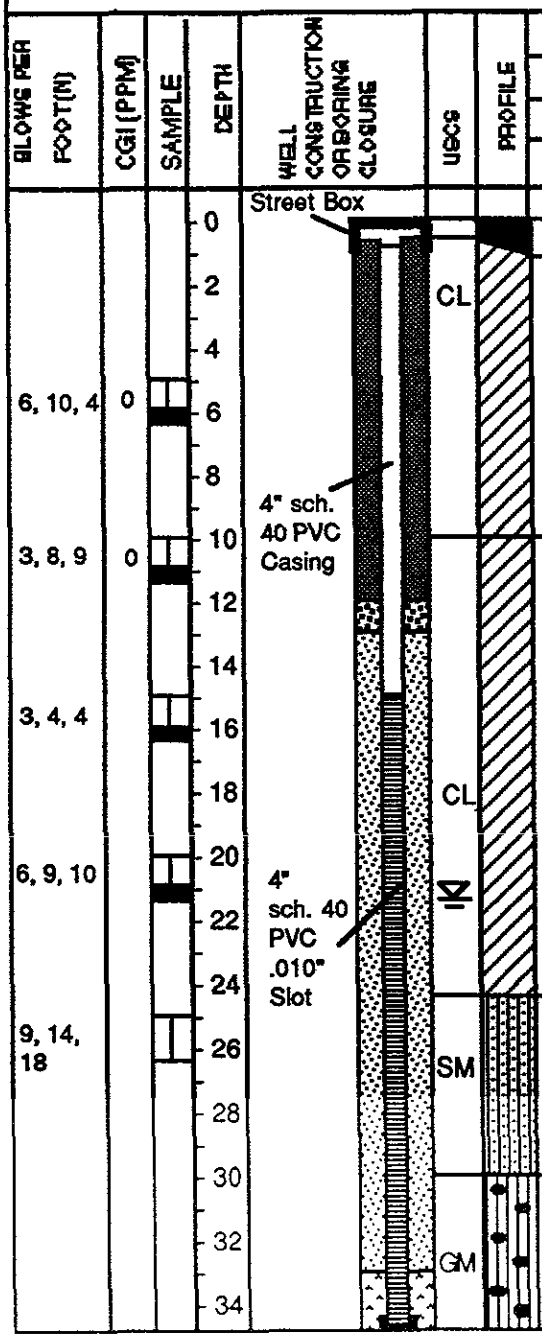
BORING NO. AW-5
WELL NO. AW-5

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 334.81

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
SAMPLER TYPE Modified split spoon
CASING DATA Perforations: 15-35'
DRILLER West Hazmat

WATER LEVEL	21.5	9.67'	
DATE	11/6/90	11/15/90	
TIME	1200	–	



DESCRIPTION

4" asphalt; 4" base material

SANDY CLAY; dark grayish brown, damp, moderate plasticity, very stiff

SILTY CLAY; very dark brown to black, damp, high plasticity, stiff

Color change to tan; minor coarse sand and rootlets

Color change to dark gray, moisture change to wet at 21.5 feet below grade

SILTY SAND; light brown, wet, medium dense

Unable to sample below 26.5 feet due to flowing sand; abundant gravel in cuttings from below 30 feet

Boring terminated at 35 feet below grade
Free ground water encountered at appoximately 21.5 feet below grade

Portland Cement | Bentonite Pellets | Sample
Sand #3 Lonestar | Native Soil | Driven interval

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-095 DATE DRILLED 11/6/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY

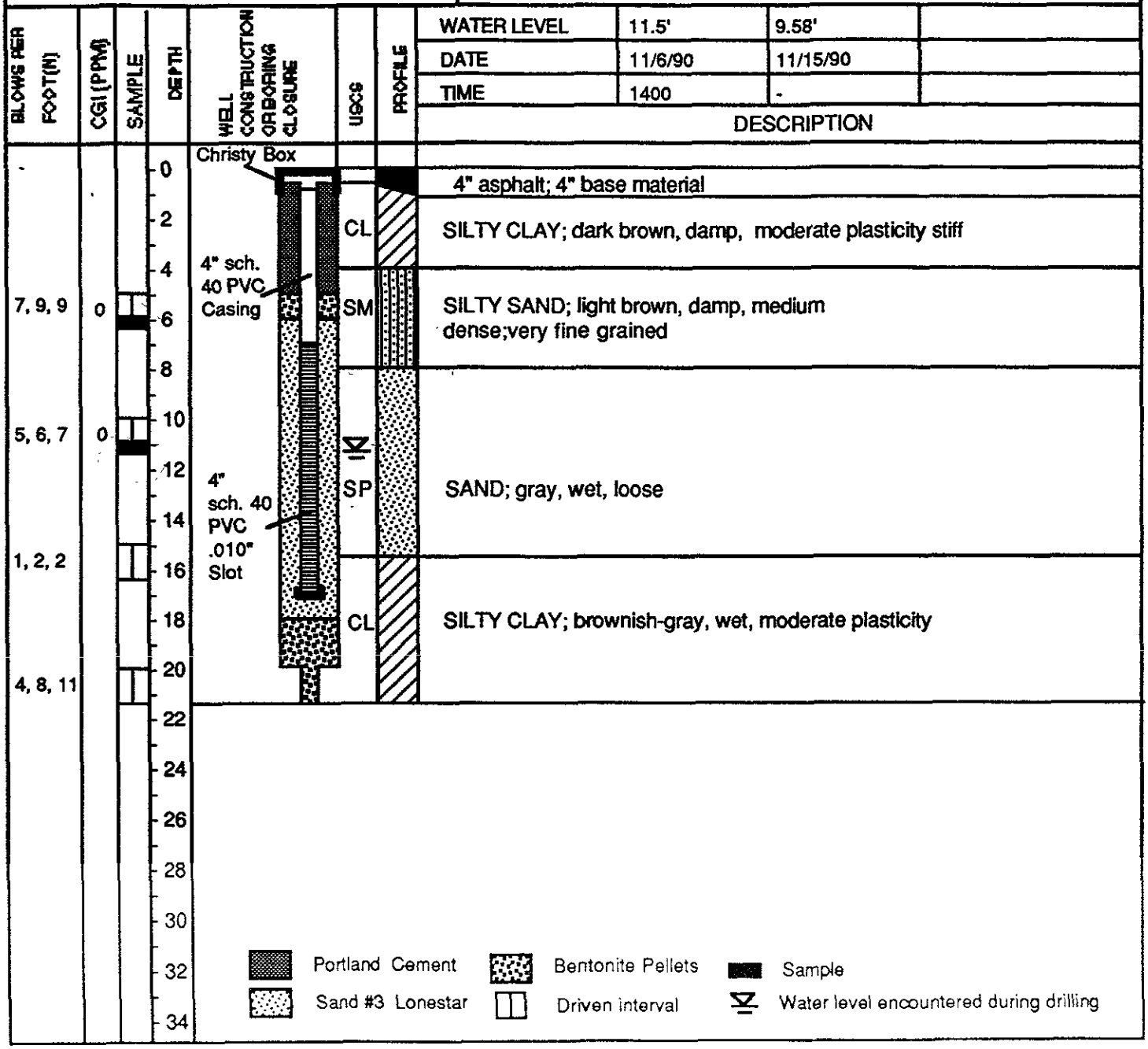
BORING NO. AW-6
WELL NO. AW-6

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 334.93

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
SAMPLER TYPE Modified split spoon
CASING DATA Perforations: 7-17'
DRILLER West Hazmat

WATER LEVEL	11.5'	9.58'	
DATE	11/6/90	11/15/90	
TIME	1400	-	



APPENDIX F

WELL DEVELOPMENT, WATER SAMPLING PROCEDURES, AND FIELD SURVEY FORMS

APPENDIX F

WELL DEVELOPMENT, WATER SAMPLING PROCEDURES, AND FIELD SURVEY FORMS

All purging and ground water sampling equipment was cleaned prior to use to minimize cross-contamination between wells. All equipment in contact with ground water was triple-rinsed prior to each sampling event in successive baths consisting of tripolyphosphate solution, tap water, and deionized water. Prior to sampling, the well was developed and purged in accordance with EPA protocol. During purging, pH, temperature, and electroconductivity were measured periodically until these parameters stabilized, indicating formation water had entered the well casing. The purged water was pumped into barrels prior to disposal or recycling at an appropriate waste disposal facility.

Ground water samples were collected by lowering a 4-inch-diameter, bottom-fill, Teflon bailer just below the water level in the well. The samples were carefully transferred from the check-valve-equipped Teflon bailer to zero-headspace, 1-liter and 40-milliliter glass containers fitted with Teflon-sealed caps. All samples were inverted to ensure that entrapped air was not present. Each sample was labeled with sample number, well number, sample date, and geologist's initials. The samples remained on ice prior to laboratory analysis.

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 10-12-90
Well: MW-1 **Sampling Team:** C. Ladd/W. Shipp
Well Development Method:
Sampling Method: PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water, and deionized water

---

Well Development/Well Sampling Data

Total Well Depth: 25.34 **feet** **Time:** 9:00 **Water Level Before Pumping:** 9.92'

Water Column	Casing Diameter 2-inch	4-inch	Volume Factor		Volume to Purge
15.42 ft. x 0.16 or x 0.65			2.5 x	3.0 =	7.5

Depth Purging From: All **feet.** **Time Purging Begins:** 5:30

Notes on Initial Discharge: Cloudy

Time	Volume	pH	Conductivity	Temp.	Comments
5:52	3.5	6.50	11.44	71.1	Cloudy, greenish gray
5:56	4.5	6.52	10.13	69.9	Cloudy, greenish gray
6:00	5.5	6.50	10.07	70.1	Cloudy, greenish gray
6:05	6.5	6.57	10.13	69.7	Cloudy, greenish gray
6:09	7.5	6.51	9.82	70.6	Cloudy, greenish gray

Time Field Parameter Begins:

	Rep #1	Rep #2	Rep #3	Rep #4
pH	6.52	6.50	6.57	6.51
Conductivity	10.13	10.07	10.13	9.82
Temperature (F)	69.9	70.1	69.7	70.6

Time Sample Collection Begins: 6:10
Time Sample Collection Ends: 6:30
Total Gallons Purged: 7.5
Recharge Rate: _____ gal/min or gal/hr
Comments:

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 10-12-90
Well: MW-2 **Sampling Team:** C. Ladd/W. Shipp
Well Development Method:
Sampling Method: PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water, and deionized water

---

Well Development/Well Sampling Data

Total Well Depth: 25.72 feet **Time:** 9:10 **Water Level Before Pumping:** 9.60

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
16.12 ft. x 0.16 or x 0.65			2.57	x 3	= 7.70

Depth Purging From: All feet. **Time Purging Begins:** 6:50

Notes on Initial Discharge: Cloudy

Time	Volume	pH	Conductivity	Temp.	Comments
7:10	3.70	6.73	11.71	66.3	Cloudy, light gray
7:11	4.70	6.72	11.08	66.6	Cloudy, light gray
7:12	5.70	6.72	11.49	66.2	Cloudy, light gray
7:13	6.70	6.72	10.94	65.6	Cloudy, light gray
7:14	7.70	6.77	11.63	65.5	Cloudy, light gray

Time Field Parameter Begins:

	Rep #1	Rep #2	Rep #3	Rep #4
pH	6.72	6.72	6.72	6.77
Conductivity	11.08	11.49	10.94	11.63
Temperature (F)	66.6	66.2	65.6	65.5

Time Sample Collection Begins: 7:00
Time Sample Collection Ends: 7:20
Total Gallons Purged: 8.0
Recharge Rate: _____ gal/min or gal/hr
Comments:

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 10-12-90
Well: MW-3 **Sampling Team:** C. Ladd/W. Shipp
Well Development Method:
Sampling Method: PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water, and deionized water

---

Well Development/Well Sampling Data

Total Well Depth: 25.69 feet **Time:** 9:30 **Water Level Before Pumping:** 10.08

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
15.61 ft. x	0.16	or x 0.65	2.49	x 3	= 7.5

Depth Purging From: All feet. **Time Purging Begins:** 4:00

Notes on Initial Discharge: Cloudy

Time	Volume	pH	Conductivity	Temp.	Comments
4:19	3.5	6.57	11.35	69.7	Cloudy, greenish gray
4:21	4.5	6.55	11.07	68.9	Cloudy, greenish gray
4:24	5.5	6.56	10.99	68.7	Cloudy, greenish gray
4:27	6.5	6.55	10.95	69.1	Cloudy, greenish gray
4:30	7.5	6.54	10.93	68.8	Cloudy, greenish gray

Time Field Parameter Begins:

	Rep #1	Rep #2	Rep #3	Rep #4
pH	6.55	6.56	6.55	6.54
Conductivity	11.07	10.99	10.95	10.93
Temperature (F)	68.9	68.7	69.1	68.8

Time Sample Collection Begins: 4:30
Time Sample Collection Ends: 4:50
Total Gallons Purged: 7.5
Recharge Rate: _____ gal/min or gal/hr
Comments:

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 Site: Mobil Oil, Dublin Date: 11-09-90
Well: AW-4 Sampling Team: _____
Well Development Method: Diaphragm Pump
Sampling Method: _____
Describe Equipment Decontamination Method: _____

Well Development/Well Sampling Data

Total Well Depth: 34.33 feet Time: _____ Water Level Before Pumping: 8.52

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
25.81 ft. x	0.16 or x	0.65	16.8	x 10	= 168

Depth Purging From: _____ feet. Time Purging Begins: _____

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments

Time Field Parameter Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: _____
Time Sample Collection Ends: _____
Total Gallons Purged: 168
Recharge Rate: _____ gal/min or gal/hr
Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 Site: Mobil Oil, Dublin Date: 11-09-90
Well: AW-5 Sampling Team: _____
Well Development Method: Hand Bailer
Sampling Method: _____
Describe Equipment Decontamination Method: _____

Well Development/Well Sampling Data

Total Well Depth: 29.52 feet Time: _____ Water Level Before Pumping: 9.78

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor		Volume to Purge
19.74 ft. x	0.16 or x	0.65	12.8	x 10	=	128

Depth Purging From: _____feet. Time Purging Begins: _____

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments

Time Field Parameter Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: _____
Time Sample Collection Ends: _____
Total Gallons Purged: 128
Recharge Rate: _____ gal/min or gal/hr
Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11-09-90
Well: AW-6 **Sampling Team:** _____
Well Development Method: Hand Bailer
Sampling Method: _____
Describe Equipment Decontamination Method: _____

Well Development/Well Sampling Data

Total Well Depth: 16.73 feet **Time:** _____ **Water Level Before Pumping:** 9.74

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
6.99 ft. x	0.16 or x	0.65	4.54	x 10	= 45.4

Depth Purging From: _____ feet. **Time Purging Begins:** _____

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments

Time Field Parameter Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: _____
Time Sample Collection Ends: _____
Total Gallons Purged: 46
Recharge Rate: _____ gal/min or gal/hr
Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: MW-1 **Sampling Team:** L. Buenvenida
Well Development Method: Diaphragm Pump
Sampling Method: 2" PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water

---

Well Development/Well Sampling Data

Total Well Depth: 25.64 feet **Time:** 1345 **Water Level Before Pumping:** 10.16

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
15.48 ft.	x 0.16	or x 0.65	2.48	x 4	= 9.92

Depth Purging From: 17 feet. **Time Purging Begins:** 13.56

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments
1357	1.5	6.94	9.61	69.3	Cloudy
1359	3.0	6.80	10.38	69.8	Cloudy
1400	4.5	6.75	10.35	68.5	Cloudy
1401	6.0	6.77	9.84	68.0	Cloudy
1403	7.5	6.76	9.83	67.5	Cloudy

Time Field Parameter Begins: 13.57

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1557
Time Sample Collection Ends: 1558
Total Gallons Purged: 10
Recharge Rate: _____ gal/min or gal/hr
Comments: meter x 1000

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: MW-2 **Sampling Team:** L. Buenvenida
Well Development Method: Diaphragm Pump
Sampling Method: 2" PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water.

Well Development/Well Sampling Data

Total Well Depth: 25.42 feet **Time:** 1407 **Water Level Before Pumping:** 9.68

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
15.74 ft. x	(0.16)	or x 0.65	2.52	x 4	= 10.08

Depth Purging From: 12 feet. **Time Purging Begins:** 1410

Notes on Initial Discharge:

Time	Volume	pH	Conductivity	Temp.	Comments
1411	2	7.15	11.68	67.7	Cloudy
1412	4	7.03	11.64	67.5	Cloudy
1413	6	7.02	11.68	67.4	Cloudy
1414	8	6.95	11.85	67.3	Cloudy
1417	10	6.94	11.86	66.9	Cloudy

Time Field Parameter Begins: 1411

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1552
Time Sample Collection Ends: 1553
Total Gallons Purged: 10.5
Recharge Rate: _____ gal/min or gal/hr
Comments: meter X 1000

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: MW-3 **Sampling Team:** L. Buenvenida
Well Development Method: Diaphragm Pump
Sampling Method: 2" PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water.

Well Development/Well Sampling Data

Total Well Depth: 25.32 feet **Time:** 1421 **Water Level Before Pumping:** 10.16

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
15.16 ft. x	(0.16)	or x 0.65	2.43	x 4	= 9.72

Depth Purging From: 18 feet. **Time Purging Begins:** 1421

Notes on Initial Discharge:

Time	Volume	pH	Conductivity	Temp.	Comments
1422	1.5	6.98	10.21	67.8	Cloudy
1423	3.0	6.82	10.08	69.9	Cloudy
1424	4.5	6.77	10.56	69.4	Cloudy
1426	6.0	6.77	10.56	68.6	Cloudy
1428	7.5	6.76	10.57	67.9	Cloudy

Time Field Parameter Begins: 1422

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1540
Time Sample Collection Ends: 1541
Total Gallons Purged: 10
Recharge Rate: _____ gal/min or gal/hr
Comments: meter X 1000

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: AW-4 **Sampling Team:** L. Buenvenida
Well Development Method: Diaphragm Pump
Sampling Method: 2" PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water.

Well Development/Well Sampling Data

Total Well Depth: 34.15 feet **Time:** 1432 **Water Level Before Pumping:** 8.51

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
25.64 ft. x	0.16 or x	(0.65)	16.67	x 4	= 66.68

Depth Purging From: 14 feet. **Time Purging Begins:** 1434

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments
1436	10	7.36	8.13	66.1	Cloudy
1442	20	7.20	8.24	68.2	Cloudy
1449	30	7.15	8.17	68.2	Cloudy
1455	40	7.08	8.54	68.1	Cloudy
1500	50	7.09	8.52	67.7	Cloudy

Time Field Parameter Begins: 1436

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1612
Time Sample Collection Ends: 1614
Total Gallons Purged: 67
Recharge Rate: _____ gal/min or gal/hr
Comments: meter X 1000

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: AW-5 **Sampling Team:** L. Buenvenida
Well Development Method: Diaphragm Pump
Sampling Method: 2" PVC Bailer
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water.

Well Development/Well Sampling Data

Total Well Depth: 32.79 feet **Time:** 1134 **Water Level Before Pumping:** 9.67

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
23.12 ft. x	0.16 or x	0.65	15.03	x 4	= 60.12

Depth Purging From: 12 feet. **Time Purging Begins:** 1142

Notes on Initial Discharge: _____

Time	Volume	pH	Conductivity	Temp.	Comments
1145	12	7.67	3.21	73.2	Cloudy
1150	24	7.50	2.99	71.3	Cloudy
1157	36	7.52	3.72	68.7	Cloudy
1203	48	7.46	4.27	67.2	Cloudy
1210	60	7.45	4.26	66.4	Cloudy

Time Field Parameter Begins: 1145

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1630
Time Sample Collection Ends: 1631
Total Gallons Purged: 60.5
Recharge Rate: _____ gal/min or gal/hr
Comments: meter X 1000 slow producer

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey Form

Project No. 30-095 **Site:** Mobil Oil, Dublin **Date:** 11/15/90
Well: AW-6 **Sampling Team:** Diaphragm Pump
Well Development Method: 2" PVC Bailer
Sampling Method:
Describe Equipment Decontamination Method: Triple rinsed with TSP, tap water and deionized water.

Well Development/Well Sampling Data

Total Well Depth: 16.55 feet **Time:** 1207 **Water Level Before Pumping:** 9.58

Water Column	Casing Diameter 2-inch	4-inch	Volume	Factor	Volume to Purge
6.97 ft. x	0.16 or x	0.65	4.53	x 4	= 18.12

Depth Purging From: 15 feet. **Time Purging Begins:** 1210

Notes on Initial Discharge:

Time	Volume	pH	Conductivity	Temp.	Comments
1212	3	7.47	2.47	70.6	Cloudy
1215	6	7.27	2.31	71.1	Cloudy
1219	9	7.28	2.64	70.5	Cloudy
1222	12	7.25	2.58	69.6	Cloudy
1227	15	7.25	2.57	68.9	Cloudy

Time Field Parameter Begins: 1212

	Rep #1	Rep #2	Rep #3	Rep #4
pH				
Conductivity				
Temperature (F)				

Time Sample Collection Begins: 1623
Time Sample Collection Ends: 1624
Total Gallons Purged: 18.5
Recharge Rate: gal/min or gal/hr
Comments: meter X 1000

APPENDIX G

ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

APPENDIX G

ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

This appendix includes copies of the official laboratory reports and chain of custody records for soil and ground water samples selected for laboratory analysis.

Chain of custody protocol was followed for all samples. The chain of custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to actual analysis.

ANAMETRIX INC
Environmental & Analytical Chemistry
1261 Concourse Drive Suite E. San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9010211- 1	MW-1
9010211- 2	MW-2
9010211- 3	MW-3
9010211- 4	TW-1
9010211- 5	TW-2
9010211- 6	TW-3
9010211- 7	TW-4
9010211- 8	TW-5
9010211- 9	TW-6
9010211-10	TW-7
9010211-11	TW-8
9010211-12	B-1@ 6'-6.5'
9010211-13	B-1@ 11'-11.5'
9010211-14	B-1@ 16'-16.5'
9010211-15	B-1@ 21'-21.5'
9010211-16	B-2@ 6'-6.5'
9010211-17	B-2@ 11'-11.5'
9010211-18	B-2@ 16'-16.5'
9010211-19	B-2@ 22.5'-23'

This report is paginated for your convenience and ease of review. It contains 28 pages excluding the cover letter. The report is organized into sections. Each section contains all analytical results and quality assurance data related to a specific group or section within Anametrix. The Report Summary that precedes each section will help you determine which group at Anametrix generated the data. The Report Summary will contain the signatures of the department supervisor and a chemist, both of whom reviewed the analytical data. Please refer all questions to the department supervisor that signed the form.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Burt Sutherland
Laboratory Director

11/2/90
Date

NOV 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9010211- 1	MW-1	H2O	10/12/90	8010
9010211- 2	MW-2	H2O	10/12/90	8010
9010211- 3	MW-3	H2O	10/12/90	8010
9010211-13	B-1@ 11'-11.5'	SOIL	10/12/90	8010
9010211-14	B-1@ 16'-16.5'	SOIL	10/12/90	8010
9010211-15	B-1@ 21'-21.5'	SOIL	10/12/90	8010
9010211-17	B-2@ 11'-11.5'	SOIL	10/12/90	8010
9010211-18	B-2@ 16'-16.5'	SOIL	10/12/90	8010
9010211-19	B-2@ 22.5'-23'	SOIL	10/12/90	8010

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Corinne Ham 11-1-90
Department Supervisor Date

Chemist 11-1-90 Date

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 MW-1
Matrix : WATER
Date sampled : 10/12/90
Date analyzed: 10/19/90
Dilution : NONE

Anametrix I.D. : 9010211-01
Analyst : LY
Supervisor : CP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
75-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	51-136%	95%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 MW-2
Matrix : WATER
Date sampled : 10/12/90
Date analyzed: 10/19/90
Dilution : NONE

Anametrix I.D. : 9010211-02
Analyst :
Supervisor : CW
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
75-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	51-136%	85%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

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ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 MW-3
Matrix : WATER
Date sampled : 10/12/90
Date analyzed: 10/20/90
Dilution : NONE

Anametrix I.D. : 9010211-03
Analyst : LP
Supervisor : CP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
75-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	0.5	ND
110-75-8	* 2-Chloroethylvinylether	1	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	0.5	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	51-136%	87%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-1@11'-11.5'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/20/90
Dilution : NONE

Anametrix I.D. : 9010211-13
Analyst :
Supervisor :
Date released : 11/01/90
Instrument ID : HP6

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene		
	% Surrogate Recovery	33-134%	52%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-1@16'-16.5'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/20/90
Dilution : NONE

Anametrix I.D. : 9010211-14
Analyst : LB
Supervisor : CJ
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene		
	% Surrogate Recovery	33-134%	63%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-1@21'-21.5'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/20/90
Dilution : NONE

Anametrix I.D. : 9010211-15
Analyst : LJ
Supervisor : CS
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene		
	% Surrogate Recovery	33-134%	57%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-2@11'-11.5'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/20/90
Dilution : NONE

Anametrix I.D. : 9010211-17
Analyst : LJ
Supervisor : JP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene		
	% Surrogate Recovery	33-134%	39%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

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ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-2@16'-16.5'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/23/90
Dilution : NONE

Anametrix I.D. : 9010211-18
Analyst : LJ
Supervisor : CJ
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	33-134%	55%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

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ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 B-2@22.5'-23'
Matrix : SOIL
Date sampled : 10/12/90
Date analyzed: 10/23/90
Dilution : NONE

Anametrix I.D. : 9010211-19
Analyst : mk
Supervisor : CP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
75-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	33-134%	54%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

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ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
Matrix : WATER
Date sampled : N/A
Date analyzed: 10/19/90
Dilution : NONE

Anametrix I.D. : 10B1019H02
Analyst : LP
Supervisor : CA
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
75-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	1	ND
110-75-8	* 2-Chloroethylvinylether	0.5	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	51-136%	98%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
Matrix : SOIL
Date sampled : N/A
Date analyzed: 10/19/90
Dilution : NONE

Anametrix I.D. : 10B1019H02
Analyst : LY
Supervisor : CP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	ND
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	0.5	ND
110-75-8	* 2-Chloroethylvinylether	1	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	0.5	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	33-134%	98%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
Matrix : SOIL
Date sampled : N/A
Date analyzed: 10/23/90
Dilution : NONE

Anametrix I.D. : 10B1023H01
Analyst : MJ
Supervisor : CP
Date released : 11/01/90
Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
74-87-3	* Chloromethane	1	ND
74-83-9	* Bromomethane	0.5	ND
75-71-8	* Dichlorodifluoromethane	1	ND
75-01-4	* Vinyl Chloride	0.5	ND
75-00-3	* Chloroethane	0.5	ND
75-09-2	* Methylene Chloride	0.5	3.6
79-69-4	* Trichlorofluoromethane	0.5	ND
75-35-4	* 1,1-Dichloroethene	0.5	ND
75-34-3	* 1,1-Dichloroethane	0.5	ND
156-59-2	# Cis-1,2-Dichloroethene	0.5	ND
156-60-5	* Trans-1,2-Dichloroethene	0.5	ND
67-66-3	* Chloroform	0.5	ND
76-13-1	# Trichlorotrifluoroethane	0.5	ND
107-06-2	* 1,2-Dichloroethane	0.5	ND
71-55-6	* 1,1,1-Trichloroethane	0.5	ND
56-23-5	* Carbon Tetrachloride	0.5	ND
75-27-4	* Bromodichloromethane	0.5	ND
78-87-5	* 1,2-Dichloropropane	0.5	ND
10061-02-6	* Trans-1,3-Dichloropropene	0.5	ND
79-01-6	* Trichloroethene	0.5	ND
124-48-1	* Dibromochloromethane	0.5	ND
79-00-5	* 1,1,2-Trichloroethane	0.5	ND
10061-01-5	* cis-1,3-Dichloropropene	0.5	ND
110-75-8	* 2-Chloroethylvinylether	1	ND
75-25-2	* Bromoform	0.5	ND
127-18-4	* Tetrachloroethene	0.5	ND
79-34-5	* 1,1,2,2-Tetrachloroethane	0.5	ND
108-90-7	* Chlorobenzene	0.5	ND
541-73-1	* 1,3-Dichlorobenzene	1	ND
95-50-1	* 1,2-Dichlorobenzene	1	ND
106-46-7	* 1,4-Dichlorobenzene	1	ND
	% Surrogate Recovery	33-134%	99%

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

NOV 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9010211- 1	MW-1	H2O	10/12/90	TPHd
9010211- 2	MW-2	H2O	10/12/90	TPHd
9010211- 3	MW-3	H2O	10/12/90	TPHd
9010211-13	B-1@ 11'-11.5'	SOIL	10/12/90	TPHd
9010211-14	B-1@ 16'-16.5'	SOIL	10/12/90	TPHd
9010211-15	B-1@ 21'-21.5'	SOIL	10/12/90	TPHd
9010211-17	B-2@ 11'-11.5'	SOIL	10/12/90	TPHd
9010211-18	B-2@ 16'-16.5'	SOIL	10/12/90	TPHd
9010211-19	B-2@ 22.5'-23'	SOIL	10/12/90	TPHd
9010211- 1	MW-1	H2O	10/12/90	TPHG/BTEX
9010211- 2	MW-2	H2O	10/12/90	TPHG/BTEX
9010211- 3	MW-3	H2O	10/12/90	TPHG/BTEX
9010211- 4	TW-1	H2O	10/12/90	TPHG/BTEX
9010211- 5	TW-2	H2O	10/12/90	TPHG/BTEX
9010211- 6	TW-3	H2O	10/12/90	TPHG/BTEX
9010211- 7	TW-4	H2O	10/12/90	TPHG/BTEX
9010211- 8	TW-5	H2O	10/12/90	TPHG/BTEX
9010211- 9	TW-6	H2O	10/12/90	TPHG/BTEX
9010211-10	TW-7	H2O	10/12/90	TPHG/BTEX
9010211-11	TW-8	H2O	10/12/90	TPHG/BTEX
9010211-13	B-1@ 11'-11.5'	SOIL	10/12/90	TPHG/BTEX
9010211-14	B-1@ 16'-16.5'	SOIL	10/12/90	TPHG/BTEX
9010211-15	B-1@ 21'-21.5'	SOIL	10/12/90	TPHG/BTEX

NOV 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9010211-17	B-2@ 11'-11.5'	SOIL	10/12/90	TPHG/BTEX
9010211-18	B-2@ 16'-16.5'	SOIL	10/12/90	TPHG/BTEX
9010211-19	B-2@ 22.5'-23'	SOIL	10/12/90	TPHG/BTEX

NOV 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Palmer 11/1/90
Department Supervisor Date

Gary Voyt 11/01/90
Chemist Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90

Project Number : 30-095
Date Released : 11/01/90

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW1 -01	Sample I.D.# MW2 -02	Sample I.D.# MW3 -03	Sample I.D.# TW-1 -04	Sample I.D.# TW-2 -05
Benzene	0.5	ND	ND	ND	94	ND
Toluene	0.5	ND	ND	ND	490	ND
Ethylbenzene	0.5	ND	ND	ND	92	ND
Total Xylenes	0.5	ND	ND	ND	590	ND
TPH as Gasoline	50	ND	93	ND	6100	ND
% Surrogate Recovery		114%	117%	131%	94%	128%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		10/26/90	10/26/90	10/26/90	10/26/90	10/26/90
RLMF		1	1	1	50	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Sarah Voigt 11/01/90
Analyst Date

Cheryl Palmer 11/1/90
Supervisor Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90

Project Number : 30-095
Date Released : 11/01/90

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TW-3 -06	Sample I.D.# TW-4 -07	Sample I.D.# TW-5 -08	Sample I.D.# TW-6 -09	Sample I.D.# TW-7 -10
Benzene	0.5	0.8	ND	ND	ND	250
Toluene	0.5	ND	ND	ND	ND	580
Ethylbenzene	0.5	ND	ND	ND	ND	344
Total Xylenes	0.5	ND	ND	ND	ND	1700
TPH as Gasoline	50	ND	ND	ND	ND	11000 J
% Surrogate Recovery		131%	140%	122%	113%	120%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		10/26/90	10/26/90	10/26/90	10/26/90	10/26/90
RLMF		1	1	1	1	250

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
J - Estimated value below reporting limit.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 11/01/90 Date

Supervisor 11/1/90 Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90

Project Number : 30-095
Date Released : 11/01/90

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TW-8 -11	Sample I.D.# 04B1026A BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		120%	54%
Instrument I.D.		HP4	HP4
Date Analyzed		10/26/90	10/26/90
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Garth Voigt 11/2/90
Analyst Date

Cheryl Balsmeier 11/2/90
Supervisor Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90

Project Number : 30-095
Date Released : 11/01/90

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-1@11'-11.5' -13	Sample I.D.# B-1@16'-16.5' -14	Sample I.D.# B-1@21'-21.5' -15	Sample I.D.# B-2@11'-11.5' -17	Sample I.D.# B-2@16'-16.5' -18
Benzene	0.005	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND	ND
Total Xylenes	0.005	ND	ND	ND	ND	ND
TPH as Gasoline	0.5	ND	ND	ND	ND	ND
% Surrogate Recovery		66%	91%	55%	64%	79%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		10/26/90	10/26/90	10/26/90	10/26/90	10/26/90
RLMF		1	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Gary Voigt 11/01/90
Analyst Date

Cheryl Palmer 11/1/90
Supervisor Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90

Project Number : 30-095
Date Released : 11/01/90

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-2@ 22.5'-23' -19	Sample I.D.# 12B1026B BLANK
Benzene	0.005	ND	ND
Toluene	0.005	ND	ND
Ethylbenzene	0.005	ND	ND
Total Xylenes	0.005	ND	ND
TPH as Gasoline	0.5	ND	ND
% Surrogate Recovery		59%	108%
Instrument I.D.		HP12	HP12
Date Analyzed		10/26/90	10/26/90
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Gareth Voigt 11/2/90
Analyst Date

Supervisor Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90
Date Extracted: 10/19/90

Project Number : 30-095
Date released : 11/01/90
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9010211-01	MW-1	10/23/90	50	ND
9010211-02	MW-2	10/23/90	50	ND
9010211-03	MW-3	10/23/90	50	ND
DWBL102990	METHOD BLANK	10/22/90	50	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst Date

Supervisor Date

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9010211
Matrix : WATER
Date Sampled : 10/12/90
Date Extracted: 10/19/90

Project Number : 30-095
Date released : 11/01/90
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9010211-13	B-1@11'-11.5'	10/27/90	10	ND
9010211-14	B-1@16'-16.5'	10/27/90	10	ND
9010211-15	B-1@21'-21.5'	10/27/90	10	ND
9010211-17	B-2@11'-11.5'	10/27/90	10	ND
9010211-18	B-2@16'-16.5'	10/27/90	10	ND
9010211-19	B-2@22.5'-23'	10/27/90	10	ND
DSBL102590	METHOD BLANK	10/27/90	10	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Gareth Voigt 11/01/90
Analyst Date

Cheryl Balmer 11/1/90
Supervisor Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9010211- 1	MW-1	H2O	10/12/90	5520BF
9010211- 2	MW-2	H2O	10/12/90	5520BF
9010211- 3	MW-3	H2O	10/12/90	5520BF
9010211- 4	TW-1	H2O	10/12/90	5520BF
9010211- 5	TW-2	H2O	10/12/90	5520BF
9010211-13	B-1@ 11'-11.5'	SOIL	10/12/90	5520EF
9010211-14	B-1@ 16'-16.5'	SOIL	10/12/90	5520EF
9010211-15	B-1@ 21'-21.5'	SOIL	10/12/90	5520EF
9010211-17	B-2@ 11'-11.5'	SOIL	10/12/90	5520EF
9010211-18	B-2@ 16'-16.5'	SOIL	10/12/90	5520EF
9010211-19	B-2@ 22.5'-23'	SOIL	10/12/90	5520EF

NOV 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE. SUITE 140
CONCORD, CA 94520

Workorder # : 9010211
Date Received : 10/16/90
Project ID : 30-095
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor — Date: Oct, 31st 1990.

Chemist — Date: 11/02/90

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : 30-095
Matrix : WATER
Date sampled : 10/12/90
Date ext. TOG: 10/26/90
Date anl. TOG: 10/26/90

Anametrix I.D. : 9010211
Analyst :
Supervisor :
Date released : 11/02/90

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9010211-01	MW-1	5	ND
9010211-02	MW-2	5	ND
9010211-03	MW-3	5	ND
9010211-04	TW-1	5	ND
9010211-05	TW-2	5	ND
GWBL102690	METHOD BLANK	5	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

NOV 5 1990

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : 30-095
Matrix : SOIL
Date sampled : 10/12/90
Date ext. TOG: 10/26/90
Date anl. TOG: 10/26/90

Anametrix I.D. : 9010211
Analyst :
Supervisor :
Date released : 11/01/90

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9010211-13	B-1@11'-11.5'	30	ND
9010211-14	B-1@16'-16.5'	30	ND
9010211-15	B-1@21'-21.5'	30	ND
9010211-17	B-2@11'-11.5'	30	ND
9010211-18	B-2@16'-16.5'	30	ND
9010211-19	B-2@22.5'-23'	30	ND
GSBL102690	METHOD BLANK	30	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520EF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

NOV 6 1990

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 1 of 3

DATE: [redacted]6/

RESULTS DUE BY: 10/30/90

PROJECT NUMBER: 30-095

PROJECT NAME AND ADDRESS: Mobil Oil, 7197 Village Pkwy., Dublin, CA

PROJECT MANAGER: B. Nagle

SAMPLER'S SIGNATURE: [signature] William G. Shipp

LABORATORY: Anametrix

REMARKS OR SPECIAL INSTRUCTIONS: 9010211

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

	SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP.: 3510: SOLV. EXTR.	SAMPLE PREP.: 3810: HEAD SPACE	SAMPLE PREP.: 5030: PURGE & TRAP	TPH as Diesel (10/18)	[redacted] ANALYSIS: 418.1: TPHC (IR)	8010: HALOCARBONS	8020: BTXE	DHS METHOD: TPHC (GC)	7420: TOTAL Pb	Total Oil and Grease (10/14)	[redacted] ANALYSIS: 418.1: TPHC (IR)	601: HALOCARBONS (1)	[redacted] BTXE/TPH as G (2)	DHS METHOD: TPHC (GC)	7421: TOTAL Pb	Hold
(1)	MW-1	10-12-90	MW-1	Water	X	Cold 5x40ml bubble	9				X						X		X	X			
(2)	MW-2		MW-2		X	Cold 4x40ml bubble	9				X						X		X	X			
(3)	MW-3		MW-3		X	Cold 5x40ml bubble	9				X						X		X	X			
(4)	TW-1		TW-1		X	Cold 4x40ml bubble	7										X			X			
(5)	TW-2		TW-2		X	↓	7										X			X			
(6)	TW-3		TW-3		X	↓	5													X			
(7)	TW-4		TW-4		X	↓	5													X			
(8)	TW-5		TW-5		X	Cold 2x40ml bubble	3													X			
(9)	TW-6	↓	TW-6	↓	X	↓	3													X			
						TOTAL NO. OF CONTAINERS:	69																

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	
[signature]	William G. Shipp	10/15/90 / 1900	METHOD OF SHIPMENT:
William G. Shipp	[signature]	10/16/90 1050	SHIPPED BY:
[signature] 10-16-90 1220	[signature]	10/16/90 1220	COURIER:

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 2 of 3

DATE: 10/16/90

RESULTS DUE BY: 10/30/90

PROJECT NUMBER: 30-095

PROJECT NAME AND ADDRESS: Mobil, 7197 Village Pkwy., Dublin, CA

PROJECT MANAGER: B. Nagle

SAMPLER'S SIGNATURE: William D. Skipp / Cynthia Ladd

LABORATORY: Anametrix

REMARKS OR SPECIAL INSTRUCTIONS: 9010211

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	[redacted] ANALYSIS TPHas Diesel (1)	[redacted] ANALYSIS 418.1: TPHC (IR)	[redacted] ANALYSIS 8010: HALOCARBONS	[redacted] ANALYSIS 8020: BTXE	[redacted] ANALYSIS DHS METHOD: TPHC (GC)	[redacted] ANALYSIS 7420: TOTAL Pb	[redacted] ANALYSIS Total Oil and Grease (1)	[redacted] ANALYSIS 418.1: TPHC (IR)	[redacted] ANALYSIS 601: HALOCARBONS (1)	[redacted] ANALYSIS BTXE / TPH-G (2)	[redacted] ANALYSIS DHS METHOD: TPHC (GC)	[redacted] ANALYSIS 7421: TOTAL Pb	[redacted] ANALYSIS Hold 10/29
(10) TW-7	10-12-90	TW-7	Water	X	Cold 3x40ml bubble	3													X			
(11) TW-8	↓	TW-8	↓	X	Cold 4x40ml bubble	5													X			
(12) B-1		B-1 @ 6'-6.5'	Soil	X		1																X
(13) B-1		B-1 @ 11.0-11.5'		X		1				X						X		X	X			
(14) B-1		B-1 @ 16-16.5'		X		1				X						X		X	X			
(15) B-1		B-1 @ 20'-21.5'		X		1				X						X		X	X			
(16) B-2		B-2 @ 6'-6.5'		X		1																X
(17) B-2		B-2 @ 11.0-11.5'		X		1				X						X		X	X			
(18) B-2	↓	B-2 @ 16-16.5'	↓	X		1				X						+		+	+			
					TOTAL NO. OF CONTAINERS:	19																

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
Cynthia Ladd	William D. Skipp	10/15/90/1900	
RELINQUISHED BY: William D. Skipp	RECEIVED BY: Bonnie L. Carrington	DATE/TIME: 10/16/90 10:50	SHIPPED BY:
RELINQUISHED BY: 10-16-90 1220	RECEIVED BY:	DATE/TIME: 10/16/90 1220	COURIER:

[redacted] ONMENTAL SCIENCE [redacted]
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

[redacted] CHAIN of CUSTODY RECORD [redacted]

PAGE 3 of 3

DATE: [redacted] 10/16/90

RESULTS DUE BY: 10/30/90

PROJECT NUMBER: 30-095

PROJECT NAME AND ADDRESS: Mobil Oil, 7197 Village Pkwy., Dublin, CA

PROJECT MANAGER: B Nagle

SAMPLER'S SIGNATURE: William D. Shipp

LABORATORY: Anametrix

REMARKS OR SPECIAL INSTRUCTIONS:

9010211

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	SAMPLE PREP. TPH as Diesel (1)	[redacted] ANALYSIS 418.1: TPHC (IR)	[redacted] ANALYSIS 8010: HALOCARBONS	[redacted] ANALYSIS 8020: BTXE / TPH as G (1)	[redacted] ANALYSIS DHS METHOD: TPHC (GC)	[redacted] ANALYSIS 7420: TOTAL Pb	[redacted] ANALYSIS Total Oil and Grease (1)	[redacted] ANALYSIS 418.1: TPHC (IR)	[redacted] ANALYSIS 601: HALOCARBONS (1)	[redacted] ANALYSIS 602: BTXE	[redacted] ANALYSIS DHS METHOD: TPHC (GC)	[redacted] ANALYSIS 7421: TOTAL Pb	[redacted] ANALYSIS HOLD
(17) B-2	10-12-90	B-2 @ 23'-25'	Soil	X		1				X			X			X		X				
					TOTAL NO. OF CONTAINERS:		1																

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
William D Shipp	Tammy L Carrejo	10/16/90 10:30	
RELINQUISHED BY: 10-16-90 1220	RECEIVED BY:	DATE/TIME: 10/16/90 1220	SHIPPED BY:
Tammy L Carrejo			
RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	COURIER:

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 81849
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/07/90
DATE REPORTED: 11/14/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	B-3@10.5-11	ND<3	ND<3	ND<3	ND<3
2	B-3 @16-16.5	ND<3	ND<3	ND<3	13
3	B-3 @21-21.5	ND<3	ND<3	ND<3	ND<3
6	AW-4@21-21.5	ND<3	ND<3	ND<3	ND<3
7	AW-4@6 -6.5	ND<3	ND<3	ND<3	ND<3
8	AW-5@6 -6.5	250	18	33	88
11	AW-5@21-21.5	ND<3	ND<3	ND<3	ND<3
12	AW-6@6-6.5	ND<3	12	4	15

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 95 %: Duplicate RPD = <1

Richard Srna, Ph.D.

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81849
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/07/90
DATE REPORTED: 11/14/90

ANALYSIS FOR TOTAL OIL AND GREASE
by Standard Method 5520(F)

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	B-3 @10.5-11	ND<20
2	B-3 @16-16.5	ND<20
3	B-3 @21-21.5	ND<20

Method Detection Limit for Oil and Grease in Soil: 20mg/Kg

QAQC Summary: Duplicate RPD : 3

Richard Srna, Ph.D.

Robert Watson for
Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81849
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/07/90
DATE REPORTED: 11/14/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	B-3@10.5-11	ND<1
2	B-3 @16-16.5	ND<1
3	B-3 @21-21.5	ND<1
6	AW-4@21-21.5	ND<1
7	AW-4@6 -6.5	ND<1
8	AW-5@6 -6.5	6
11	AW-5@21-21.5	ND<1
12	AW-6@6-6.5	ND<1

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 8
MS/MSD Average Recovery = 105%: Duplicate RPD = 4

Richard Srna, Ph.D.

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81849
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/07/90
DATE REPORTED: 11/14/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Diesel Range
1	B-3@10.5-11	ND<10
2	B-3 @16-16.5	ND<10
3	B-3 @21-21.5	ND<10

Method Detection Limit for Gasoline and Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = NA
RPD Diesel = 2
MS/MSD Average Recovery = 112%: Duplicate RPD = 7

Richard Srna, Ph.D.

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52737-1
CLIENT: Alton Geoscience
JOB NO.: 30-0095

DATE SAMPLED: 11/06/90
DATE RECEIVED: 11/07/90
DATE ANALYZED: 11/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: B-3 @10.5-11

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 89 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52737-2
CLIENT: Alton Geoscience
JOB NO.: 30-0095

DATE SAMPLED: 11/06/90
DATE RECEIVED: 11/07/90
DATE ANALYZED: 11/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: B-3 @16-16.5

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 89 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Onuj A Nwogu (for)
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52737-3
CLIENT: Alton Geoscience
JOB NO.: 30-0095

DATE SAMPLED: 11/06/90
DATE RECEIVED: 11/07/90
DATE ANALYZED: 11/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: B-3 @21-21.5

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 89 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

1[redacted]URN[redacted]T., #1[redacted]
CONCORD, CA 94520 (415) 682-1582

CHAIN OF CUSTODY RECORD

[redacted] RESULTS DUE BY [redacted]

PROJECT NUMBER: 30-0095

PROJECT NAME AND ADDRESS: FORMER MOBIL STATION 10-KNK, 7197 VILLAGE PARKWAY, DUBLIN

LABORATORY: SUPERIOR

PROJECT MANAGER: BRADY NAGLE

SAMPLER'S SIGNATURE: [signature] / [signature]

REMARKS OR SPECIAL INSTRUCTIONS:

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP.: 3510: SOLV. EXTR.	SAMPLE PREP.: 3810: HEAD SPACE	SAMPLE PREP.: 5030: PURGE & TRAP	SAMPLE PREP.:	SOIL ANALYSIS: TPH-G/BTEX	SOIL ANALYSIS: TPH-Diesel	SOIL ANALYSIS: TOG using 5520EF	SOIL ANALYSIS: EPA 8010	SOIL ANALYSIS:	HOLD	WATER ANALYSIS: 418.1: TPHC (IR)	WATER ANALYSIS: 601: HALOCARBONS	WATER ANALYSIS: 602: BTXE	WATER ANALYSIS: DHS METHOD: TPHC (GC)	WATER ANALYSIS: 7421: TOTAL Pb	
B-3	11/6/90	B-3 @10½-11	SOIL	X		1					X	X	X	X								
B-3	↓	B-3@16-16½	↓	X		1					X	X	X	X								
B-3		B-3@21-21½		X		1					X	X	X	X								
AW-4		AW-4@11-11½				1										X						
AW-4		AW-4@16-16½				1										X						
AW-4		AW-4@21-21½				1					X											
AW-4		AW-4@6-6½				1					X											
AW-5		AW-5@6-6½				1					X											
AW-5		AW-5@11-11½				1										X						

TOTAL NO. OF CONTAINERS:

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
William D. [illegible]	[signature]	11/7 @ 1119	[illegible]
RELINQUISHED BY: [signature]	**RECEIVED BY:** NA	**DATE/TIME:** 11/7 @ 1132	**SHIPPED BY:** "
RELINQUISHED BY: N/A	**RECEIVED BY:** Robin Paulsen 11/7 11:58	**DATE/TIME:**	**COURIER:** N/A

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 2 of 2

DATE: 11/7/90

RESULTS DUE BY: 11/14/90

PROJECT NUMBER: 30-0095

PROJECT NAME AND ADDRESS: FORMER MOBIL STATION 10-KNK
2197 VILLAGE PARKWAY, DUBLIN

PROJECT MANAGER: Brady Nagle

SAMPLER'S SIGNATURE: Brady Nagle/William B. Shipp

LABORATORY: SUPERIOR

REMARKS OR SPECIAL INSTRUCTIONS:

Please initial:
Samples stored in ice.
Appropriate containers.
Samples preserved.
VOA's without headspace.
Other:

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	SOIL ANALYSIS: TPH-G/BTEX	SOIL ANALYSIS: 8010: HALOCARBONS	SOIL ANALYSIS: 8020: BTXE	SOIL ANALYSIS: DHS METHOD: TPHC (GC)	SOIL ANALYSIS: 7420: TOTAL Pb	SOIL ANALYSIS: HOLD	WATER ANALYSIS: 418.1: TPHC (IR)	WATER ANALYSIS: 601: HALOCARBONS	WATER ANALYSIS: 602: BTXE	WATER ANALYSIS: DHS METHOD: TPHC (GC)	WATER ANALYSIS: 7421: TOTAL Pb
AW-5	11/6/90	AW-5@16-16½	Soil	X		1									X					
AW-5	↓	AW-5@21-21½	↓	X		1				X										
AW-6	↓	AW-6@6-6½	↓	X		1				X										

TOTAL NO. OF CONTAINERS: 12

RELINQUISHED BY: William B. Shipp	RECEIVED BY:	DATE/TIME: 11/7 1119	METHOD OF SHIPMENT: Express 24
RELINQUISHED BY:	RECEIVED BY:	DATE/TIME: 11/7 1402	SHIPPED BY: "
RELINQUISHED BY: N/A	RECEIVED BY: Robert Paulson 11/7 1120	DATE/TIME:	COURIER: N/A

NOV 2 8 1990

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 81908
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/15/90
DATE REPORTED: 11/26/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	(AW-5@11-11.5)	ND<3	ND<3	ND<3	ND<3
2	(AW-5@16-16.5)	ND<3	ND<3	ND<3	ND<3

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 90 %: Duplicate RPD = <3

Richard Srna, Ph.D.

Robert Watson Ea

Laboratory Manager

NOV 2 8 1990

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81908
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-0095

DATE RECEIVED: 11/15/90
DATE REPORTED: 11/26/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	(AW-5@11-11.5)	ND<1
2	(AW-5@16-16.5)	ND<1

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 2
MS/MSD Average Recovery = 94%: Duplicate RPD = 0

Richard Srna, Ph.D.

Laboratory Manager

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

81908

CHAIN OF CUSTODY RECORD

NOV 28 1990

PAGE 1 of 2

DATE: 11/7/90

RESULTS DUE BY: 11/14/90

PROJECT NUMBER: 30-0095

PROJECT NAME AND ADDRESS: FORMER MOBIL STATION 10-KNK, 7197 VILLAGE PARKWAY, DUBLIN

PROJECT MANAGER: BRADY NAGLE

SAMPLER'S SIGNATURE: Brady Nagle / Walter D. Shipp

LABORATORY:

REMARKS OR SPECIAL INSTRUCTIONS:

As per our 11/15/90 phone conversation, pls. run AW-5 @ 11-11½ and AW-5 @ 16-16½ for TPH-G w/ BTEX.

BN/A

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	SOIL ANALYSIS: TPH-G / BTEX	SOIL ANALYSIS: TPH-Diesel	SOIL ANALYSIS: TOG USING 5520 E&F	SOIL ANALYSIS: EPA 8010	SOIL ANALYSIS: HOLD	WATER ANALYSIS: 418.1: TPHC (IR)	WATER ANALYSIS: 601: HALOCARBONS	WATER ANALYSIS: 602: BTXE	WATER ANALYSIS: DHS METHOD: TPHC (GC)	WATER ANALYSIS: 7421: TOTAL Pb
B-3	11/6/90	B-3 @ 10½-11	SOIL	X		1				X	X	X	X						
B-3		B-3 @ 16-16½		X		1				X	X	X	X						
B-3		B-3 @ 21-21½		X		1				X	X	X	X						
AW-4		AW-4 @ 11-11½				1								X					
AW-4		AW-4 @ 16-16½				1								X					
AW-4		AW-4 @ 21-21½				1				X									
AW-4		AW-4 @ 6-6½				1				X									
AW-5		AW-5 @ 6-6½				1				X									
AW-5		AW-5 @ 11-11½				1				X				X					
					TOTAL NO. OF CONTAINERS:														

RELINQUISHED BY: Walter D. Shipp	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
RELINQUISHED BY:	RECEIVED BY: N/A	DATE/TIME:	SHIPPED BY: N/A
RELINQUISHED BY: N/A	RECEIVED BY: Robert Paulson 11/15	DATE/TIME:	COURIER:

P.2

NOV 15 '90 14:09 ALTON GEOSCIENCE 4156828921

NOV 28 1990

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 2 of 2

DATE: 11/7/90
RESULTS DUE BY: 11/14/90

PROJECT NUMBER: 30-0095
PROJECT NAME AND ADDRESS: FORMER MOBIL STATION 10-KNK 7697 VILLAGE PARKWAY, DUBLIN
PROJECT MANAGER: Brady Nagle
SAMPLER'S SIGNATURE: [signature] William D. Shipp
LABORATORY:

REMARKS OR SPECIAL INSTRUCTIONS:

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	SOIL ANALYSIS TPH'G/BTEX	SOIL ANALYSIS 8010: HALOCARBONS	SOIL ANALYSIS 8020: BTXE	SOIL ANALYSIS DHS METHOD: TPHC (GC)	SOIL ANALYSIS 7420: TOTAL Pb	SOIL ANALYSIS NOLD	WATER ANALYSIS 418.1: TPHC (IR)	WATER ANALYSIS 601: HALOCARBONS	WATER ANALYSIS 602: BTXE	WATER ANALYSIS DHS METHOD: TPHC (GC)	WATER ANALYSIS 7421: TOTAL Pb
AW-5	11/6/90	AW-5@16-16½	Soil	X		1				X					X					
AW-5	"	AW-5@21-21½	"	X		1				X										
AW-6	"	AW-6@6-6½	"	X		1				X										

TOTAL NO. OF CONTAINERS: 12

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
William D. Shipp			
RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	SHIPPED BY:
			N/A

NOV 15 '90 14:10 ALTON GEOSCIENCE 4156838831

DEC - 5 1990

ANAMETRIX INC
Environmental & Analytical Chemistry
961 Concourse Drive Suite E. San Jose. CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE, SUITE 140
CONCORD, CA 94520

Workorder # : 9011164
Date Received : 11/16/90
Project ID : 30-095
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9011164- 1	AW5
9011164- 2	AW6
9011164- 3	AW4
9011164- 4	MW3
9011164- 5	MW2
9011164- 6	MW1

This report is paginated for your convenience and ease of review. It contains 5 pages excluding the cover letter. The report is organized into sections. Each section contains all analytical results and quality assurance data related to a specific group or section within Anametrix. The Report Summary that precedes each section will help you determine which group at Anametrix generated the data. The Report Summary will contain the signatures of the department supervisor and a chemist, both of whom reviewed the analytical data. Please refer all questions to the department supervisor that signed the form.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Laboratory Director

12-04-90
Date

DEC - 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE, SUITE 140
CONCORD, CA 94520

Workorder # : 9011164
Date Received : 11/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9011164- 1	AW5	H2O	11/15/90	TPHg/BTEX
9011164- 2	AW6	H2O	11/15/90	TPHg/BTEX
9011164- 3	AW4	H2O	11/15/90	TPHg/BTEX
9011164- 4	MW3	H2O	11/15/90	TPHg/BTEX
9011164- 5	MW2	H2O	11/15/90	TPHg/BTEX
9011164- 6	MW1	H2O	11/15/90	TPHg/BTEX

DEC - 5 1990

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

BRADY NAGLE
ALTON GEOSCIENCE
1000 BURNETT AVE, SUITE 140
CONCORD, CA 94520

Workorder # : 9011164
Date Received : 11/16/90
Project ID : 30-095
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 12/3/90
Department Supervisor Date

Chemist 12/3/90 Date

DEC - 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9011164
Matrix : WATER
Date Sampled : 11/15/90

Project Number : 30-095
Date Released : 11/30/90

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# AW5 -01	Sample I.D.# AW6 -02	Sample I.D.# AW4 -03	Sample I.D.# MW3 -04	Sample I.D.# MW2 -05
Benzene	0.5	1.3	25	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	1.0	0.8	ND	ND	ND
TPH as Gasoline	50	ND	230	ND	76	ND
% Surrogate Recovery		93%	102%	61%	63%	56%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		11/21/90	11/21/90	11/21/90	11/21/90	11/21/90
RLMF		1	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12.04.90 Date

Supervisor 12/4/90 Date

DEC - 5 1990

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9011164
Matrix : WATER
Date Sampled : 11/15/90

Project Number : 30-095
Date Released : 11/30/90

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW1 -06	Sample I.D.# 04B1121A BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		55%	97%
Instrument I.D.		HP4	HP4
Date Analyzed		11/21/90	11/21/90
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12/3/90 Date

Supervisor 12/3/90 Date

DEC - 5 1990

BTEX MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-095 MW1
Matrix : WATER
Date Sampled : 11/15/90
Date Analyzed : 11/21/90

Anametrix I.D.: 9011164-06
Analyst : GV-
Supervisor : CB
Date Released : 12/03/90

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	REC MS	MSD (ug/L)	REC MSD	RPD	%REC LIMITS
Benzene	40	35	88%	33	83%	-6%	46-149
Toluene	40	34	85%	34	85%	0%	43-146
Ethylbenzene	40	33	83%	33	83%	0%	51-138
M+P-Xylenes	27	23	86%	24	90%	4%	39-161
O-Xylene	13	12	90%	12	90%	0%	37-156

ALTON GEOSCIENCE
1000 BURNETT ST., #140
CONCORD, CA 94520 (415) 682-[illegible]

DEC - 5 1990

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 11/16/90

RESULTS DUE BY:

PROJECT NUMBER: 30-095

PROJECT NAME AND ADDRESS: Mobil, Dublin

PROJECT MANAGER: Brady NaGle

SAMPLER'S SIGNATURE: [signature]

LABORATORY: Anametrix

REMARKS OR SPECIAL INSTRUCTIONS:
Please Run TPH-G & BTXE in Series!! S.T.A.T.

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	NUMBER OF CONTAINERS	SAMPLE PREP. 3510: SOLV. EXTR.	SAMPLE PREP. 3810: HEAD SPACE	SAMPLE PREP. 5030: PURGE & TRAP	SAMPLE PREP. HCL Preserved	SOIL ANALYSIS 418.1: TPHC (IR)	SOIL ANALYSIS 8010: HALOCARBONS	SOIL ANALYSIS 8020: BTXE	SOIL ANALYSIS DHS METHOD: TPHC (GC)	SOIL ANALYSIS 7420: TOTAL Pb	SOIL ANALYSIS	WATER ANALYSIS 418.1: TPHC (IR)	WATER ANALYSIS 601: HALOCARBONS	WATER ANALYSIS 602: BTXE TPH-G	WATER ANALYSIS DHS METHOD: TPHC (GC)	WATER ANALYSIS 7421: TOTAL Pb	WATER ANALYSIS
AW5	11/15/90/1630		3X40mL	X		3				X									X			
AW6	11/15/90/1623		↓	↓		↓				↓									↓			
AW4	11/15/90/1612		↓	↓		↓				↓									↓			
MW3	11/15/90/1540		↓	↓		↓				↓									↓			
MW2	11/15/90/1552		↓	↓		↓				↓									↓			
MW1	11/15/90/1557		↓	↓		↓				↓									↓			

TOTAL NO. OF CONTAINERS: 18

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME:	METHOD OF SHIPMENT:
[signature]	[signature]	1315 / 11/16/90	By Hand
RELINQUISHED BY: [signature]	RECEIVED BY: [signature]	DATE/TIME: 11/16/90 1315	SHIPPED BY: Courier
RELINQUISHED BY: [signature] 11/16/90 1550	RECEIVED BY: [signature]	DATE/TIME: 11-16-90 1550	COURIER: