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February 26, 2001

MAR 06 2001

Ms. Eva Chu
Alameda County Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Subject: Former Exxon RAS #7-0210, 7840 Amador Valley Boulevard, Dublin, California

Dear Ms. Chu:

Attached for your review and comment is a copy of the *Report of Well Installation* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the installation of three groundwater monitoring wells.

Please note that from this date forward, I will be the ExxonMobil contact for this site. If you have any questions or comments, please contact me at (925) 246-8747.

Sincerely,

Gene N. Ortega
Senior Engineer

Attachment: ETIC Report of Well Installation dated February 2001

c: w/attachment:
Mr. Winson B. Low - Valero Energy Corporation

c: w/o attachment:
Ms. Christa Marting - ETIC Engineering, Inc.

ETIC
Engineering, Inc.

Report of Well Installation

Former Exxon Retail Site 7-0210
7840 Amador Valley Boulevard
Dublin, California

Prepared for

ExxonMobil Refining and Supply Company
P.O. Box 4032
2300 Clayton Road, Suite 1250
Concord, California 94524-4032

Prepared by

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, California, 94523
(925) 602-4710

Ted Moise
Project Manager

February 26, 2001
Date

Heidi Dieffenbach-Carle
Heidi Dieffenbach-Carle, R.G. #6793
Senior Geologist

February 20, 2001
Date

REGISTERED GEOLOGIST
HEIDI L. DIEFFENBACH-CARLE
No. 6793
exp 03/31/02
STATE OF CALIFORNIA

February 2001

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Former Exxon RS 7-0210

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3	Construction details for groundwater monitoring wells.

SITE CONTACTS

Station Number:	Former Exxon Retail Site 7-0210
Station Address:	7840 Amador Valley Boulevard Dublin, California
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Consultant to ExxonMobil:	ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, California 94523 (925) 602-4710
ETIC Project Manager:	Ted Moise
Regulatory Oversight:	Eva Chu Alameda County Health Agency Division of Environmental Protection Department of Environmental Health 1131 Harbor Bay Parkway, 2nd Floor Alameda, California 94502 (510) 567-6700

1. INTRODUCTION

ETIC Engineering, Inc. (ETIC) was retained by ExxonMobil Refining and Supply Company (ExxonMobil) to install three groundwater monitoring wells at former Exxon Retail Site (RS) 7-0210, as requested by the Alameda County Health Agency (ACHA) in a letter to ExxonMobil dated 4 October 2000 (Appendix A).

This report documents the installation of the wells (MW5 through MW7) as part of an investigation of petroleum hydrocarbon and methyl t-butyl ether (MTBE) impact to the soil and groundwater at the site, located at 7840 Amador Valley Boulevard, Dublin, California (Figures 1 and 2). The wells were installed in accordance with a work plan approved by the ACHA in a letter to ExxonMobil dated 1 November 2000 (Appendix A).

Scope of Work

The investigation consisted of the following activities:

- On 14 November and 15 November 2000, three soil borings, MW5-MW7, were drilled to approximately 25 feet below ground surface (bgs). The borings were completed as 2-inch-diameter groundwater monitoring wells.

- Selected soil samples were collected from each boring and analyzed for Total Petroleum Hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE.

- Wells MW5-MW7 were developed on 14 and 15 November 2000 prior to establishing the bentonite seal during drilling activities.

- Groundwater samples were collected from MW5-MW7 on 17 November 2000 and analyzed for TPH-g, BTEX, and MTBE.

- A licensed land surveyor surveyed the three wells and significant site features on 15 December 2000.

2. SITE BACKGROUND

2.1 SITE LOCATION AND LAND USE

Former Exxon RS 7-0210 is located at 7840 Amador Valley Boulevard, Dublin, California, on the eastern corner of Amador Valley Boulevard and Regional Street (Figure 1). Land use in the area is a mixture of residential and commercial. The immediate vicinity of the site is commercial, consisting of shopping malls and parking lots. A Unocal service station with underground storage tanks is located on the southwestern corner of the intersection. The site is located on essentially flat terrain at an elevation of approximately 340 feet above the mean sea level. Topography in the area slopes gently to the southeast.

2.2 SITE HISTORY

Former Exxon RS 7-0210 was owned and operated by Texaco until 1988, when it was purchased by Exxon. In February 1990, Exxon replaced product dispensers and installed a vapor recovery system. A soil boring (SB-1) was advanced by Alton Geoscience in October 1991. The location of the soil boring is presented on Figure 2. TPH-g and benzene were detected in SB-1 at 15.5-16 feet bgs at 69 mg/kg and 0.045 mg/kg, respectively (EA 1992).

In October 1991, Exxon replaced three former 8,000-gallon single-walled steel underground storage tanks (USTs) with the existing three 12,000-gallon double-walled fiberglass-reinforced plastic (FRP) tanks. The locations of the former and existing tanks are indicated in Figure 2.

Confirmation soil samples TG1-TG8 were collected from native soil beneath the single-walled steel USTs and from the sidewalls of the tank pit after the tanks were removed. A map presenting the locations of these samples is included in Appendix B. The analytical results are presented in Table 1. Maximum concentrations of TPH-g and benzene were detected in the sample from the southeastern corner of the former tank field in TG4-14' at 1,000 mg/kg and 1.2 mg/kg, respectively. Additional soil was excavated to 16 feet bgs where groundwater was encountered and soil samples TG9-TG11 were collected. After overexcavation activities were complete, the maximum TPH-g and benzene concentrations were detected in the southeastern corner of the former tank field in TG9-16' at 300 mg/kg and 0.68 mg/kg, respectively. Soil samples NP1-NP4 were collected from the new tank field excavation prior to tank installation. TPH-g and BTEX were not detected above the reported detection limits in any of these samples (EA 1991). Maps showing the locations of these samples are included in Appendix B.

The product piping was also upgraded to double-walled FRP during tank installation activities. Soil samples PL1-PL6 were collected at 2.5 feet bgs from the product piping trench. TPH-g and BTEX were not detected above reported detection limits in these samples. The locations of the samples are also presented on a map included in Appendix B, and the analytical results are included in Table 1 (EA 1991).

Groundwater monitoring wells MW1-MW4 were installed in May 1992 (EA 1992). Soil samples collected from MW1–MW4 did not contain TPH-g or BTEX above reported detection limits. These monitoring wells were sampled 12 times from May 1992 to June 1995. During the June 1995 groundwater sampling event, TPH-g and BTEX were not detected above reported detection limits, while MTBE was detected in wells MW1 and MW2 at 230 and 59 µg/L, respectively (EA 1995).

These wells were destroyed in April 1996 (EA 1996), as authorized by the ACHA and the Regional Water Quality Control Board in a March 1996 site closure letter to Exxon (ACHA 1996). The locations of these former wells are presented in Figure 2. The analytical results for groundwater samples collected from these wells are presented in Table 2.

A Baseline Environmental Assessment report was prepared by EA Engineering, Science, and Technology in January 1999 documenting the results for soil and groundwater samples collected from soil borings B1-B4, which were analyzed for TPH-g, Total Petroleum Hydrocarbons as diesel (TPH-d), BTEX, and MTBE. TPH-g and BTEX were not detected in any of the soil samples collected during the investigation. MTBE was detected only in the sample collected from B1 at a depth of 15-16 feet bgs, at a concentration of 0.78 mg/kg. TPH-d was detected at concentrations ranging from 1.1 to 2.1 mg/kg in the four samples collected from B1-B4 at 5 feet bgs. Table 1 summarizes the analytical results for these soil samples.

BTEX and TPH-g were not detected above laboratory detection limits in any of the grab groundwater samples collected during the investigation with the exception of toluene (1.7 µg/L) and TPH-g (100 µg/L), detected in the sample collected from B1. MTBE was detected by EPA Method 8260 at a concentration of 4,000 µg/L in the groundwater sample collected from B1 and at a concentration of 19 µg/L in the sample collected from B2 (EA 1999).

A letter report was prepared by ETIC presenting analytical results of split samples collected on behalf of ExxonMobil Refining and Supply Company during the Valero Energy Corporation subsurface investigation at the site on 20 April 2000. Soil borings 70210-1 and 70210-2 were advanced to collect groundwater samples. The locations of these soil borings are presented in Figure 2. These groundwater samples did not contain detectable concentrations of TPH-g, BTEX, and MTBE, with the exception of 140 µg/L TPH-g, 7.2 µg/L total xylenes, and 190 µg/L MTBE in sample 70210-2 (ETIC 2000).

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located in the north central part of Alameda County, near the Amador and Livermore valleys within the central Coast Ranges California Geomorphic Province. The Amador Valley slopes generally to the south toward Alameda Creek. The Livermore Valley slopes generally westward and intersects the Amador Valley. Materials underlying the site area are Quaternary-age alluvial sediments that were deposited by erosion from upland surfaces bordering the Livermore Valley. These sediments are weakly indurated and consist of interbedded mudstone, sandstone, and pebble conglomerate (Dibblee and Darrow 1981). The pebble conglomerate is a significant regional formation known as the Livermore Gravels that were deposited by a long period of deposition by various drainage courses. In the area of the subject site these sediments are estimated to be as much as several hundred feet thick. Bedrock at depth beneath these sediments consists of Cretaceous-aged deep sea sedimentary fan deposits of the Great Valley Sequence.

The site is located in the Dublin sub-basin, which is the western part of the Livermore Valley groundwater basin (DWR 1963). The unconsolidated to semi-consolidated alluvium in the valley is the main groundwater-bearing zone in the Livermore Valley groundwater basin. Groundwater occurs here under unconfined conditions. Runoff from adjacent highlands and seepage from local streams recharge the alluvial aquifer. The regional groundwater flow follows the topography, moving from areas of higher elevation to areas of lower elevation. The direction of groundwater

flow in the area of the site is generally eastward toward the center of the Amador-Livermore Valley. Most of the drainage into the Amador-Livermore Valley area outlets along the Calaveras fault zone (in the East Bay Hills to the southwest), then west via Niles Canyon across the southern portion of the East Bay Hills (Dibblee and Darrow 1981).

The nearest surface water body to the site is an intermittent creek that drains Martin Canyon, located approximately 0.25 miles to the northwest. Dublin Creek, also an intermittent stream, is located approximately 0.5 miles to the south.

3. SUBSURFACE INVESTIGATION

ETIC observed the installation of groundwater monitoring wells MW5-MW7 on 14 and 15 November 2000. The wells were drilled and installed by Woodward Drilling of Rio Vista, California (C-57 License 710079) to assess the extent of groundwater impacted by MTBE and petroleum hydrocarbons and to provide long-term monitoring of groundwater gradient and direction. The location of these wells was determined based on the predominant historical groundwater flow direction and potential source areas at the site. Prior to well installation, well permits were obtained from the Zone 7 Water Agency, and are included in Appendix A.

3.1 DRILLING OF SOIL BORINGS

The soil borings were drilled using a truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. Prior to drilling each well, a 10- to 12-inch-diameter hole, designated as the delineation area, was cleared using the vacuum method described in Appendix C. Well MW5 was cleared to a depth of 8.4 feet bgs, and wells MW6 and MW7 were cleared to a depth of 4 feet bgs. This procedure was performed to ensure that there were no obstructions near the potential drill path of the augers. The hollow-stem augers and downhole equipment were cleaned by pressure washing before drilling began and upon completion of each borehole. Equipment rinsate was collected in a trough, transferred into 55-gallon drums, and temporarily stored on the site. Field methods and procedures are described in the ETIC protocols presented in Appendix C.

3.2 SOIL SAMPLING

Soil samples were collected at 3- to 5-foot intervals in the borings, by driving an 18-inch-by-2-inch-diameter California-modified split-spoon sampler containing 6-inch brass or stainless steel sleeves ahead of the augers into undisturbed soil. A sleeve from each sample interval was sealed with Teflon tape, capped, labeled, and placed in an ice-packed cooler for delivery to a state-certified laboratory for analysis. The contents of the remaining sleeves were examined for soil characteristics and screened in the field with an organic vapor analyzer (OVA) to determine the relative hydrocarbon content. Soil descriptions and OVA readings are recorded on the soil boring logs presented in Appendix D.

3.3 WELL INSTALLATION

Borings MW5-MW7 were completed as groundwater monitoring wells, in accordance with ETIC's protocols (Appendix C) and the well installation requirements issued by the Zone 7 Water Agency. Well construction details are summarized in Table 3 and are shown on the soil boring logs and well construction diagrams provided in Appendix D.

The wells were constructed with 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) blank well casing and screened with 0.020-inch machine-slotted Schedule 40 PVC casing. A filter pack of #3 sand was placed from the total depth of the borehole to approximately 2 feet above the top of the screened interval of each well. The annular space was then sealed with a 2-foot layer of hydrated bentonite pellets, followed by neat cement grout to just below ground surface.

3.4 WELL DEVELOPMENT

Wells MW5-MW7 were developed on 14 and 15 November 2000. Each well was surged with a 2-inch surge block for approximately 10 minutes. After surging, up to 10 casing volumes of water were purged from the wells. Well development occurred prior to the placement of the bentonite seal in the wells. Well development procedures are described in Appendix C, and the well development records are presented in Appendix E.

3.5 GROUNDWATER SAMPLING

Groundwater samples were collected from MW5-MW7 on 17 November 2000. The wells were gauged for depth to water and for liquid-phase hydrocarbons (LPH) with an optical interface probe. The wells were then purged of 3 casing volumes of water and groundwater samples were collected using factory-cleaned disposable bailers. Groundwater pH, temperature, and electrical conductivity were monitored during purging. The groundwater monitoring and sampling procedures are described in Appendix C, and well sampling/purging records are presented in Appendix E.

3.6 SURVEYING OF GROUNDWATER MONITORING WELLS

The top-of-casing elevations of groundwater monitoring wells MW5 through MW7 as well as significant site features were surveyed by Milani & Associates, a state-licensed land surveyor, on 15 December 2000. The elevations of the wells are listed in Tables 2 and 3. A copy of the surveyor's report is provided in Appendix F.

3.7 WASTE CONTAINMENT AND DISPOSAL

Approximately 2 cubic yards of soil was generated during drilling activities. The soil was placed on and covered with plastic sheeting and temporarily stored on the site. Four composite soil samples were collected from the stockpile, submitted to SPL, Inc. in Houston, Texas, and analyzed for TPH-g and total lead in order to characterize the soil for proper disposal. The laboratory analytical report and chain-of-custody documentation are included in Appendix G. The soil was removed from the site on 29 January 2001 and transported to an ExxonMobil-approved facility.

Equipment rinsate water and water generated during well development and drilling activities were placed in 55-gallon drums. On 21 December 2000 the water was removed from the site and transported to an ExxonMobil-approved treatment facility.

4. RESULTS

4.1 SITE GEOLOGY AND HYDROGEOLOGY

The site geology has been evaluated to a depth of 27.5 feet bgs using data collected during this and previous investigations. The subsurface is characterized by alluvial sediments consisting of clays, silts, sands, and gravels. The soil encountered at the site generally consists of a silty sand/sandy silt to approximately 8.5 feet bgs, clayey silt/silty clay to a depth of 12 feet bgs, and a sand/gravel layer approximately 13.5 feet thick to a depth of 26 feet bgs. Discontinuous silt/clay layers were encountered approximately from 15 feet to 20 feet bgs. A clay layer was encountered beneath the sand at 26 feet bgs. Groundwater was first encountered in the sand and gravel lens at a depth of approximately 16 feet bgs and stabilized at an average depth of 14.5 feet bgs. Detailed soil descriptions are presented on the boring logs in Appendix D. Cross-sections were prepared based on boring logs from this and previous investigations, and are presented as Figure 3. The lines of cross-sections are included in Figure 2.

Static water levels in MW5-MW7 were measured on 17 November. The depth to water was approximately 13.5 feet bgs. The groundwater flow direction was to the southeast, with a gradient of approximately 0.003. LPH was not found in any of the wells.

4.2 SOIL ANALYTICAL METHODS AND RESULTS

Selected soil samples were collected for laboratory analysis from borings MW5 through MW7. The soil samples were submitted to SPL, Inc. in Houston, Texas, and analyzed for TPH-g by modified EPA Method 8015, and for BTEX and MTBE by EPA Method 8021B. MTBE detected by EPA Method 8021B was confirmed by EPA Method 8260B. Copies of the laboratory analytical reports and chain-of-custody documentation are provided in Appendix G. Selected soil samples from MW6 were analyzed for total organic carbon, moisture content, and porosity to provide additional hydrogeologic data.

TPH-g, benzene, and toluene were not detected in any of the soil samples at concentrations above laboratory method detection limits. Ethylbenzene was detected at a concentration of 0.0033 mg/kg in MW5 (9.5-10 feet). Ethylbenzene was not detected in samples from MW6 and MW7. Total xylenes were detected at concentrations of 0.0038 mg/kg in MW5 (9.5-10 feet) and 0.001 mg/kg in MW6 (13-13.5 feet). Total xylenes were not detected above laboratory detection limits in MW7. MTBE was detected at concentrations of 0.023 mg/kg in MW5 (13-13.5 feet) and 0.018 mg/kg in MW6 (13-13.5 feet) using EPA Method 8021B. MTBE was not detected in these samples above reported detection limits using EPA Method 8260B. MTBE was not detected in samples from MW7. The total organic carbon content by the Walkley-Black method in the soil sample collected from MW6 at 10.0-10.5 feet bgs was 0.257 percent.

A soil sample collected from MW6 at 6.0-6.5 feet bgs was sent to McBride-Ratcliff and Associates, Inc. of Houston, Texas, for physical parameter testing. Based on laboratory results, this sample has a porosity of 0.34, and a moisture content of 17.5 percent.

4.3 GROUNDWATER ANALYTICAL METHODS AND RESULTS

Groundwater samples were collected from MW5 through MW7 on 17 November 2000. The samples were analyzed for TPH-g, BTEX, and MTBE. Current and historical groundwater analytical results are summarized in Table 2. The results of the 17 November groundwater sampling event are presented on Figure 2. Copies of the laboratory analytical report and chain-of-custody documentation are provided in Appendix G.

Benzene, toluene, and ethylbenzene were not detected in any of the groundwater samples at concentrations above laboratory method detection limits. MTBE was detected at concentrations of 1,600 µg/L (EPA 8260B) in MW5 and 260 µg/L (EPA 8260B) in MW6. MTBE was not detected in samples from MW7. TPH-g was detected at a concentration of 240 µg/L in MW5. TPH-g was not detected in groundwater samples from MW6 and MW7 above laboratory method detection limits. Total xylenes were detected at a concentration of 2.46 µg/L in MW5. Total xylenes were not detected in groundwater samples from MW6 and MW7 above laboratory method detection limits.

5. SUMMARY

In November 2000, ETIC observed the installation of three groundwater monitoring wells (MW5 through MW7) as part of the investigation activities for former Exxon RS 7-0210. The purpose of the wells is to investigate the impact of petroleum hydrocarbon and MTBE in soil and groundwater. Soil samples were collected from the borings and analyzed for petroleum hydrocarbons and MTBE to provide additional information to characterize environmental conditions of the site.

The soil types encountered at the site generally consist of a silty sand/sandy silt to approximately 8.5 feet bgs, clayey silt/silty clay to a depth of 12 feet bgs, and a sand/gravel layer approximately 13.5 feet thick to a depth of 26 feet bgs. Discontinuous silt/clay layers were encountered from approximately 15 to 20 feet bgs. A clay layer was encountered beneath the sand at 26 feet bgs. Groundwater was first encountered in the sand and gravel lens at a depth of approximately 16 feet bgs and stabilized at an average depth of 14.5 feet bgs.

TPH-g, benzene, and toluene were not detected in any of the soil samples at concentrations above laboratory method detection limits. Ethylbenzene was detected at a concentration of 0.0033 mg/kg in MW5 (9.5-10 feet). Ethylbenzene was not detected in samples from MW6 and MW7. Total xylenes were detected at concentrations of 0.0038 mg/kg in MW5 (9.5-10 feet) and 0.001 mg/kg in MW6 (13-13.5 feet). Total xylenes were not detected above laboratory detection limits in MW7. MTBE was detected at concentrations of 0.023 mg/kg in MW5 (13-13.5 feet) and 0.018 mg/kg in MW6 (13-13.5 feet) using EPA Method 8021B. When confirmed using EPA Method 8260B the MTBE concentrations were not detected above the laboratory detection limits. MTBE was not detected in samples from MW7.

Benzene, toluene, and ethylbenzene were not detected in any of the groundwater samples at concentrations above laboratory method detection limits. MTBE was detected at concentrations of 1,600 µg/L (EPA 8260B) in MW5 and 260 µg/L (EPA 8260B) in MW6. MTBE was not detected in samples from MW7. TPH-g was detected at a concentration of 240 µg/L in MW5. TPH-g was not detected in groundwater samples from MW6 and MW7 above laboratory method detection limits. Total xylenes were detected at a concentration of 2.46 µg/L in MW5. Total xylenes were not detected in groundwater samples from MW6 and MW7 above laboratory method detection limits.

REFERENCES

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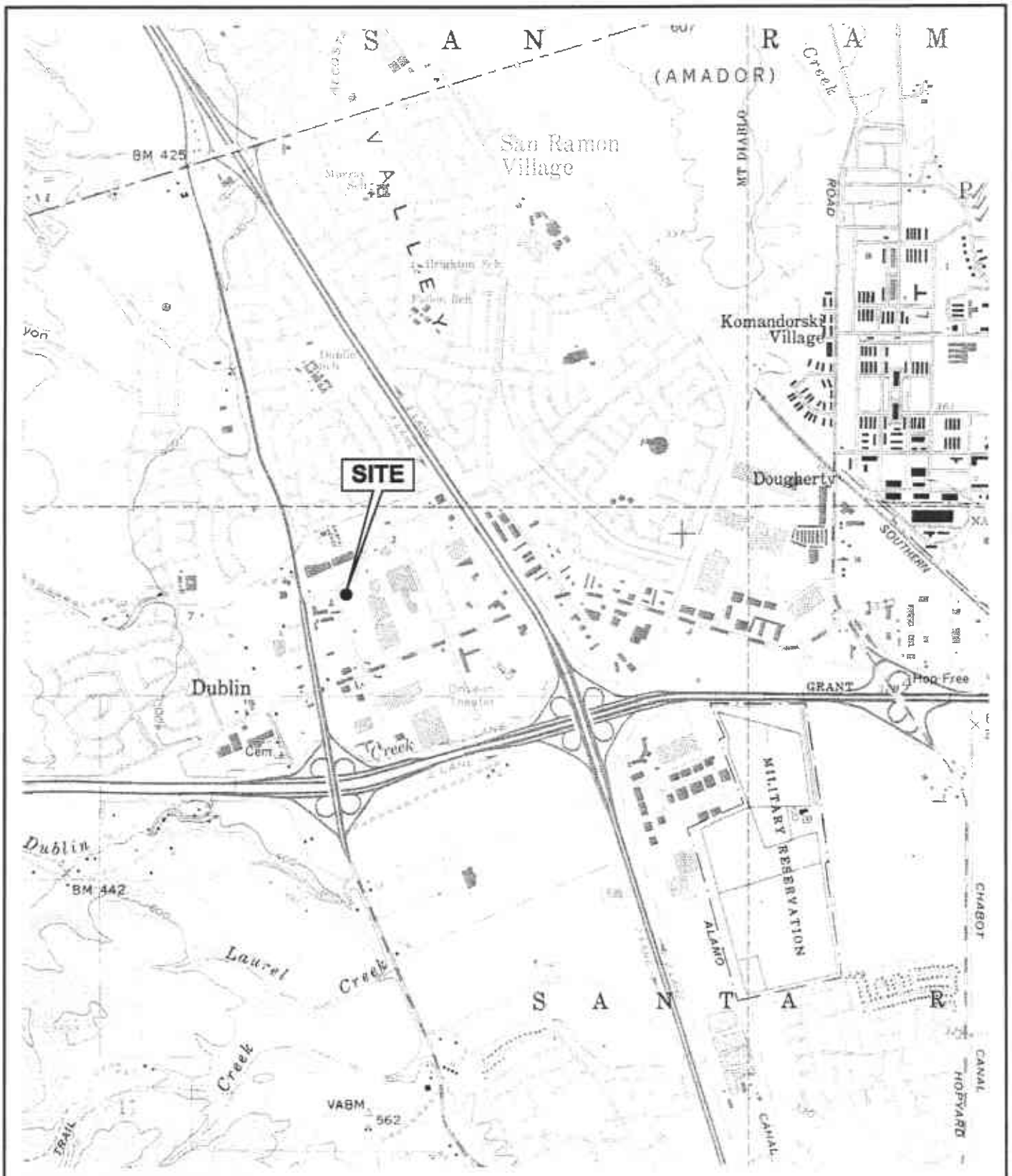


SOURCE: USGS Topography Map

0 2,000

Scale (feet)

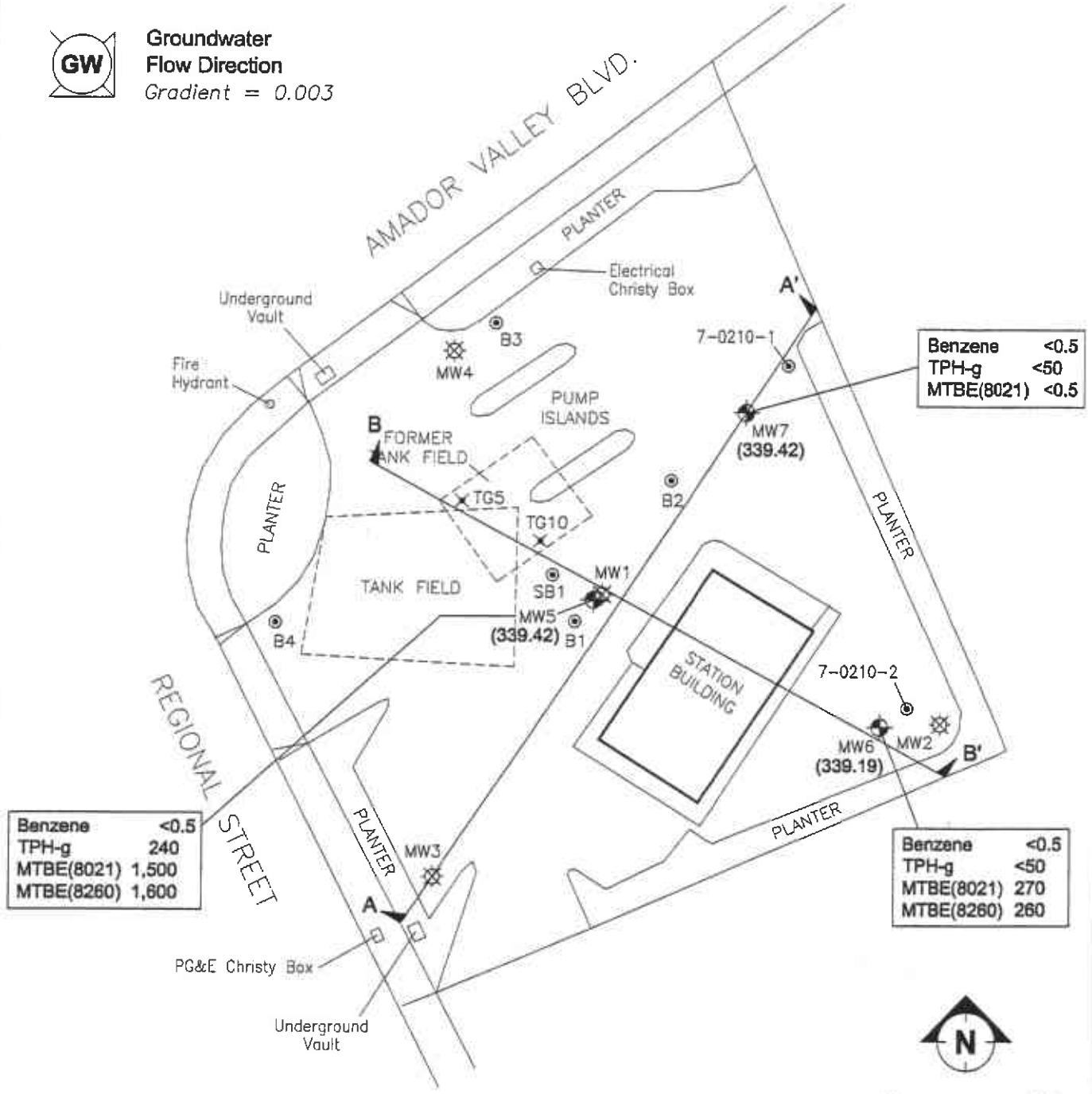
N

ETIC Engineering, Inc.

LOCATION AND TOPOGRAPHY MAP
FORMER EXXON RS 7-0210
7840 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE: 1

FILENAME: TOPO0101.DWG 01/16/01



LEGEND

- GROUNDWATER MONITORING WELL LOCATION
- SOIL BORING / GROUNDWATER SAMPLING LOCATION
- CONFIRMATION SOIL SAMPLE
- DESTROYED GROUNDWATER MONITORING WELL

NOTE:
B1-B4 SAMPLED 12/98.
7-0210-1 AND 7-0210-2 SAMPLED 4/20/00

(339.42) GROUNDWATER ELEVATION (FEET MSL)
TPH-g TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
MTBE METHYL T-BUTYL ETHER
CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).

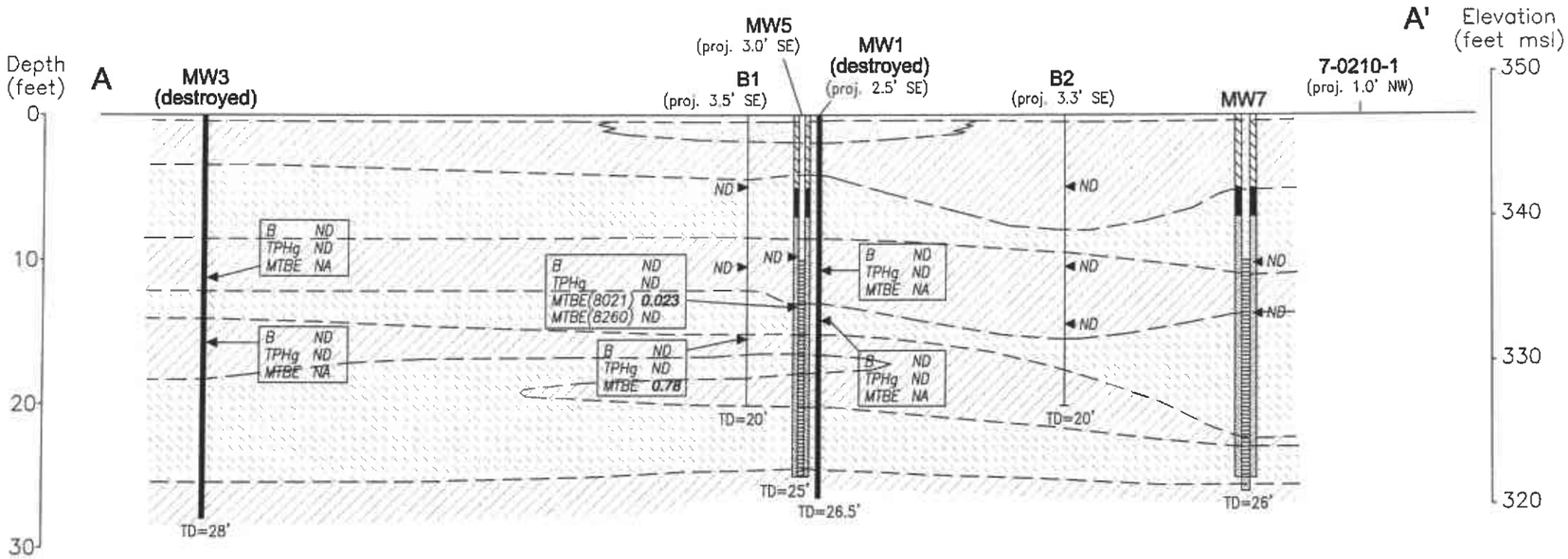
MAP ADAPTED FROM EA ENGINEERING, SCIENCE, AND TECHNOLOGY DRAWING, AND SITE SURVEY PERFORMED BY MILANI & ASSOCIATES, DECEMBER 2000.

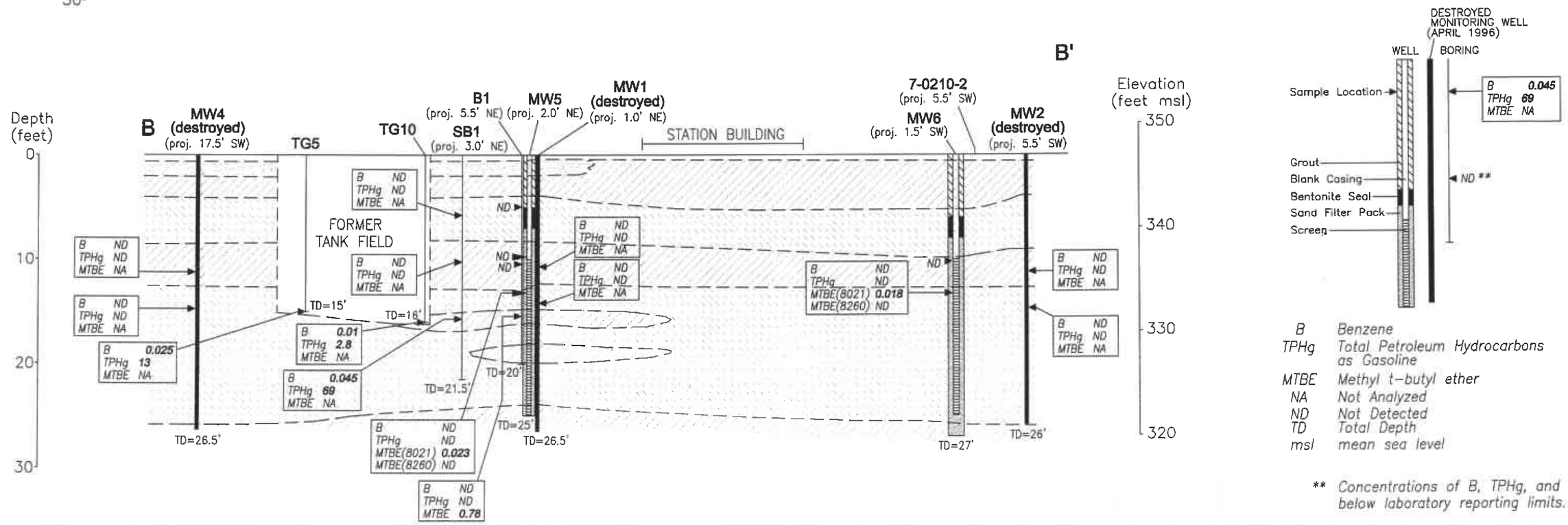
ETIC Engineering, Inc.

SITE PLAN SHOWING GROUNDWATER ELEVATIONS, ANALYTICAL RESULTS, AND GEOLOGIC CROSS-SECTION LINES, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD., DUBLIN, CA. 17 NOVEMBER 2000

FIGURE: 2

FILENAME SITE01DL.DWG 02/12/01





B Benzene
TPHg Total Petroleum Hydrocarbons as Gasoline
MTBE Methyl t-butyl ether
NA Not Analyzed
ND Not Detected
TD Total Depth
msl mean sea level

** Concentrations of B, TPHg, and MTBE below laboratory reporting limits.

ETIC Engineering, Inc.

CROSS-SECTIONS A-A' and B-B'
FORMER EXXON RS 7-0210
7840 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE: 3

FILENAME: SECTIONS.DWG 02/16/01

TABLE 1 CURRENT AND HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Sample ID	Date	Sample Depth (ft bgs)	Concentration (mg/kg)									
			Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-g	TPH-d	MTBE	MTBE 8260B	Organic lead	TOC (%)
SB-1	10/16/91	5.5-6	<0.001	<0.001	<0.001	<0.001	<0.2	NA	NA	NA	NA	NA
		10-10.5	<0.001	<0.001	<0.001	<0.001	<0.2	NA	NA	NA	NA	NA
		15.5-16	0.045	0.15	0.67	2	69	NA	NA	NA	NA	NA
TG1	10/30/91	12	<0.005	<0.005	0.009	0.007	<1.0	NA	NA	NA	NA	NA
TG2	10/30/91	13	0.25	0.75	3.2	14	440	<5.0	NA	NA	NA	NA
TG3	10/30/91	15	0.023	0.074	0.064	0.21	7.5	NA	NA	NA	NA	NA
TG4	10/30/91	14	1.2	8.8	17	98	1,000	<5.0	NA	NA	NA	NA
TG5	10/30/91	15	0.025	<0.005	0.037	0.044	13	NA	NA	NA	NA	NA
TG6	10/30/91	14	0.046	<0.005	0.13	0.075	21	<5.0	NA	NA	NA	NA
TG7	10/30/91	13	<0.005	<0.005	<0.005	0.038	<1.0	NA	NA	NA	NA	NA
TG8	10/30/91	15	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
TG9	10/30/91	16	0.68	0.69	5.7	21	300	NA	NA	NA	NA	NA
TG10	10/30/91	16	0.01	<0.005	0.052	0.13	2.8	NA	NA	NA	NA	NA
TG11	10/30/91	16	<0.005	<0.005	<0.005	<0.005	<1.0	<5.0	NA	NA	NA	NA
PL1	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
PL2	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
PL3	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
PL4	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
PL5	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
PL6	10/30/91	2.5	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
NP1	10/31/00	14	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
NP2	10/31/00	14	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
NP3	10/31/00	14	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
NP4	10/31/00	14	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA	NA	NA	NA
MW1	5/14/92	10.5-11	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	0.25	NA
		14-14.5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	0.2	NA
MW2	5/13/92	11-11.5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA
		14.5-15	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA
MW3	5/13/92	11-11.5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA
		15.5-16	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA

TABLE 1 CURRENT AND HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Sample ID	Date	Sample Depth (ft bgs)	Concentration (mg/kg)									
			Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-g	TPH-d	MTBE	MTBE 8260B	Organic lead	TOC (%)
MW4	5/14/92	11-11.5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA
		14.5-15	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	NA	NA	NA	NA
B1	11/16/98	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	1.1	<0.025	NA	NA	NA
	12/03/98	10-11	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
	12/03/98	15-16	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	0.78	NA	NA	NA
B2	11/16/98	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	1.1	<0.025	NA	NA	NA
	12/03/98	10-11	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
	12/03/98	14-15	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
B3	11/16/98	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	2.1	<0.025	NA	NA	NA
	12/03/98	10-11	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
	12/03/98	12-12.5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
	12/03/98	19-20	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
B4	11/16/98	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	1.3	<0.025	NA	NA	NA
	12/03/98	8-9	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
	12/03/98	15-16	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	NA	<0.025	NA	NA	NA
MW5	11/15/00	9.5-10	<0.001	<0.001	0.0033	0.0038	<1.0	NA	<0.001	NA	NA	NA
		13-13.5	<0.001	<0.001	<0.001	<0.001	<1.0	NA	0.023	<0.01	NA	NA
MW6	11/14/00	10-10.5	<0.001	<0.001	<0.001	<0.001	<1.0	NA	<0.001	NA	NA	0.257
		13-13.5	<0.001	<0.001	<0.001	0.001	<1.0	NA	0.018	<0.01	NA	NA
MW7	11/14/00	10-10.5	<0.001	<0.001	<0.001	<0.001	<1.0	NA	<0.001	NA	NA	NA
		13.5-14	<0.001	<0.001	<0.001	<0.001	<1.0	NA	<0.001	NA	NA	NA

ft bgs	Feet below ground surface.
TPH-g	Total Petroleum Hydrocarbons as gasoline.
TPH-d	Total Petroleum Hydrocarbons as diesel.
TOC	Total organic carbon.
MTBE	Methyl t-butyl ether.
mg/kg	Milligrams per kilogram.
NA	Not analyzed.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CA

Well No.	Date	Casing Elevation (feet msl)	Depth to Water (feet)	Groundwater Elevation (feet msl)	LPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	MTBE
MW1	05/21/92	96.32	14.45	81.87	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	02/10/93		12.22	84.10	0.00	3.1	<0.5	1.8	0.6	2,600	NA
	05/20/93		10.74	85.58	0.00	1.9	<0.5	1.8	<1.0	1,000	NA
	06/23/93		11.74	84.58	0.00	1.0	<0.5	1.2	<0.5	1,300	NA
	08/23/93		12.72	83.60	0.00	<0.5	<0.5	<0.5	0.8	80	NA
	10/25/93		13.99	82.33	0.00	<0.5	<0.5	0.8	1.3	140	NA
	02/16/94		14.90	81.42	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	04/16/94		14.49	81.83	0.00	<0.5*	<0.5	<0.5	<0.5	190	NA
	07/26/94		15.11	81.21	0.00	<0.5*	<0.5	<0.5	<0.5	130	NA
	10/05/94		15.69	80.63	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	01/04/95		14.66	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	06/12/95		10.08	86.24	0.00	<0.5	<0.5	<0.5	<0.5	<50	230
			Well destroyed April 1996.								
MW2	05/21/92	95.91	14.30	81.61	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	02/10/93		12.34	83.57	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	05/20/93		10.73	85.18	0.00	<0.5	<0.5	<0.5	<1.0	320	NA
	06/23/93		11.74	84.17	0.00	<0.5	<0.5	<0.5	<0.5	130	NA
	08/23/93		12.60	83.31	0.00	<0.5	<0.5	<0.5	1.1	140	NA
	10/25/93		13.86	82.05	0.00	<0.5	<0.5	0.5	2.4	75	NA
	02/16/94		14.73	81.18	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	04/16/94		14.33	81.58	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	07/26/94		14.96	80.95	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	10/05/94		15.49	80.42	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	01/04/95		14.44	81.47	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	06/12/95		10.10	85.81	0.00	<0.5	<0.5	<0.5	<0.5	<50	59
			Well destroyed April 1996.								
MW3	05/21/92	97.95	16.05	81.90	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	02/10/93		13.77	84.18	0.00	<0.5	<0.5	<0.5	0.7	<50	NA
	05/20/93		12.32	85.63	0.00	<0.5	<0.5	<0.5	<1.0	<50	NA
	06/23/93		13.34	84.61	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	08/23/93		14.30	83.65	0.00	2.3	1.2	1.4	4.1	<50	NA
	10/25/93		15.62	82.33	0.00	NS	NS	NS	NS	NS	NS
	02/16/94		16.48	81.47	0.00	NS	NS	NS	NS	NS	NS
	04/16/94		16.61	81.34	0.00	NS	NS	NS	NS	NS	NS
	07/26/94		16.72	81.23	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	10/05/94		17.33	80.62	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CA

Well No.	Date	Casing Elevation (feet msl)	Depth to Water (feet)	Groundwater Elevation (feet msl)	LPH Thickness (feet)	Concentration (µg/L)					
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	MTBE
MW3	01/04/95	97.95	16.29	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	06/12/95		11.67	86.28	0.00	<0.5	<0.5	<0.5	<0.5	<50	<2.5
			Well destroyed April 1996.								
MW4	05/21/92	96.69	14.59	82.10	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	02/10/93		12.30	84.39	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	05/20/93		10.75	85.94	0.00	1.4	1.0	<0.5	1.8	<50	NA
	06/23/93		11.78	84.91	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	08/23/93		12.82	83.87	0.00	<0.5	<0.5	<0.5	0.8	<50	NA
	10/25/93		14.10	82.59	0.00	NS	NS	NS	NS	NS	NS
	02/16/94		15.02	81.67	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	04/16/94		14.61	82.08	0.00	NS	NS	NS	NS	NS	NS
	07/26/94		15.23	81.46	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	10/05/94		15.85	80.84	0.00	<0.5	12	<0.5	<0.5	<50	NA
	01/04/95		14.84	81.85	0.00	<0.5	<0.5	<0.5	<0.5	<50	NA
	06/12/95		10.07	86.62	0.00	<0.5	<0.5	<0.5	<0.5	<50	<2.5
			Well destroyed April 1996.								
MW5	11/17/00	352.93	13.51	339.42	0.00	<0.5	<0.5	<0.5	2.46	240	1,500
	11/17/00										1,600[a]
MW6	11/17/00	352.66	13.47	339.19	0.00	<0.5	<0.5	<0.5	<0.5	<50	270
	11/17/00										260[a]
MW7	11/17/00	351.86	12.44	339.42	0.00	<0.5	<0.5	<0.5	<0.5	<50	<0.5

a Analysis by EPA Method 8260.

LPH Liquid-phase hydrocarbons.
TPH-g Total Petroleum Hydrocarbons as gasoline.
MTBE Methyl tertiary butyl ether.
NA Not analyzed for this constituent.
NS Not sampled.

* A peak eluting earlier than benzene, suspected to be MTBE.

feet msl Feet relative to mean sea level.
µg/L Micrograms per liter.

TABLE 3 CONSTRUCTION DETAILS FOR GROUNDWATER MONITORING WELLS,
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well No.	Date Installed	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1[a]	4/14/92	96.32	PVC	26.5	24.75	10.25	4	11-24	0.010	10-25	--
MW2[a]	5/13/92	95.91	PVC	26	25	10.25	4	10-25	0.010	9.5-26	--
MW3[a]	5/14/92	97.95	PVC	28	27.75	10.25	4	12.5-27.5	0.010	11-28	--
MW4[a]	5/14/92	96.69	PVC	26.5	25	10.25	4	12-25	0.010	11-26	--
MW5	11/15/00	352.93*	PVC	25	25	8.25	2	10-25	0.020	7-25	#3 sand
MW6	11/14/00	352.66*	PVC	27	25	8.25	2	10-25	0.020	8-27	#3 sand
MW7	11/14/00	351.86*	PVC	26	25	8.25	2	10-25	0.020	7-25	#3 sand

-- Information not available.
TOC Top of casing.
a Wells were destroyed April 1996 prior to the installation of wells MW5-MW7 on 14-15 November 2000.
* Elevations are based upon Benchmark "AM-STW, Ala Co. 1977. Standard Alameda County disc in top of curb at eastern return at northeastern corner at intersection of Amador Valley Boulevard and Starward Drive. Elevation = 344.171 feet NGVD 1929.

Appendix A

Regulatory Correspondence and Drilling Permit

StID 4103

October 4, 2000

Mr. Darin Rouse
ExxonMobil
2300 Clayton Road, Suite 1250
Concord, CA 94520

RE: MTBE Investigation at Exxon 7-0210, 7840 Amador Valley Blvd., Dublin, CA

Dear Mr. Rouse:

I have completed review of EA Engineering's January 1999 *Baseline Environmental Assessment* and ETIC Engineering's June 2000 *Valero Refining Company Investigation* reports, both prepared for the above referenced site. A total of six soil borings (B1 through B4, 7-0210-1, and 7-0210-2) were advanced in November 1998 and in April 2000 at the site to collect grab soil and/or groundwater samples for MTBE analysis. The soil samples were also analyzed for TPHg and BTEX constituents. Groundwater analytical results identified 4,000ppb MTBE in Boring B1 and 190ppb MTBE in Boring 70210-2.

Based on the above findings, the leaking underground storage tank case was re-opened (in the LOP program). When case closure was granted in early 1996, analysis of MTBE was not required.

At this time, a groundwater investigation is required to delineate the extent of the MTBE plume. A workplan for this phase of investigation is due within 60 days of the date of this letter, or **by November 18, 2000.** It is recommended that a minimum of two, if not three, groundwater monitoring wells be installed at the site.

If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

email: Ted Moise (tmoise@eticeng.com)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

7-0210

StID 4103

November 1, 2000

Mr. Darin Rouse
ExxonMobil
2300 Clayton Road, Suite 1250
P.O.Box 4032
Concord, CA 94524-4032

RE: Work Plan Approval for 7840 Amador Valley Blvd., Dublin, CA

Dear Mr. Rouse:

I have completed review of ETIC Engineering, Inc.'s October 2000 *Work Plan for Subsurface Investigation* prepared for the above referenced site. The proposal to install three groundwater monitoring wells (MW-5 through MW-7) to delineate the extent of the MTBE plume is acceptable. It is my understanding that field work is tentatively scheduled for November 14, 2000.

If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

email: Ted Moise (tmoise@eticeng.com)

exxon0210-6

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2600 X235
FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7840 Amador Valley Blvd.
Dublin, CA

California Coordinates Source _____ ft Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
~~APN~~ 941 0305 020 02 Parcel #

CLIENT
Name Exxon Mobil Refining & Supply
Address PO Box 4032 Phone 925-246-8747
City Concord Zip 94524-4032

APPLICANT
Name ETIC Engineering
Fax 925-977-7915
Address 144 Mayhew Way Phone 925-977-7914
City Walnut Creek Zip 94596

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57 710079

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 8 ft. Number 5

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE November 1, 2000
ESTIMATED COMPLETION DATE November 2, 2000

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE Ted Morse Date 10/11/00

FOR OFFICE

PERMIT NUMBER 20206
WELL NUMBER 3S/1W 2H28 to 2H30
APN 941 0305 020 02

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

B WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industria or 20 feet for domestic and irrigation wells unless a lesser is specially approved.
3. A ' access port at least 0.5 inches in diameter is requirec on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the wellhead

(C) GROUNDWATER MONITORING WELLS (INCLL PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum practicable or 20 feet.

D GEOTECHNICAL. Backfill bore hole with compacted cutti heavy bentonite and upper two feet with compacted materi areas of known or suspected contamination, tremied cement shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete plac tremie

F. WELL DESTRUCTION. See attached.

G SPECIAL CONDITIONS

Approved Wyman Hong Date 11/8/00
Wyman Hong

Appendix B

Historical Site Maps

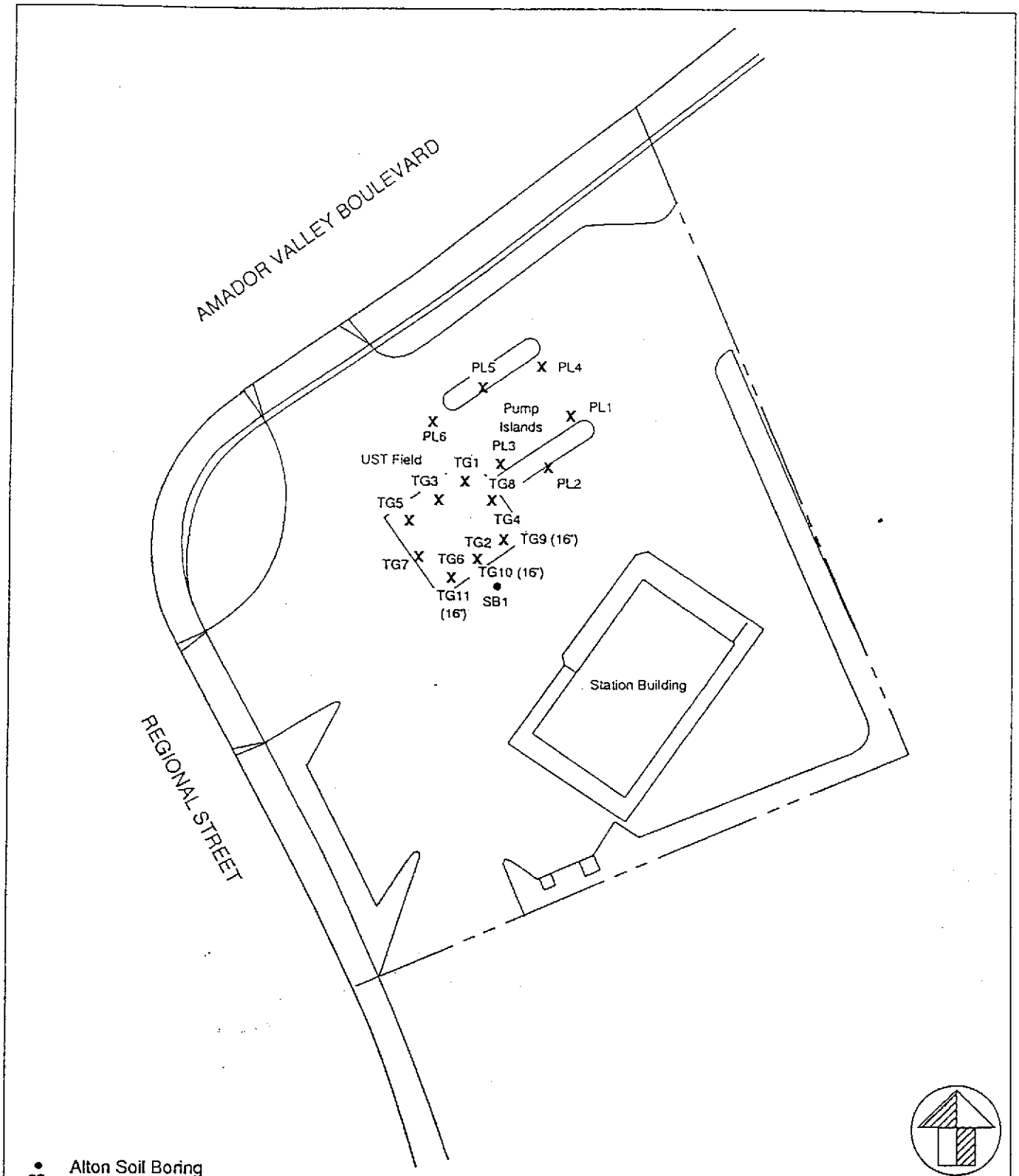


Figure 4. Location of soil boring SB1 (16 October 1991) and soil closure samples collected from the former product storage tank field and piping trenches (30 October 1991), Exxon RS 7-0210, Dublin, California.

Drawn	RK	Date	6/10/92
Reviewed		Date	
Rev. 1		Date	
Final	TKW	Date	28 OCT 92

MDRW/7-0210/ROI/JUN92

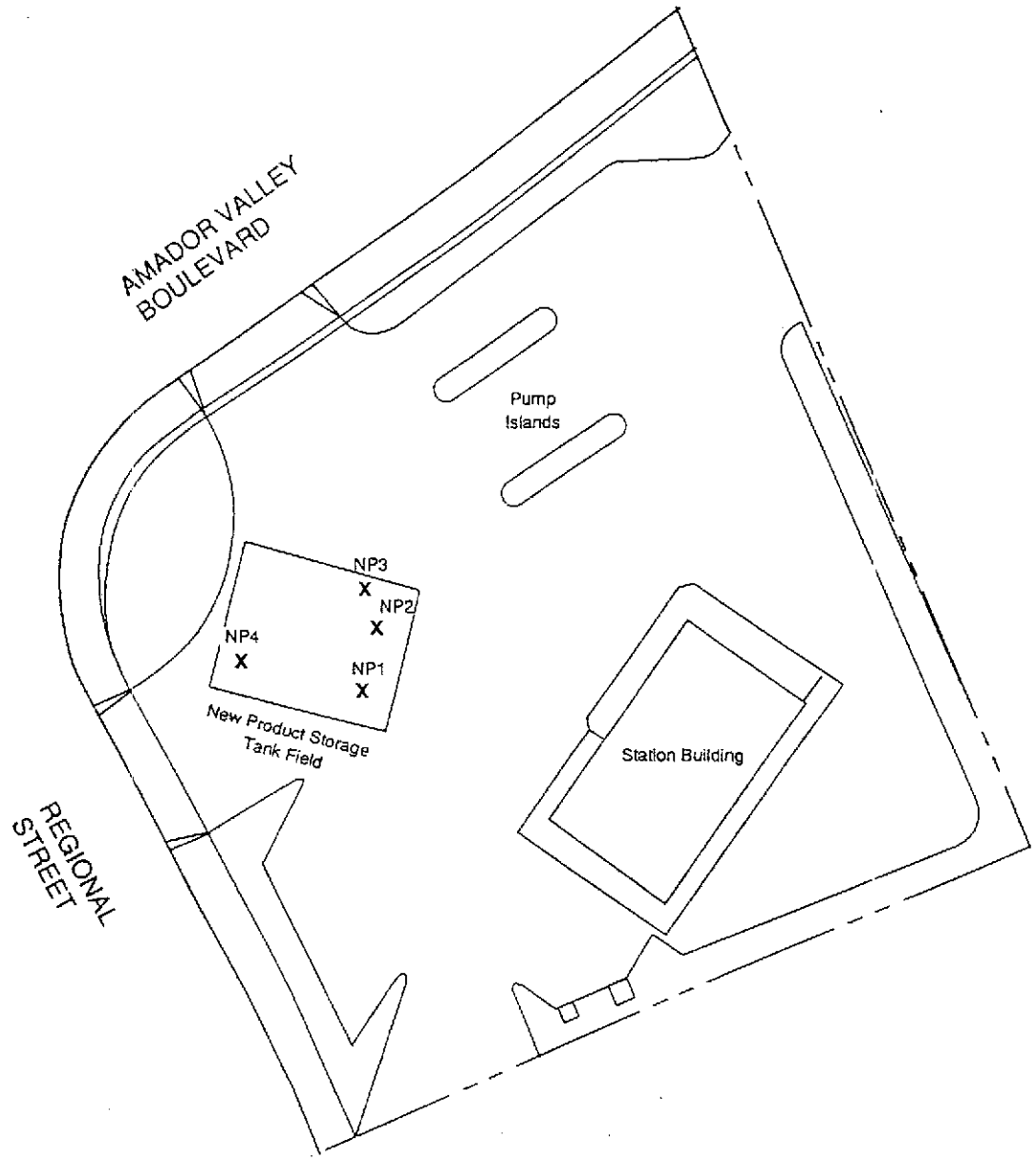


Figure 6. Location of soil closure samples collected from the new product storage tank field at Exxon RS 7-0210, 7840 Amador Valley Road, Dublin, California, 31 October 1991.

Drawn	RK	Date	11/18/91
Reviewed	JDC	Date	13 Dec 91
Rev. 1		Date	
Final	[illegible]	Date	16 Dec 91

ENVIRONMENTAL SERVICES
Western Division

MDRW/7-0210/ROI/NOV91

Appendix C

Protocols for Well Drilling, Completion, Development, and Sampling

PROTOCOLS FOR WELL DRILLING, COMPLETION, DEVELOPMENT, AND SAMPLING

DRILLING

Prior to drilling, all boreholes will be cleared of underground utilities to a depth of at least 4 feet below ground surface (bgs) in "non-critical zones" and to 8 feet bgs in "critical zones". Critical zones are defined as locations that are within 10 feet from the furthest edge of any underground storage tank (UST), within 10 feet of the product dispenser islands, and the entire area between the UST field and the product dispenser islands. If only borings are being installed, an 8- to 12-inch-diameter circle will be cut in the surface cover at each boring location. If wells are being installed, a 10-inch circle to a 24-inch circle or a 2-foot by 2-foot square will be cut in the surface cover at each well location. A hole, greater than the diameter of the drilling tool being used, will then be cleared at each boring location, using a hand auger or vacuum excavation system. The vacuum system consists of a water lance, used to disturb native soil by injecting water into the soil, and a vacuum, used to remove the soil.

Boreholes are drilled with a truck-mounted rotary drill, using hollow-stem continuous-flight augers. The diameter of the augers is selected to provide an annular space between the boring wall and the well casing of no less than 2 inches.

All augers are pressure-washed or steam-cleaned before drilling begins and before each new borehole is drilled. All drill cuttings are either placed on and covered with plastic sheeting or contained in sealed 55-gallon drums. All fluids generated during cleaning of drilling equipment are contained in sealed 55-gallon drums. All waste generated during drilling activities is stored onsite until appropriate disposal is arranged. The drums are labeled with the site description (including owner's name) and date. The drill cuttings are disposed of at a proper facility based on results of soil sample analysis.

During drilling, an ETIC geologist generates a soil boring log for each borehole. The boring logs contain detailed geological information, including descriptions of the soils classified according to the Unified Soil Classification System (USCS), blow counts for soil sampling intervals, organic vapor analyzer (OVA) readings, relative moisture content of the soils, and initial and static water levels.

SOIL SAMPLING

Soil samples are collected using a 2-inch-diameter by 18- or 24-inch-long modified California split-spoon sampler containing three or four 6-inch-long brass or stainless steel liners. The sampler and liners are scrubbed in potable water and Alconox or equivalent detergent and rinsed with potable water after use at each sampling interval.

At each sample depth, the sampler is driven 18 or 24 inches ahead of the augers into undisturbed soil. When the sampler is retrieved, either the lowermost or the middle sample liner is removed and the ends of the tube are covered with aluminum foil or Teflon tape and sealed with plastic caps. The soil-filled liner is labeled with the borehole number, sample depth, site location, date, and time. The samples are placed in zip-lock bags and stored in a cooler containing ice.

Soil from one of the liners is removed and placed in a sealed plastic bag. The soil is scanned with an OVA equipped with a flame ionization detector (FID) or photoionization detector (PID), and the readings are noted on the soil boring logs. The soil from the remaining liner(s) is examined and classified according to the Unified Soil Classification System.

Soil samples are delivered, under chain of custody, to a laboratory certified by the California Department of Health Services (DHS) for analyses.

WELL INSTALLATION

The boreholes are completed as groundwater monitoring wells, vapor extraction wells, groundwater extraction wells, or air sparging wells. The wells are typically constructed by installing Schedule 40 PVC flush-threaded casing through the inner opening of the auger. The screened interval consists of slotted casing of the appropriate slot size and length placed at depths depending on soil conditions encountered during drilling and the depth to groundwater. A threaded end plug or a slip cap secured with a stainless steel screw is placed on the bottom of the well.

A filter pack of clean sand of appropriate size is placed in the annular space around the well screen to approximately 1 to 2 feet above the top of the screen. The sand is placed through the inner opening of the augers as they are slowly removed. A transitional seal is completed above the sand pack by adding 1 to 2 feet of bentonite pellets and hydrating them with water. A surface seal is then created by placing neat cement grout containing less than 5 percent bentonite from the top of the bentonite seal to just below the ground surface.

The well is finished at the surface with a slightly raised, traffic-rated, watertight steel traffic box set in concrete. The traffic box is secured with bolts and the casing is further secured with a locking well cap.

WELL DEVELOPMENT

The wells are developed no less than 72 hours after completion or prior to establishing the bentonite seal during the drilling activities. Development typically consists of surging the screened interval of the well with a flapper valve surge block of the same diameter as the well for approximately 10 minutes. The well is then purged with a vacuum truck and a dedicated PVC stinger or disposable tubing, an inertial pump, a submersible electric pump, a centrifugal pump, an air-lift pump, or a PVC bailer until at least 3 casing volumes are removed and the water is free of silt and apparent turbidity.

A record of the purging methods and volumes of water purged is maintained. All purge water is contained on the site in properly labeled 55-gallon drums. Purged water is transported to an appropriate treatment facility.

GROUNDWATER SAMPLING

The wells are sampled at least 72 hours after grout placement and at least 48 hours after development. Prior to groundwater sample collection, each well was purged until at least 3 casing volumes had been removed. Wells that purged dry were allowed to recover prior to sampling. The pH, specific conductivity, and temperature of the groundwater removed were recorded during purging to ensure that the physical parameters were stable prior to sampling. All samples are collected with a factory cleaned disposable bailer. The bailer is operated by hand using new rope

or Teflon-coated stainless steel wire. The sampling personnel wear clean Nitrile gloves during sampling operations and while handling sample bottles.

The groundwater samples are emptied from the bailer directly into the sample bottles with a bottom-emptying device. The samples are collected in 40-ml glass volatile organic analysis (VOA) vials and/or 1-liter amber bottles with Teflon-lined septum caps as appropriate. The sample bottles contain appropriate preservatives, typically hydrochloric acid. VOA vials are filled to the top of the bottle so that there are no air bubbles.

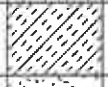
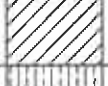
The sample bottles are labeled with the well number, date, location, sampler's initials, and preservative used. The sample vials are placed in a cooler with ice for delivery to the laboratory. Standard chain-of-custody procedures are followed.

WELL SURVEY

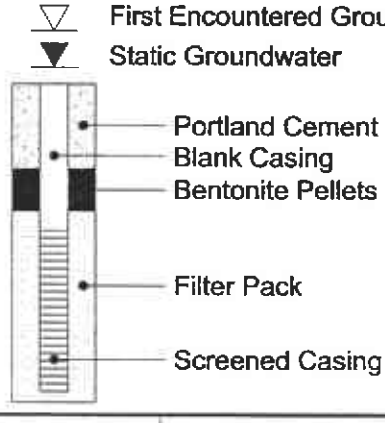
The elevation of the top of the well casing is surveyed by state licensed land surveyor. A small notch is cut in the top of the well casing to mark the survey point and to ensure that this point is used for all future water level measurements. A loop originating and ending at the datum is closed to ±0.01 feet according to standard methods.

Appendix D

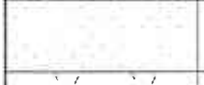
Boring Logs and Well Completion Diagrams

MAJOR DIVISIONS			TYPICAL NAMES		
COARSE-GRAINED SOILS more than half is coarser than No. 200 sieve	GRAVELS more than half coarse fraction is larger than No. 4 sieve size	Clean gravels with little or no fines	GW		Well graded gravels with or without sand, little or no fines.
			GP		Poorly graded gravels with or without sand, little or no fines.
		Gravels with over 12% fines	GM		Silty gravels, silty gravels with sand.
			GC		Clayey gravels, clayey gravels with sand.
	SANDS more than half coarse fraction is smaller than No. 4 sieve size	Clean sands with little or no fines	SW		Well graded sands with or without gravel, little or no fines.
			SP		Poorly graded sands with or without gravel, little or no fines.
		Sands with over 12% fines	SM		Silty sands with or without gravel.
			SC		Clayey sands with or without gravel.
FINE-GRAINED SOILS more than half is finer than No. 200 sieve	SILTS AND CLAYS liquid limit 50% or less		ML		Inorganic silts and very fine sands, rock flour, silts with sands and gravels.
			CL		Inorganic clays of low to medium plasticity, clays with sands and gravels, lean clays.
			OL		Organic silts or clays of low plasticity.
	SILTS AND CLAYS liquid limit greater than 50%		MH		Inorganic silts, micaceous or diatomacious, fine sandy or silty soils, elastic silts.
			CH		Inorganic clays of high plasticity, fat clays.
			OH		Organic silts or clays of medium to high plasticity.
HIGHLY ORGANIC SOILS			Pt		Peat and other highly organic soils.

SYMBOLS



DRILL LOG ROCK TYPES

	Limestone
	Dolomite
	Mudstone
	Siltstone
	Sandstone
	Igneous

ETIC Engineering, Inc.

UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTIONS AND SYMBOLS USED ON ETIC DRILL LOGS

FILENAME: BORE_KEY.DWG

ETIC Engineering, Inc.

LOG OF SOIL BORING: **MW5**

COORDINATES:

ELEVATION TOP OF CASING: 352.93

CASING BELOW SURFACE:

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

DRILLING AND SAMPLING METHODS: Mobile B-57 Rig; 8.25" O.D. Hollow Stem Auger

				DRILLING START	DRILLING FINISH
WATER LEVEL	14.15'	14.86'			
TIME	0950	1052		TIME 0857	TIME 1032
DATE	11/15/00	11/15/00		DATE 11/15/00	DATE 11/15/00
REFERENCE					

SURFACE CONDITIONS: ASPHALT (4")

DESCRIPTION BY: Hamidou Barry / Bob Flory

INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	DEPTH (feet)	GRAPHIC LOG	
				0		Borehole cleared to 8.4ft by vacuum method. ASPHALT
				1		
				2		
				3		
				4	SM	SILTY SAND (SM): light olive brown (2.5Y 5/4); fine sand, loose, weak cementation, low plasticity fines, damp to moist, rare angular gravel up to 0.75".
				5		
				6		
				7		
				8		
24	24	3 7	0.0	9		
		13 15		10		
24	24	8 12	0.0	11	CL	SILTY CLAY (CL): dark greenish gray (10Y 4/1), firm, low plasticity, damp; some fine sand, rare rounded gravel to 0.5".
		15 50/5"		12		
24	24	7 9	0.0	13		SAME: coarse sand, hard.
		12 15		14	SC	CLAYEY SAND (SC): greenish gray (10Y 5/1), medium dense, weak cementation.
24	24	6 7	1.0			Gravelly at 14.5', subangular-subrounded up to 1".
		7 9		15	CL	SILTY CLAY (CL): greenish gray (10Y 5/1), soft to firm, low plasticity, damp.
24	24	2 3	14 97	16		
		3 6	1.0	17	SM/SC	SILTY CLAYEY SAND (SM/SC): greenish gray (10Y 5/1), medium dense, minor gravel, subrounded up to 0.5", damp to moist.
				18		
				19	CL	SILTY CLAY (CL): light olive brown (2.5Y 4/4), soft, medium plasticity, damp; some fine sand.
				20		

ETIC Engineering, Inc.

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

LOG OF SOIL BORING:

MW5

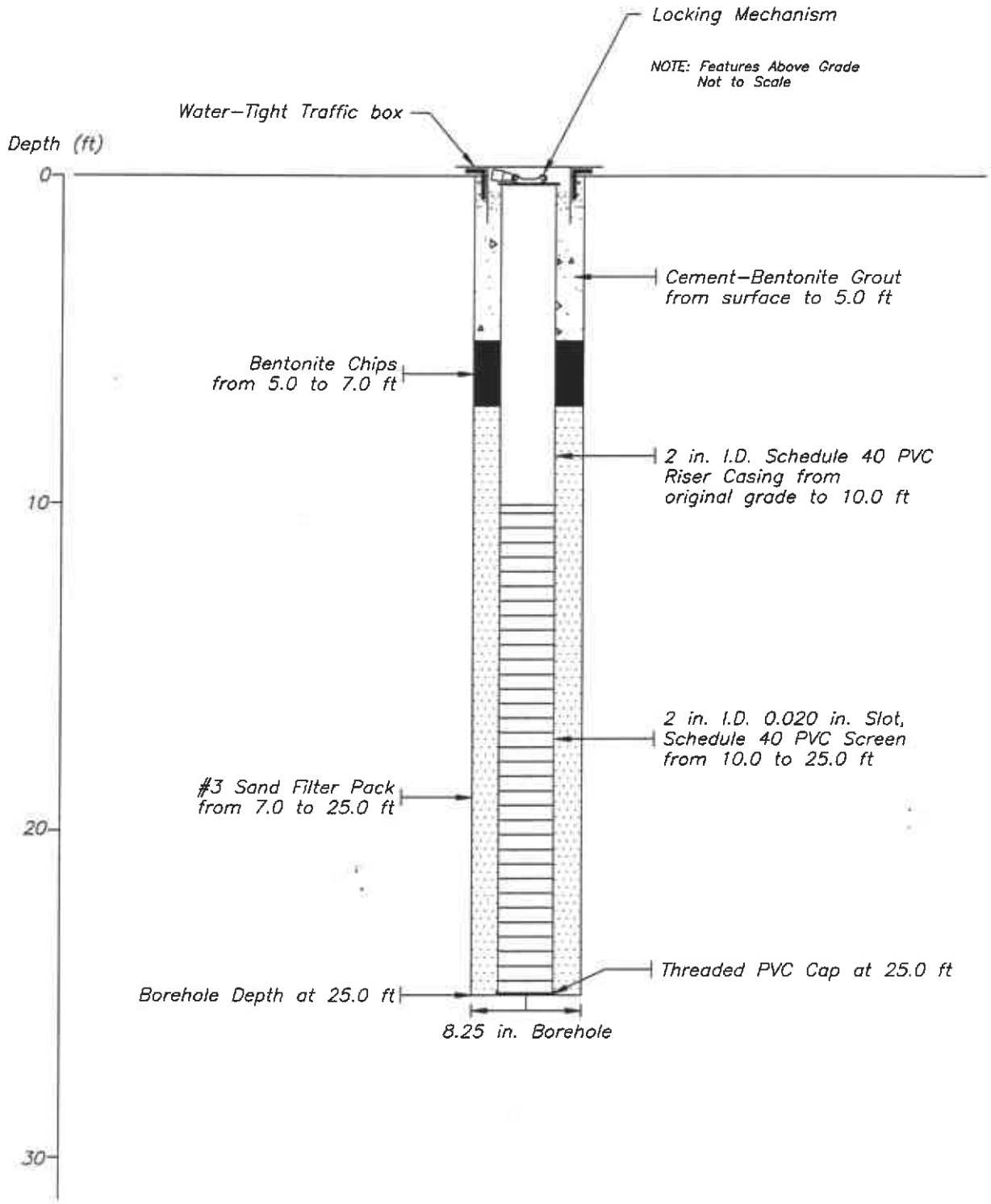
INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	WELL DETAIL	DEPTH (feet)	GRAPHIC LOG
24	20	6, 6			21	GW
		7, 9			22	SC
					23	
24	24	7, 7			24	
		7, 8			25	CL
					26	
					27	
					28	
					29	
					30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	
					39	
					40	
					41	
					42	
					43	
					44	
					45	

SANDY GRAVEL (GW): light yellowish brown (2.5Y 6/3), well-graded gravel, weak cementation; subrounded gravel to 1", fine to coarse sand, wet.

CLAYEY SAND (SC): light olive brown (2.5Y 5/4), medium dense; low plasticity fines, fine to medium sand, damp to moist.

SANDY, SILTY CLAY (CL): light yellowish brown (2.5Y 6/4), soft, medium plasticity, damp; fine sand.

Boring terminated at 25ft.
Sampled to 25ft.



ETIC Engineering, Inc.

WELL COMPLETION DIAGRAM FOR
GROUNDWATER MONITORING WELL MW5
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

ETIC Engineering, Inc.

LOG OF SOIL BORING: **MW6**

COORDINATES:

ELEVATION TOP OF CASING: 352.66

CASING BELOW SURFACE:

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

DRILLING AND SAMPLING METHODS: Mobile B-57 Rig; 8.25" O.D. Hollow Stem Auger

				DRILLING START	DRILLING FINISH
WATER LEVEL	16.8'	14.55'			
TIME	1035	1204		TIME 1038	TIME 1130
DATE	11/14/00	11/14/00		DATE 11/14/00	DATE 11/14/00
REFERENCE	Ground Surface	Ground Surface			

SURFACE CONDITIONS: ASPHALT (4")

DESCRIPTION BY: Hamidou Barry / Bob Flory

INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	WELL DETAIL	DEPTH (feet)	GRAPHIC LOG	
					0		Borehole cleared to 4ft by vacuum method. ASPHALT
					1		
					2		
					3	CL	SANDY CLAY (CL): yellowish brown (10YR 5/4), low plasticity, soft, damp.
					4		
					5		
24	18	8					
		8			6		
		16	0.0				SILTY, CLAYEY SAND (SC): light olive brown (2.5Y 5/3), fine-grained sand, soft to medium dense; low plasticity fines, damp.
		16			7	SC	
24	24	4					
		4			8		
		5					
		6			9		
24	24	5					SAME: color changes to yellowish brown (10YR 5/4).
		5	0.0		10		
		6					
		7			11	CL	SANDY CLAY (CL): olive (5Y 5/4), firm, medium plasticity, damp, fine sand.
24	24	5					
		5			12		
		9					SAME: minor medium to coarse sand.
		10			13		
24	24	7					
		7			14	SC	CLAYEY SAND (SC): light olive brown (2.5Y 5/4), medium dense, low plasticity fine, some subrounded gravel, fine to coarse sand, moist.
		11					
		11	0.0		15		
24	24	5					
		5					SAME: increase in clay content.
		7			16		
		12					
					17		
					18	SP	SAND (SP): yellowish brown (10YR 5/6), poorly graded, fine sand, moderate cementation, medium dense, wet; some subrounded gravel up to 0.5".
					19		Gravelly at 17ft.
					20		

ETIC Engineering, Inc.

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

LOG OF SOIL BORING: **MW6**

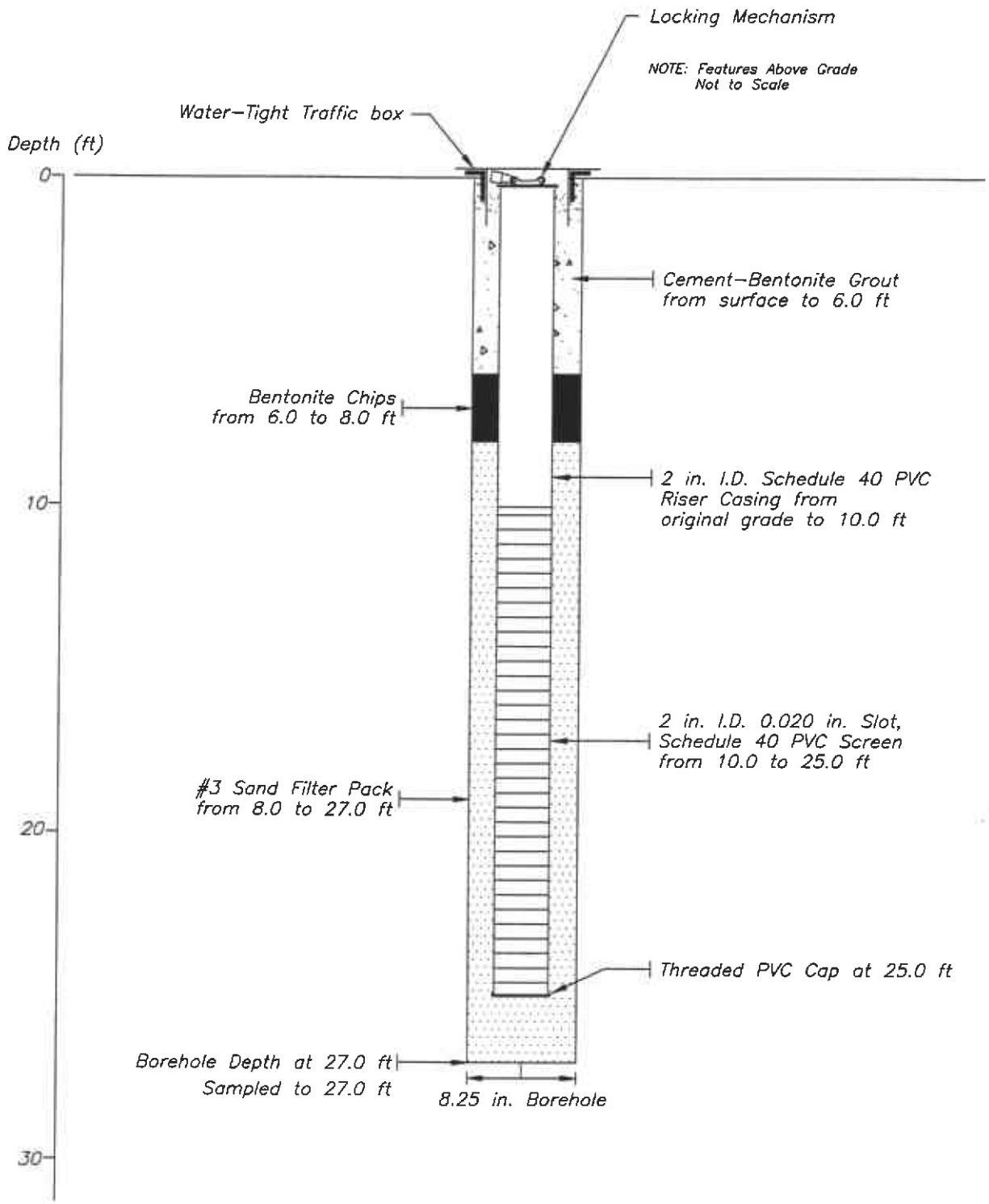
INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	WELL DETAIL	DEPTH (feet)	GRAPHIC LOG
24	24	3, 4			21	SC
		7, 9			22	
					23	
24	12	4, 4			24	
		6			25	SC
24	24	4, 6			26	
		7, 10	0.0		27	CL
					28	
					29	
					30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	
					39	
					40	
					41	
					42	
					43	
					44	
					45	

CLAYEY SAND (SC): light yellowish brown (2.5Y 6/4), medium dense, fine sand, low plasticity clay, moist.

SAME: at 25 ft, gravelly subrounded to rounded gravel to 1"; fine to coarse sand.

SANDY CLAY (CL): olive (5Y 4/3), firm to hard, medium plasticity, damp; fine sand.

Boring terminated at 27ft bgs.
Sampled to 27 ft.



ETIC Engineering, Inc.

WELL COMPLETION DIAGRAM FOR
GROUNDWATER MONITORING WELL MW6
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

ETIC Engineering, Inc.

LOG OF SOIL BORING: **MW7**

COORDINATES:

ELEVATION TOP OF CASING: 351.86

CASING BELOW SURFACE:

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

DRILLING AND SAMPLING METHODS: Mobile B-57 Rig; 8.25" O.D. Hollow Stem Auger

				DRILLING START	DRILLING FINISH
WATER LEVEL	14.3'				
TIME	1500			TIME 1435	TIME 1637
DATE	11/14/00			DATE 11/14/00	DATE 11/14/00
REFERENCE					

SURFACE CONDITIONS: ASPHALT (4")

DESCRIPTION BY: Hamidou Barry / Bob Flory

INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	DEPTH (feet)	GRAPHIC LOG	
				0		Borehole cleared to 4ft bgs by vacuum method. ASPHALT
				1		
				2	CL	SILTY CLAY (CL): dark olive gray (5Y 3/2), soft to firm, low plasticity, damp; some coarse sand, angular gravel up to 1".
				3		
				4		
				5		
18	18	6 9	0.0	6	SC	CLAYEY SAND (SC): light olive brown (2.5Y 5/3); fine sand, medium dense, nonplastic fine, damp, root traces.
		12		7		
				8		
				9		
24	24	10 11	0.0	10	SC	SAME: color change to olive brown (2.5Y 4/3), rare rounded gravel to 0.5".
		12 14		11	CL	SILTY CLAY (CL): olive brown (2.5Y 4/2), firm, low plasticity; some fine sand, damp, rare gravel subangular to 1".
24	24	5 7	0.0	12		
		7 9		13	ML	CLAYEY SILT (ML): olive brown (2.5Y 4/4), soft, low plasticity, moist; some fine sand.
24	24	3 3		14	SC	CLAYEY SAND (SC): dark yellowish brown (10YR 4/4), fine sand, medium dense, moist.
		4 6	0.0	15		
24		2 3		16	SW	SAND (SW): olive (5Y 5/3), well-graded, loose, weak cementation, some subrounded gravel to 0.5", wet.
		4 6		17		No recovery.
24	10	9 11		18		
		10 12		19	SW	GRAVELLY SAND (SW): olive brown (2.5Y 4/4), fine to coarse sand, subrounded gravel up to 1"; weak cementation, some clay and silt, wet.
				20		

ETIC Engineering, Inc.

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	7-0210	7840 Amador Valley Blvd., Dublin, CA

LOG OF SOIL BORING: MW7

INCHES DRIVEN	INCHES RECOVER	BLOWS/6" SAMPLER	PID READING	WELL DETAIL	DEPTH (feet)	GRAPHIC LOG
24	24	2, 6			21	SP
		10, 12			22	
24	24	3, 6				CL
		9, 12			23	
24	24	10, 15	4.0		24	SC
		17, 20			25	
						CL
					26	
					27	
					28	
					29	
					30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	
					39	
					40	
					41	
					42	
					43	
					44	
					45	

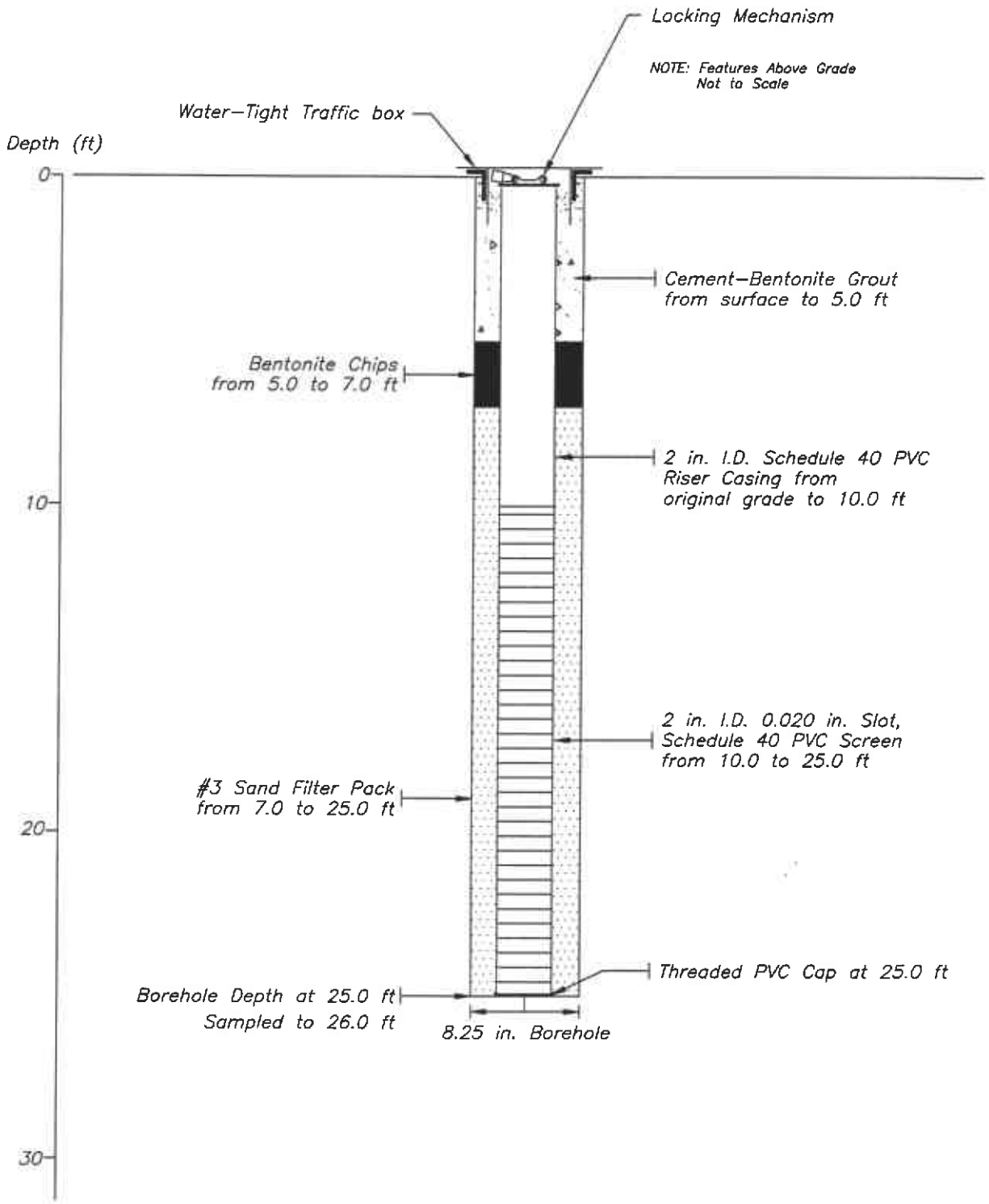
SAND (SP): light olive brown (2.5Y 5/3), poorly graded, fine sand, loose; some coarse sand, low plasticity fine, wet.

SANDY CLAY (CL): light olive brown (2.5Y 5/3), soft to firm, medium plasticity, damp; fine sand, some silt.

CLAYEY SAND (SC): olive (5Y 5/3), medium dense, fine sand, low plasticity fine, damp to moist.

SILTY CLAY (CL): dark olive brown (2.5Y 3/3), firm to hard, low plasticity, damp.

Boring terminated at 25 feet.
Sampled to 26ft.



ETIC Engineering, Inc.

WELL COMPLETION DIAGRAM FOR
GROUNDWATER MONITORING WELL MW7
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

Appendix E

Well Development and Sampling Forms

ETIC
Engineering, Inc.

GROUNDWATER DEVELOPMENT FORM

Project Name: ExxonMobil Refining and Supply | Well No: MW5 | Date: 11/14/00-11/15/00

Project No: TM0210.3 | Personnel: H. Barry & B. Flory

GAUGING DATA

Water Level Measuring Method: Water level Meter | Measuring Point Description:

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	25	-	14.86	=	10.14	X	1	(2)	4	6	1.6224	=	
							0.04	0.16	0.64	1.44			

PURGING DATA

Purge Method: | Purge Depth: | Purge Rate: | *TOTALS*

Time	1137					
Volume Purge (gal)	1.5	1.5	2			
Temperature (C)	65.3	65.3	64.5			
pH	7.20	7.21	7.17			
Spec.Cond.(umhos)	1618	1540	1580			
Turbidity/Color						
Odor (Y/N)						
Casing Volumes	0.92	0.92	1.2			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

Total Purge Volume: 5 *(gallons)* | Disposal: 55 gallon Drum

Weather Conditions: cloudy.

Condition of Well Box and Casing at Time of development: Box was not set

Well Head Conditions Requiring Correction:

Problems Encountered During Purging and Sampling:

Comments:

ETIC Engineering, Inc.

GROUNDWATER DEVELOPMENT FORM

Project Name: ExxonMobil Refining and Supply | Well No: MW6 | Date: 11/14/00-11/15/00

Project No: TM0210.3 | Personnel: H. Barry & B. Flory

GAUGING DATA

Water Level Measuring Method: Water level Meter | Measuring Point Description:

	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
WELL PURGE VOLUME CALCULATION							1	(2)	4	6			
	25	−	14.55	=	10.45	X	0.04	0.16	0.64	1.44	1.672	=	

PURGING DATA

Purge Method: disposable bailers | Purge Depth: | Purge Rate: | TOTALS

Time	1335		1342			
Volume Purge (gal)	1.5	.5	3			
Temperature (C)	6 2 6	62.5	6 3 8			
pH	5.9	5.92	6.14			
Spec.Cond.(umhos)	1660	1420	1328			
Turbidity/Color						
Odor (Y/N)						
Casing Volumes	0.90	0.30	1.80			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

Total Purge Volume: 5 (gallons) | Disposal: 55 gallon drum

Weather Conditions:

Condition of Well Box and Casing at Time of development: Box was not set

Well Head Conditions Requiring Correction:

Problems Encountered During Purging and Sampling:

Comments:

ETIC Engineering, Inc.

GROUNDWATER DEVELOPMENT FORM

Project Name: ExxonMobil Refining and Supply | Well No: MW7 | Date: 11/14/00-11/15/00

Project No: TM0210.3 | Personnel: H. Barry & B. Flory

GAUGING DATA

Water Level Measuring Method: Water level Meter | Measuring Point Description:

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
							1	(2)	4	6			
	25	(-)	17.3	(=)	10.7	(X)	0.04	0.16	0.64	1.44	1.712	(=)	

PURGING DATA

Purge Method: disposable bailers | Purge Depth: | Purge Rate: | TOTALS

Time	0825					
Volume Purge (gal)	1	4	3			
Temperature (°C)	53.0	53.8	52.4			
pH	6.78	6.59	6.64			
Spec.Cond. (umhos)	1592	1387	1298			
Turbidity/Color						
Odor (Y/N)						
Casing Volumes	0.58	2.34	1.75			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

Total Purge Volume: 8 (gallons) | Disposal: 55-gallon drum

Weather Conditions:

Condition of Well Box and Casing at Time of development: Box was not set.

Well Head Conditions Requiring Correction:

Problems Encountered During Purging and Sampling:

Comments:

ETIC Engineering, Inc.

FIELD SUMMARY REPORT

Client: EXXON **Station No.:** 7-0210

Project No.: UP0210.13 **Task No.:**

Sample Team: KEIR JONES

Date: 17 NOVEMBER, 2000

No. of Drums on Site: ____ **Water** ____ **Soil** ____ **Empty**

• **Summary:**

ON SITE: 1130

* SPOKE WITH STATION ATTENDANT, MEI, ABOUT NEW LOCATION FOR DRUMS AND KEY. FIVE (5) DRUMS WERE MOVED INSIDE OF LOCKED COMPOUND LOCATED ON SIDE OF BUILDING. THE ATTENDANT HAS KEY WITH THEM WHILE STORE IS OPEN.

* THE STOCK PILE IS COVERED AND MARKED WITH CAUTION TAPE. APPROX SIZE IS: 6'x 5'x 2'

* SAMPLING *

- OPENED WELLS MW 5-7
- MEASURED DEPTH TO WATER AND DEPTH TO BOTTOM ON EACH WELL (MARKED WITH A NOTCH, WHERE DTW & DTB WERE READ FROM).
- HAND BAILED EACH WELL AND SAMPLED.
- CLOSED AND SECURED EACH WELL.
- LEFT SITE: 245
- NEED TO CHANGE DOLPHIN LOCKS TO ETIC LOCKS. (x3)

11/17/00

144 Mayhew Way, Walnut Creek, CA 94596 • *Phone:* 925.977.7914 • *Fax:* 925.977.7915 • *License No.* 624022

ETIC
Engineering, Inc.

MONITORING WELL DATA FORM

Client: *Exxon*

Date: 17 NOVEMBER, 2000

Project Number: *UP0210.1*

Station Number: *7-0210*

Site Location:
7840 AMADOR VALLY BLVD., DUBLIN, CA

Samplers: KEIR JONES

MONITORING WELL NUMBER	DEPTH TO WATER (TOC)	DEPTH TO PRODUCT (TOC)	APPARENT PRODUCT THICKNESS	AMOUNT OF PRODUCT REMOVED	MONITORING WELL INTEGRITY	DEPTH TO BOTTOM (TOC)	WELL CASING DIAMETER
1315 MM-5	13.51				GOOD	24.38	2"
1350 MM-6	13.47				GOOD	24.05	2"
1420 MM-7	12.44				GOOD	23.91	2"

 Note: Depth to bottom measured during first quarter unless noted.

ETIC Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 Well No: MW-5 Date: 11/7/02

Project No: UP0210.1 Personnel: KER

GAUGING DATA

Water Level Measuring Method: Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	24.38	-	13.51	=	10.87	X	1	2	4	6	1.7	=	5.1
							0.04	0.16	0.64	1.44			

PURGING DATA

Purge Method: HAND BAILER ~~Submersible Pump~~ Purge Depth: Screen Purge Rate: (gpm)

Time	1258	1301	1305			
Volume Purge (gal)	1.7	3.4	5.1			
Temperature (°C)	18.9	17.6	17.7			
pH	7.07	7.03	7.24			
Spec.Cond.(umhos)	2.56	2.70	2.60			
Turbidity/Color						
Odor (Y/N)	N	N	N			
Casing Volumes	SILTY	SILTY	SILTY			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1315 Approximate Depth to Water During Sampling: 14.10 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW-5	X 6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE

Total Purge Volume: 5.0 (gallons) Disposal:

Weather Conditions: CLEAR

Condition of Well Box and Casing at Time of Sampling: GOOD

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

Comments:

ETIC Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: *Exxon 7-0210* Well No: MW 6 Date: 11/17/00

Project No: *UP0210.1* Personnel: Kear

GAUGING DATA

Water Level Measuring Method: Measuring Point Description: *TOC*

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)	Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	24.65	−	13.47	=	11.18	X	1	2	4	6	=	5.1
							0.04	0.16	0.64	1.44	1.7	

PURGING DATA

Purge Method: ~~Submersible Pump~~ HAND BAILED Purge Depth: *Screen* Purge Rate: *(gpm)*

Time	1335	1340	1343			
Volume Purge (gal)	1.7	3.4	5.1			
Temperature (C)	16.9	16.2	17.0			
pH	7.23	7.37	7.29			
Spec.Cond.(umhos)	1.58	1.64	1.56			
Turbidity/Color						
Odor (Y/N)	N	N	N			
Casing Volumes	SILTY	SILTY	SILTY			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1350 Approximate Depth to Water During Sampling: 14.25 *(feet)*

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW-6	X 6	*Voa*	*HCL*	*40 ml*		*TPH-g, BTEX, MTBE*

Total Purge Volume: 5.0 *(gallons)* Disposal:

Weather Conditions: CLEAR

Condition of Well Box and Casing at Time of Sampling: Good

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

Comments:

ETIC Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: *Exxon 7-0210* Well No: MW-7 Date: 11/17/00

Project No: *UP0210.1* Personnel: ICAR

GAUGING DATA

Water Level Measuring Method: Measuring Point Description: *TOC*

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	23.91	−	12.44	=	11.47	X	1	2	4	6	1.8	=	5.4
							0.04	0.16	0.64	1.44			

PURGING DATA

Purge Method: ~~Submersible Pump~~ HAND BAILER Purge Depth: *Screen* Purge Rate: *(gpm)*

Time	1407	1410	1414			
Volume Purge (gal)	1.8	3.6	5.4			
Temperature (C)	17.6	16.3	17.0			
pH	7.19	7.31	7.30			
Spec.Cond.(umhos)	1.16	1.18	1.24			
Turbidity/Color						
Odor (Y/N)	N	N	N			
Casing Volumes	SILTY	SILTY	SILTY			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1420 Approximate Depth to Water During Sampling: 13.15 *(feet)*

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW 7	X 6	*Voa*	*HCL*	*40 ml*		*TPH-g, BTEX, MTBE*

Total Purge Volume: 5.5 *(gallons)* Disposal:

Weather Conditions: CLEAR

Condition of Well Box and Casing at Time of Sampling: GOOD

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

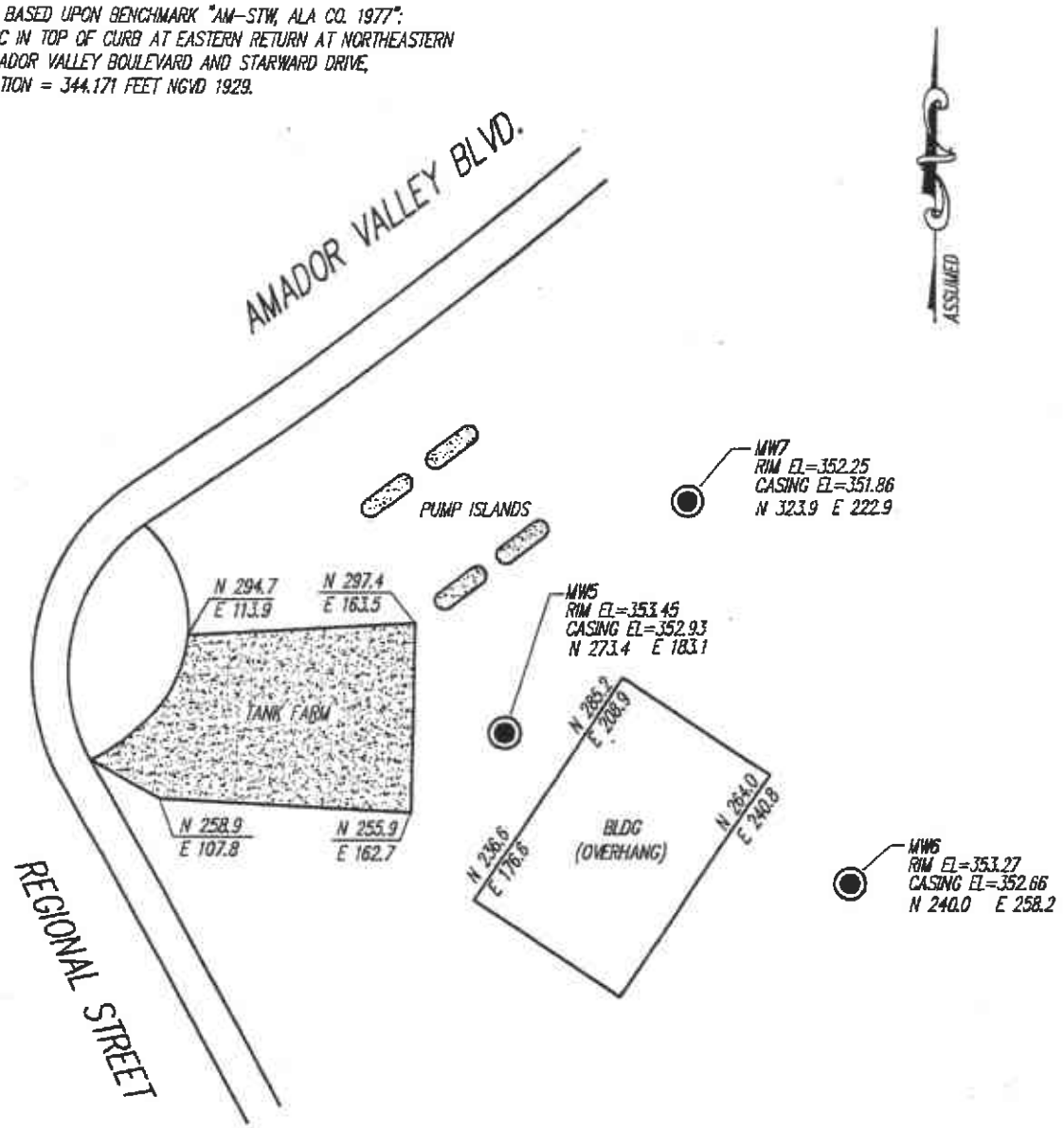
Comments:

Appendix F

Well Survey Report

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED UPON BENCHMARK "AM–STW, ALA CO. 1977": STANDARD ALAMEDA COUNTY DISC IN TOP OF CURB AT EASTERN RETURN AT NORTHEASTERN CORNER AT INTERSECTION OF AMADOR VALLEY BOULEVARD AND STARWARD DRIVE, STAMPED "AM–STW 1977", ELEVATION = 344.171 FEET NGVD 1929.



BEARINGS AND COORDINATES

HORIZONTAL POSITION IS BASED UPON INFORMATION SUPPLIED BY CLIENT. COORDINATES AND BEARINGS ARE ASSUMED. COORDINATES OF MONUMENT WELLS ARE RELATED TO COORDINATES OF OTHER FEATURES SHOWN HEREON.

MONITORING WELLS

EXXON STATION

DUBLIN – ALAMEDA COUNTY – CALIFORNIA

Prepared By

Milani & Associates

Civil Engineers – Land Planners – Land Surveyors

3480 Buskirk Avenue – Suite 225

Pleasant Hill, California 94523

DECEMBER 2000 SCALE: 1"=40'

Appendix G

Soil and Groundwater Laboratory Analytical Reports and Chain-of-Custody Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110543

Report To:		Project Name:	TM0210
ETIC Engineering Inc.		Site:	7-0210,20003669
Ted Moise		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20900790
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

This Report Contains A Total Of 11 Pages

Excluding This Page
And
Chain Of Custody

12/1/00

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Case Narrative for:

EXXON Company U.S.A.

Certificate of Analysis Number:

00110543

Report To:		Project Name:	TM0210
ETIC Engineering Inc.		Site:	7-0210,20003669
Ted Moise		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20900790
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

West, Sonia
Senior Project Manager

12/1/00
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110543

Report To: ETIC Engineering Inc.
Ted Moise
144 Mayhew Way

Walnut Creek
California
94596-
ph: (925) 977-7914 fax: (925) 977-7915

Fax To: ETIC Engineering Inc.
Ted Moise fax : (925) 977-7915

Project Name: TM0210
Site: 7-0210,20003669
Site Address: 7840 Amador Valley Blvd
Dublin CA
PO Number: LWR#20900790
State: California
State Cert. No.: 1903
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW5, 9.5-10 FT	00110543-01	Soil	11/15/00 9:10:00 AM	11/17/00 10:00:00 AM		☐
W5, 13-13.5 FT	00110543-02	Soil	11/15/00 9:30:00 AM	11/17/00 10:00:00 AM		☐
W5, 16.5-17 FT	00110543-03	Soil	11/15/00 9:58:00 AM	11/17/00 10:00:00 AM		☑
MW5, 20.5-21 FT	00110543-04	Soil	11/15/00 10:35:00 AM	11/17/00 10:00:00 AM		☑
W5, 24-5 25 FT	00110543-05	Soil	11/15/00 10:40:00 AM	11/17/00 10:00:00 AM		☑

Sonia West 12/1/00

West, Sonia — Date
enior Project Manager

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW5, 9.5-10 FT **Collected:** 11/15/00 9:10:00 **SPL Sample ID:** 00110543-01

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1	1		11/17/00 19:53	TM	478185
Surr: 1,4-Difluorobenzene	108	%	72-153	1		11/17/00 19:53	TM	478185
Surr: 4-Bromofluorobenzene	106	%	51-149	1		11/17/00 19:53	TM	478185
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001	1		11/17/00 19:53	TM	478173
Ethylbenzene	0.0033		0.001	1		11/17/00 19:53	TM	478173
Methyl tert-butyl ether	ND		0.001	1		11/17/00 19:53	TM	478173
Toluene	ND		0.001	1		11/17/00 19:53	TM	478173
m,p-Xylene	0.0038		0.001	1		11/17/00 19:53	TM	478173
o-Xylene	ND		0.001	1		11/17/00 19:53	TM	478173
Xylenes,Total	0.0038		0.001	1		11/17/00 19:53	TM	478173
Surr: 1,4-Difluorobenzene	101	%	59-127	1		11/17/00 19:53	TM	478173
Surr: 4-Bromofluorobenzene	83.6	%	48-156	1		11/17/00 19:53	TM	478173

Sonia West

West, Sonia
Project Manager

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW5, 13-13.5 FT **Collected:** 11/15/00 9:30:00 **SPL Sample ID:** 00110543-02

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1	1		11/17/00 20:19	TM	478186
Surr: 1,4-Difluorobenzene	103	%	72-153	1		11/17/00 20:19	TM	478186
Surr: 4-Bromofluorobenzene	109	%	51-149	1		11/17/00 20:19	TM	478186
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001	1		11/17/00 20:19	TM	478174
Ethylbenzene	ND		0.001	1		11/17/00 20:19	TM	478174
Methyl tert-butyl ether	0.023		0.001	1		11/17/00 20:19	TM	478174
Toluene	ND		0.001	1		11/17/00 20:19	TM	478174
m,p-Xylene	ND		0.001	1		11/17/00 20:19	TM	478174
o-Xylene	ND		0.001	1		11/17/00 20:19	TM	478174
Xylenes,Total	ND		0.001	1		11/17/00 20:19	TM	478174
Surr: 1,4-Difluorobenzene	101	%	59-127	1		11/17/00 20:19	TM	478174
Surr: 4-Bromofluorobenzene	84.8	%	48-156	1		11/17/00 20:19	TM	478174
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**		**Units: mg/Kg**		
Methyl tert-butyl ether	ND		0.01	1		11/27/00 18:34	NL	486920
Surr: 1,2-Dichloroethane-d4	98.0	%	70-120	1		11/27/00 18:34	NL	486920
Surr: 4-Bromofluorobenzene	86.0	%	74-130	1		11/27/00 18:34	NL	486920
Surr: Toluene-d8	90.0	%	80-140	1		11/27/00 18:34	NL	486920

Sonia West

West, Sonia
Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 00110543
Lab Batch ID: R24793

Method Blank

RunID: VARE_001117B-478172 Units: ug/Kg
Analysis Date: 11/17/2000 19:27 Analyst: TM

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110543-01A	MW5, 9.5-10 FT
00110543-02A	MW5, 13-13.5 FT

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	98.1	59-127
Surr: 4-Bromofluorobenzene	83.3	48-156

Laboratory Control Sample (LCS)

RunID: VARE_001117B-478168 Units: ug/Kg
Analysis Date: 11/17/2000 16:27 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	47	94	60	116
Ethylbenzene	50	49	99	68	127
Methyl tert-butyl ether	50	53	105	64	126
Toluene	50	49	98	64	122
m,p-Xylene	100	99	99	68	129
o-Xylene	50	50	100	68	127
Xylenes,Total	150	149	99	68	129

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117B-478170 Units: ug/Kg
Analysis Date: 11/17/2000 17:44 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	17	80.0	20	17	80.1	.0231	34	35	139
Ethylbenzene	3.3	20	17	66.9	20	16	64.6	3.44	35	31	137
Methyl tert-butyl ether	ND	20	18	89.2	20	20	98.6	10.0	22	27	196

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 00110543
Lab Batch ID: R24793

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117B-478170 Units: ug/Kg
Analysis Date: 11/17/2000 17:44 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
oluene	ND	20	17	84.9	20	17	82.6	2.66	28	31	137
,p-Xylene	3.8	40	34	75.5	40	34	75.1	0.542	38	19	144
o-Xylene	ND	20	18	85.9	20	17	81.4	5.47	57	25	139
ylenes,Total	3.8	60	52	80.3	60	51	78.7	2.10	38	19	144

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Gasoline Range Organics
Method: CA_GRO

WorkOrder: 00110543
Lab Batch ID: R24794

Method Blank

RunID: VARE_001117C-478184 Units: mg/Kg
Analysis Date: 11/17/2000 19:27 Analyst: TM

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110543-01A	MW5, 9.5-10 FT
00110543-02A	MW5, 13-13.5 FT

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	1.0
Surr: 1,4-Difluorobenzene	103.7	72-153
Surr: 4-Bromofluorobenzene	106.7	51-149

Laboratory Control Sample (LCS)

RunID: VARE_001117C-478181 Units: mg/Kg
Analysis Date: 11/17/2000 16:53 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.88	88	53	137

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117C-478182 Units: mg/Kg
Analysis Date: 11/17/2000 18:36 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	0.9	0.69	72.0	0.9	0.71	74.1	2.92	50	36	163

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 00110543
Lab Batch ID: R25235

Method Blank

RunID: M_001127A-486908 Units: ug/Kg
Analysis Date: 11/27/2000 11:53 Analyst: NL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110543-02A	MW5, 13-13.5 FT

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	10
Surr: 1,2-Dichloroethane-d4	80.0	70-120
Surr: 4-Bromofluorobenzene	92.0	74-130
Surr: Toluene-d8	94.0	80-140

Laboratory Control Sample (LCS)

RunID: M_001127A-486907 Units: ug/Kg
Analysis Date: 11/27/2000 11:26 Analyst: NL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	53	106	59	172
Benzene	50	54	108	66	142
Chlorobenzene	50	56	112	60	133
Toluene	50	58	116	59	139
Trichloroethene	50	50	100	62	137

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110544-03
RunID: M_001127A-486910 Units: ug/Kg
Analysis Date: 11/27/2000 12:47 Analyst: NL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	50	46	92	50	47	94	2	22	59	172
Benzene	ND	50	40	80	50	40	80	0	21	66	142
Chlorobenzene	ND	50	34	68	50	35	70	3	21	60	133
Toluene	ND	50	38	76	50	40	80	5	21	59	139
Trichloroethene	ND	50	38	76	50	38	76	0	24	62	137

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

Sample Receipt Checklist

And

Chain of Custody

EXXON COMPANY, USA. (West Coast)

CHAIN OF CUSTODY RECORD NO. 0010543 Page 1 of 1

Exxon Engineer: Darrin Rouse Phone: (925) 246-8768
Consultant Co. Name: ETIC Contact: Ted Moise
Address: 144 Mayhew Way Fax: (925) 977-7915
Walnut Creek, CA 94596
RAS #: 7-0210 Facility/State ID # (TN Only):
AFE # (Terminal Only): Consultant Project #: TM0210
Location: 7840 Amador Valley Blvd (City) Dublin (State) CA
☒ EE ☐ C&M ☐ SDT
Consultant Work Release #: 20003669
Sampled By: Hamidou Barry

SAMPLE I.D.	DATE	TIME	COMP	GRAB	MATRIX H_2O	MATRIX SOIL	MATRIX AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE	TPH/GC 8015 DRO ☐	8015 GRO ☒	BTEX 8020 ☒	602 ☐	MTBE 8020 ☐	8260 ☒	OXYGENATES (7) 8260 ☐	O&G IR 413.1 ☐	GRAV. 413.2 ☐	VOL 8260 ☐	624 ☐	SEMI-VOL 8270 ☐	625 ☐	PNA/PAH 8100 ☐	8310 ☐	8270 ☐	PCB/PEST 8081/8082 ☐	PCB ONLY ☐	TCLP PULL ☐ VOA ☐ SEMIVOA ☐ PEST ☐ HERB ☐	METALS, TOTAL ☐	METALS, TCLP ☐	LEAD, TOTAL 239.1 ☐	7421 ☐	LEAD, TCLP ☐	LEAD, DISSOLVED ☐	LEAD TOTAL ☐	REACTIVITY ☐	CORROSIVITY ☐	FLASH POINT ☐	PURGEABLE HYDROCARBON 8010 ☐	601 ☐	TPH/IR 418.1 ☐	TOX/TOH ☐	4pH
MW5, 9.5-10'	11/15/00	0910				X			None	1	X	X	X	X		X	X																										X
MW5, 13-13.5'	11/15/00	0930				X			X	1	X	X	X	X		X	X																										
MW5, 16.5-17'	11/15/00	0958				X			X	1	X																																X
MW5, 20.5-21'	11/15/00	1035				X			X	1	X																																X
MW5, 24.5-25'	11/15/00	1040				X			X	1	X																																X

RUSH

TAT
24 HR. ____* 72 HR. ____*
48 HR. ____* 96 HR. ____*
8 Business ____ *Contact US Prior to Sending Sample
Other ____

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify)
790402473615 40
651650

REMARKS: ☒ CONFIRM W/ 8260

QA/QC Level
Standard ☒ CLP ☐ Other ☐

SPECIAL REPORTING REQUIREMENTS (Specify)
PDF ☐ ☐ EDD
FAX ☐ ☒ FAX C-O-C W/REPORT

LAB USE ONLY Lot # Storage Location
WORK ORDER #: 0010543 LAB WORK RELEASE #:

CUSTODY RECORD

	Date	Time	
Relinquished By Sampler: JBarr	11/16/00		Received By:
Relinquished:			Received By:
Relinquished:			Received By:
			Way Bill #: Cooler Temp: 11/17/00

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	00110543	Received by:	Stelly, D'Anna
Date and Time Received:	11/17/00 10:00:00 AM	Carrier name:	FedEx
Temperature:	4		

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Present ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

TM

EXXON Company U.S.A.

Certificate of Analysis Number:

00110544

Report To:		Project Name:	TM0210
ETIC Engineering Inc.		Site:	7-0210,20003669
Ted Moise		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20900879
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

This Report Contains A Total Of 14 Pages

Excluding This Page

And

Chain Of Custody

12/15/00

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110544

Report To: ETIC Engineering Inc.
Ted Moise
144 Mayhew Way

Walnut Creek
California
94596-
ph: (925) 977-7914 fax: (925) 977-7915

Fax To: ETIC Engineering Inc.
Ted Moise fax : (925) 977-7915

Project Name: TM0210
Site: 7-0210,20003669
Site Address: 7840 Amador Valley Blvd
Dublin CA
PO Number: LWR#20900879
State: California
State Cert. No.: 1903
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW6, 6-6.5 FT	00110544-01	Soil	11/14/00 10:02:00 AM	11/17/00 10:00:00 AM		☐
MW6, 10-10.5 FT	00110544-02	Soil	11/14/00 10:17:00 AM	11/17/00 10:00:00 AM		☐
MW6, 13-13.5 FT	00110544-03	Soil	11/14/00 10:40:00 AM	11/17/00 10:00:00 AM		☐
MW6, 15-15.5 FT	00110544-04	Soil	11/14/00 10:45:00 AM	11/17/00 10:00:00 AM		☑
MW6, 21-21.5 FT	00110544-05	Soil	11/14/00 11:25:00 AM	11/17/00 10:00:00 AM		☑
MW6, 26.5-27 FT	00110544-06	Soil	11/14/00 11:40:00 AM	11/17/00 10:00:00 AM		☑
MW7, 6-6.5 FT	00110544-07	Soil	11/14/00 2:45:00 PM	11/17/00 10:00:00 AM		☑
MW7, 10-10.5 FT	00110544-08	Soil	11/14/00 2:55:00 PM	11/17/00 10:00:00 AM		☐
MW7, 13.5-14 FT	00110544-09	Soil	11/14/00 3:12:00 PM	11/17/00 10:00:00 AM		☐
MW7, 20.5-21 FT	00110544-10	Soil	11/14/00 4:00:00 PM	11/17/00 10:00:00 AM		☑
MW7, 23.5-24 FT	00110544-11	Soil	11/14/00 4:22:00 PM	11/17/00 10:00:00 AM		☑
MW7, 25.5-26 FT	00110544-12	Soil	11/14/00 4:30:00 PM	11/17/00 10:00:00 AM		☑

Sonia West

12/15/00

West, Sonia
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Case Narrative for:

EXXON Company U.S.A.

Certificate of Analysis Number:

00110544

Report To:		Project Name:	TM0210	
ETIC Engineering Inc.		Site:	7-0210,20003669	
Ted Moise		Site Address:	7840 Amador Valley Blvd	
144 Mayhew Way			Dublin	CA
Walnut Creek		PO Number:	LWR#20900879	
California		State:	California	
94596-		State Cert. No.:		
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	12/15/00	

Your sample ID " MW6, 6-6.5 FT " (SPL ID: 00110544-01) was subcontracted to McBride-Ratcliff for Geotechnical parameters.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like " matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

12/17/00

West, Sonia
Senior Project Manager

Date

McBride-Ratcliff and Associates, Inc.

TO: Mrs. Sonia West
SPL
8880 Interchange Drive
Houston, Texas 77054

DATE OF REPORT: December 13, 2000
PROJECT NUMBER: 79998016
PAGE 1 OF 1

TEST METHOD(s): ASTM D5084, *Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using Flexible Wall Permeameter (on going)*
ASTM D854, *Standard Test Method for Specific Gravity of Soils*
Porosity calculated using weight/volume relationship and specific gravity of solids

NOTE: One soil sample was delivered to the MRA lab by SPL. The samples was contained in sealed tube. The sample was extruded in the MRA laboratory and found to be in good condition.

RESULTS OF LABORATORY TESTS

Sample Identification	00110544-01
Date of Test	December 8, 2000
INITIAL CONDITIONS	
Length, inches	4.019
Diameter, inches	1.881
Moisture Content, % (cm^3/cm^3)	17.5 (0.31)
Unit Wet Weight, pcf (g/cm^3)	130.2 (2.09)
Unit Dry Weight, pcf (g/cm^3)	110.9 (1.78)
Specific Gravity (assumed)	2.71
Porosity	0.34
FINAL CONDITIONS	
Length, inches	4.005
Diameter, inches	1.892
Moisture Content, %	21.2
Unit Wet Weight, pcf	130.9
Unit Dry Weight, pcf	108.0
TEST CONDITIONS	
Permeant	Potable Water
Degree of Saturation, %	100
Effective Cell Pressure, psi	5
Backpressure, psi	75
Average Gradient	33.1
Hydraulic Conductivity, 20°C, cm/sec	5.3×10^{-6}
Intrinsic Permeability, 20°C ,cm^2	5.4×10^{-11}

By Adel Chaouch

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW6, 10-10.5 FT **Collected:** 11/14/00 10:17:0 **SPL Sample ID:** 00110544-02

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1		1		11/17/00 20:44	TM	478187
Surr: 1,4-Difluorobenzene	103	%	72-153		1		11/17/00 20:44	TM	478187
Surr: 4-Bromofluorobenzene	108	%	51-149		1		11/17/00 20:44	TM	478187
ORGANIC CARBON,TOTAL				**MCL**	**WLKBLK**		**Units: %w/w Carbon**		
Organic Carbon,Total	0.257		0.100		1		11/29/00 11:00	GC	488824
PURGEABLE AROMATICS				**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001		1		11/17/00 20:44	TM	478175
Ethylbenzene	ND		0.001		1		11/17/00 20:44	TM	478175
Methyl tert-butyl ether	ND		0.001		1		11/17/00 20:44	TM	478175
Toluene	ND		0.001		1		11/17/00 20:44	TM	478175
m,p-Xylene	ND		0.001		1		11/17/00 20:44	TM	478175
o-Xylene	ND		0.001		1		11/17/00 20:44	TM	478175
Xylenes,Total	ND		0.001		1		11/17/00 20:44	TM	478175
Surr: 1,4-Difluorobenzene	105	%	59-127		1		11/17/00 20:44	TM	478175
Surr: 4-Bromofluorobenzene	83.4	%	48-156		1		11/17/00 20:44	TM	478175

West, Sonia
Project Manager

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW6, 13-13.5 FT **Collected:** 11/14/00 10:40:0 **SPL Sample ID:** 00110544-03

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1	1		11/17/00 21:10	TM	478188
Surr: 1,4-Difluorobenzene	106	%	72-153	1		11/17/00 21:10	TM	478188
Surr: 4-Bromofluorobenzene	106	%	51-149	1		11/17/00 21:10	TM	478188
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001	1		11/17/00 21:10	TM	478176
Ethylbenzene	ND		0.001	1		11/17/00 21:10	TM	478176
Methyl tert-butyl ether	0.018		0.001	1		11/17/00 21:10	TM	478176
Toluene	ND		0.001	1		11/17/00 21:10	TM	478176
m,p-Xylene	0.001		0.001	1		11/17/00 21:10	TM	478176
o-Xylene	ND		0.001	1		11/17/00 21:10	TM	478176
Xylenes,Total	0.001		0.001	1		11/17/00 21:10	TM	478176
Surr: 1,4-Difluorobenzene	102	%	59-127	1		11/17/00 21:10	TM	478176
Surr: 4-Bromofluorobenzene	84.9	%	48-156	1		11/17/00 21:10	TM	478176
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**		**Units: mg/Kg**		
Methyl tert-butyl ether	ND		0.01	1		11/27/00 12:20	NL	486909
Surr: 1,2-Dichloroethane-d4	88.0	%	70-120	1		11/27/00 12:20	NL	486909
Surr: 4-Bromofluorobenzene	90.0	%	74-130	1		11/27/00 12:20	NL	486909
Surr: Toluene-d8	90.0	%	80-140	1		11/27/00 12:20	NL	486909

West, Sonia
Project Manager

Qualifiers:

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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/15/00 3:29:00 PM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW7, 10-10.5 FT **Collected:** 11/14/00 2:55:00 **SPL Sample ID:** 00110544-08

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1	1		11/17/00 21:36	TM	478189
Surr: 1,4-Difluorobenzene	105	%	72-153	1		11/17/00 21:36	TM	478189
Surr: 4-Bromofluorobenzene	109	%	51-149	1		11/17/00 21:36	TM	478189
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001	1		11/17/00 21:36	TM	478177
Ethylbenzene	ND		0.001	1		11/17/00 21:36	TM	478177
Methyl tert-butyl ether	ND		0.001	1		11/17/00 21:36	TM	478177
Toluene	ND		0.001	1		11/17/00 21:36	TM	478177
m,p-Xylene	ND		0.001	1		11/17/00 21:36	TM	478177
o-Xylene	ND		0.001	1		11/17/00 21:36	TM	478177
Xylenes,Total	ND		0.001	1		11/17/00 21:36	TM	478177
Surr: 1,4-Difluorobenzene	102	%	59-127	1		11/17/00 21:36	TM	478177
Surr: 4-Bromofluorobenzene	85.7	%	48-156	1		11/17/00 21:36	TM	478177

West, Sonia
Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW7, 13.5-14 FT **Collected:** 11/14/00 3:12:00 **SPL Sample ID:** 00110544-09

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: mg/Kg**		
Gasoline Range Organics	ND		1	1		11/17/00 22:01	TM	478190
Surr: 1,4-Difluorobenzene	106	%	72-153	1		11/17/00 22:01	TM	478190
Surr: 4-Bromofluorobenzene	109	%	51-149	1		11/17/00 22:01	TM	478190
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: mg/Kg**		
Benzene	ND		0.001	1		11/17/00 22:01	TM	478306
Ethylbenzene	ND		0.001	1		11/17/00 22:01	TM	478306
Methyl tert-butyl ether	ND		0.001	1		11/17/00 22:01	TM	478306
Toluene	ND		0.001	1		11/17/00 22:01	TM	478306
m,p-Xylene	ND		0.001	1		11/17/00 22:01	TM	478306
o-Xylene	ND		0.001	1		11/17/00 22:01	TM	478306
Xylenes,Total	ND		0.001	1		11/17/00 22:01	TM	478306
Surr: 1,4-Difluorobenzene	98.9	%	59-127	1		11/17/00 22:01	TM	478306
Surr: 4-Bromofluorobenzene	83.7	%	48-156	1		11/17/00 22:01	TM	478306

West, Sonia
Project Manager

Qualifiers:
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/15/00 3:29:01 PM

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Purgeable Aromatics **WorkOrder:** 00110544
Method: SW8021B **Lab Batch ID:** R24793

Method Blank

RunID: VARE_001117B-478172 Units: ug/Kg
Analysis Date: 11/17/2000 19:27 Analyst: TM

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	98.1	59-127
Surr: 4-Bromofluorobenzene	83.3	48-156

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110544-02A	MW6, 10-10.5 FT
00110544-03A	MW6, 13-13.5 FT
00110544-08A	MW7, 10-10.5 FT
00110544-09A	MW7, 13.5-14 FT

Laboratory Control Sample (LCS)

RunID: VARE_001117B-478168 Units: ug/Kg
Analysis Date: 11/17/2000 16:27 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	47	94	60	116
Ethylbenzene	50	49	99	68	127
Methyl tert-butyl ether	50	53	105	64	126
Toluene	50	49	98	64	122
m,p-Xylene	100	99	99	68	129
o-Xylene	50	50	100	68	127
Xylenes,Total	150	149	99	68	129

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117B-478170 Units: ug/Kg
Analysis Date: 11/17/2000 17:44 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	17	80.0	20	17	80.1	.0231	34	35	139
Ethylbenzene	3.3	20	17	66.9	20	16	64.6	3.44	35	31	137
Methyl tert-butyl ether	ND	20	18	89.2	20	20	98.6	10.0	22	27	196

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 00110544
Lab Batch ID: R24793

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117B-478170 Units: ug/Kg
Analysis Date: 11/17/2000 17:44 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
oluene	ND	20	17	84.9	20	17	82.6	2.66	28	31	137
,p-Xylene	3.8	40	34	75.5	40	34	75.1	0.542	38	19	144
o-Xylene	ND	20	18	85.9	20	17	81.4	5.47	57	25	139
ylenes,Total	3.8	60	52	80.3	60	51	78.7	2.10	38	19	144

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Gasoline Range Organics
Method: CA_GRO

WorkOrder: 00110544
Lab Batch ID: R24794

Method Blank

RunID: VARE_001117C-478184 Units: mg/Kg
Analysis Date: 11/17/2000 19:27 Analyst: TM

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	1.0
Surr: 1,4-Difluorobenzene	103.7	72-153
Surr: 4-Bromofluorobenzene	106.7	51-149

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110544-02A	MW6, 10-10.5 FT
00110544-03A	MW6, 13-13.5 FT
00110544-08A	MW7, 10-10.5 FT
00110544-09A	MW7, 13.5-14 FT

Laboratory Control Sample (LCS)

RunID: VARE_001117C-478181 Units: mg/Kg
Analysis Date: 11/17/2000 16:53 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.88	88	53	137

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110543-01
RunID: VARE_001117C-478182 Units: mg/Kg
Analysis Date: 11/17/2000 18:36 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
soline Range Organics	ND	0.9	0.69	72.0	0.9	0.71	74.1	2.92	50	36	163

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 00110544
Method: SW8260B **Lab Batch ID:** R25235

Method Blank

RunID: M_001127A-486908 Units: ug/Kg
Analysis Date: 11/27/2000 11:53 Analyst: NL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110544-03A	MW6, 13-13.5 FT

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	10
Surr: 1,2-Dichloroethane-d4	80.0	70-120
Surr: 4-Bromofluorobenzene	92.0	74-130
Surr: Toluene-d8	94.0	80-140

Laboratory Control Sample (LCS)

RunID: M_001127A-486907 Units: ug/Kg
Analysis Date: 11/27/2000 11:26 Analyst: NL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	53	106	59	172
Benzene	50	54	108	66	142
Chlorobenzene	50	56	112	60	133
Toluene	50	58	116	59	139
Trichloroethene	50	50	100	62	137

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110544-03
RunID: M_001127A-486910 Units: ug/Kg
Analysis Date: 11/27/2000 12:47 Analyst: NL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	50	46	92	50	47	94	2	22	59	172
enzene	ND	50	40	80	50	40	80	0	21	66	142
hlorobenzene	ND	50	34	68	50	35	70	3	21	60	133
Toluene	ND	50	38	76	50	40	80	5	21	59	139
richloroethene	ND	50	38	76	50	38	76	0	24	62	137

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210

Analysis: Organic Carbon,Total
Method: WLKBLK
WorkOrder: 00110544
Lab Batch ID: R25322

Method Blank

RunID: WET_001129B-488821 Units: %w/w Carbon
Analysis Date: 11/29/2000 11:00 Analyst: GC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110544-02A	MW6, 10-10.5 FT

Analyte	Result	Rep Limit
Organic Carbon,Total	ND	0.10

Laboratory Control Sample (LCS)

RunID: WET_001129B-488823 Units: %w/w Carbon
Analysis Date: 11/29/2000 11:00 Analyst: GC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Organic Carbon,Total	1	1.02	102	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110544-02
RunID: WET_001129B-488825 Units: %w/w Carbon
Analysis Date: 11/29/2000 11:00 Analyst: GC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Organic Carbon,Total	0.26	0.08	0.335	97	0.08	0.335	97	0	35	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

12/15/00 3:29:06 PM

Sample Receipt Checklist

And

Chain of Custody

EXXON COMPANY, USA. (West Coast)

CHAIN OF CUSTODY RECORD NO. 904064 Page 1 of 2

Exxon Engineer: Darin Rouse Phone: (925) 246-8768
Consultant Co. Name ETIC Contact: Ted Mouse
Address: 144 Mayhew Way Fax: (925) 977-7915
Walnut Creek, CA 94596
RAS #: 7-0210 Facility/State ID # (TN Only):
AFE # (Terminal Only): Consultant Project #: TM0210
Location: 7840 Amador Valley Blvd (City) Dublin (State) CA
☒ EE ☐ C&M ☐ SDT
Consultant Work Release #: 20003669
Sampled By: Hamidou Barry

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX H_2O	MATRIX SOIL	MATRIX AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE	TPH/GC 8015 GRO ☒	TPH/GC 8015 DRO ☐	BTEX 8020 ☒	BTEX 602 ☐	MTBE ~~8020~~ ☒	MTBE 8260 ☐	OXYGENATES (7) 8260 ☐	O&G IR 413.1 ☐	GRAV. 413.2 ☐	VOL-8260 ☐ TOC	624 ☐	SEMI-VOL 8270 ☐	625 ☐	PNA/PAH 8100 ☐	8310 ☐	8270 ☐	PCB/PEST 8081/8082 ☐	PCB ONLY ☐	TCLP FULL ☐ VOA ☐ SEMIVOA ☐ PEST ☐ HERB ☐	METALS, TOTAL ☐	METALS, TCLP ☐	LEAD, TOTAL 239.1 ☐	7421 ☐	LEAD, TCLP ☐	LEAD, DISSOLVED ☐	LEAD TOTAL ☐	REACTIVITY ☐	CORROSIVITY ☐	FLASH POINT ☐	PURGEABLE HYDROCARBON 8010 ☐	601 ☐	TPH/IR 418.1 ☐	TOX/TOTAL ☐	Hold
MW6, 6-6.5'	11/14/00	1002				X			None	1	X																																X
MW6, 10-10.5'	11/14/00	1017				X			X	1	X	X		X		X						X																		X	X		X
MW6, 13-13.5'	11/14/00	1040				X			X	1	X	X		X		X																											X
MW6, 15-15.5'	11/14/00	1045				X			X	1	X																																X
MW6, 21-21.5'	11/14/00	1125				X			X	1	X																																X
MW6, 26.5-27'	11/14/00	1140				X			X	1	X																																X
MW7, 6-6.5'	11/14/00	1445				X			X	1	X																																X
MW7, 10-10.5'	11/14/00	1455				X			X	1	X	X		X		X																											X
MW7, 13.5-14'	11/14/00	1512				X			X	1	X	X		X		X																											
MW7, 20.5-21'	11/14/00	1600				X			X	1	X																																X

RUSH

TAT
24 HR. ___* 72 HR. ___*
48 HR. ___* 96 HR. ___*
8 Business ___ *Contact US Prior to Sending Sample
Other ___

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify) 40

REMARKS: * Confirm MTBE by 8260
** Modified Black Method

QA/QC Level
Standard ☒ CLP ☐ Other ☐ ___

SPECIAL REPORTING REQUIREMENTS (Specify)
PDF ☐ ☐ EDD
FAX ☐ ☒ FAX C-O-C W/REPORT

LAB USE ONLY Lot # Storage Location
500 pp
WORK ORDER #: 00110544 LAB WORK RELEASE #:

CUSTODY RECORD

Relinquished By Sampler:	Date 11/16/00	Time	Received By:
Relinquished:	Date	Time	Received By:
Relinquished:	Date	Time	Received By:

Way Bill #: Cooler Temp. 1000

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow

00T0544

EXXON COMPANY, USA. (West Coast)

CHAIN OF CUSTODY RECORD NO. _____ Page 2 of 2

Exxon Engineer: Dazin Rouse Phone: (925) 246-8768

Consultant Co. Name: ETIC Contact: Ted Mouse

Address: 144 Mayhew Way Fax: (925) 977-7915
Walnut Creek, CA 94596

RAS #: 7-0210 Facility/State ID # (TN Only): _____

AFE # (Terminal Only): _____ Consultant Project #: TM0210

Location: 7840 Amador Valley Blvd (City) Dublin (State) CA
☒ EE ☐ C&M ☐ SDT

Consultant Work Release #: 20003669

Sampled By: Hamidou Barry

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX H_2O	MATRIX SOIL	MATRIX AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE
MW7, 23.5-24'	11/14/00	1622				X			None	1	X
MW7, 25.5-26'	11/14/00	1630				X			None	1	X

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)

TPH/GC 8015 GRO ☐ 8015 DRO ☐	BTEX 8020 ☐ 602 ☐	MTBE 8020 ☐ 8260 ☐	OXYGENATES (7) 8260 ☐	O&G IR 413.1 ☐ GRAV. 413.2 ☐	VOL 8260 ☐ 624 ☐	SEMI-VOL 8270 ☐ 625 ☐	PNA/PAH 8100 ☐ 8310 ☐ 8270 ☐	PCB/PEST 8081/8082 ☐ PCB ONLY ☐	TCLP FULL ☐ VOA ☐ SEMIVOA ☐ PEST ☐ HERB ☐	METALS, TOTAL ☐ METALS, TCLP ☐	LEAD, TOTAL 239.1 ☐ 7421 ☐ LEAD, TCLP ☐	LEAD, DISSOLVED ☐ LEAD TOTAL ☐	REACTIVITY ☐ CORROSIVITY ☐ FLASH POINT ☐

OTHER

PURGEABLE HYDROCARBON 8010 ☐ 601 ☐	TPH/IR 418.1 ☐	TOX/TOH ☐	Hold
			X
			X

TAT
24 HR. ____* 72 HR. ____*
48 HR. ____* 96 HR. ____*
8 Business ____ *Contact US Prior to Sending Sample
Other ____

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify)

REMARKS:

SPECIAL REPORTING REQUIREMENTS (Specify)

PDF ☐ ☐ EDD

FAX ☐ ☒ FAX C-O-C W/REPORT

QA/QC Level
Standard ☒ CLP ☐ Other ☐ _____

LAB USE ONLY Lot # Storage Location

WORK ORDER #: LAB WORK RELEASE #:

CUSTODY RECORD

	Relinquished By Sampler:	Date	Time	Received By:
		11/16/00		
	Relinquished:	Date	Time	Received By:
	Relinquished:	Date	Time	Received By:
				Way Bill #: DAma Kelly Cooler Temp: 11/17/00 1000

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow

HOUSTON LABORATORY
8380 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	00110544	Received by:	Stelly, D'Anna
Date and Time Received:	11/17/00 10:00:00 AM	Carrier name:	FedEx
Temperature:	4		

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Present ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110562

Report To:		Project Name:	TM0210.3B
ETIC Engineering Inc.		Site:	7-0210,20003669
Ted Moise		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20900881
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

This Report contains a total of 10 Pages

Excluding this page

And

Chain of Custody

Received
DEC 4 2000
ETIC Engineering Inc.

11/27/00

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Case Narrative for:

EXXON Company U.S.A.

Certificate of Analysis Number:

00110562

Report To:		Project Name:	TM0210.3B
ETIC Engineering Inc.		Site:	7-0210,20003669
Ted Moise		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20900881
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like " matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Sonia West

West, Sonia
Senior Project Manager

11/27/00
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110562

Report To: ETIC Engineering Inc.
Ted Moise
144 Mayhew Way

Walnut Creek
California
94596-
ph: (925) 977-7914 fax: (925) 977-7915

Fax To: ETIC Engineering Inc.
Ted Moise fax : (925) 977-7915

Project Name: TM0210.3B
Site: 7-0210,20003669
Site Address: 7840 Amador Valley Blvd
Dublin CA
PO Number: LWR#20900881
State: California
State Cert. No.: 1903
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
SP-1-4-COMP	00110562-01	Soil	11/15/00 12:30:00 PM	11/17/00 10:00:00 AM		☐

Sonia West

11/27/00

West, Sonia
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID SP-1-4-COMP **Collected:** 11/15/00 12:30:0 **SPL Sample ID:** 00110562-01

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				**MCL**	**CA_GRO**	**Units: mg/Kg**		
Gasoline Range Organics	ND		1		1	11/20/00 16:35	TM	482060
Surr: 1,4-Difluorobenzene	105	%	72-153		1	11/20/00 16:35	TM	482060
Surr: 4-Bromofluorobenzene	122	%	51-149		1	11/20/00 16:35	TM	482060
METALS BY METHOD 6010B, TOTAL				**MCL**	**SW6010B**	**Units: mg/Kg**		
Lead	5.78		0.5		1	11/23/00 4:02	EG	483278

Prep Method	Prep Date	Prep Initials
SW3050B	11/20/2000 10:00	MR

PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: mg/Kg**		
Benzene	ND		0.001		1	11/20/00 16:35	TM	480126
Ethylbenzene	ND		0.001		1	11/20/00 16:35	TM	480126
Toluene	ND		0.001		1	11/20/00 16:35	TM	480126
m,p-Xylene	0.0048		0.001		1	11/20/00 16:35	TM	480126
o-Xylene	0.0023		0.001		1	11/20/00 16:35	TM	480126
Xylenes,Total	0.0071		0.001		1	11/20/00 16:35	TM	480126
Surr: 1,4-Difluorobenzene	101	%	59-127		1	11/20/00 16:35	TM	480126
Surr: 4-Bromofluorobenzene	90.8	%	48-156		1	11/20/00 16:35	TM	480126

Sonia West

~~West, Sonia~~
Project Manager

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

11/27/00 2:39:43 PM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210.3B

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 00110562
Lab Batch ID: R24887

Method Blank

RunID: VARE_001120A-480123 Units: ug/Kg
Analysis Date: 11/20/2000 14:01 Analyst: TM

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110562-01A	SP-1-4-COMP

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	101.6	59-127
Surr: 4-Bromofluorobenzene	84.0	48-156

Laboratory Control Sample (LCS)

RunID: VARE_001120A-480120 Units: ug/Kg
Analysis Date: 11/20/2000 10:23 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	48	96	60	116
Ethylbenzene	50	50	101	68	127
Toluene	50	51	102	64	122
m,p-Xylene	100	100	102	68	129
o-Xylene	50	51	102	68	127
Xylenes,Total	150	151	101	68	129

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110470-04
RunID: VARE_001120A-480121 Units: ug/Kg
Analysis Date: 11/20/2000 12:00 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	18	91.1	20	18	88.7	2.67	34	35	139
Ethylbenzene	ND	20	18	90.2	20	17	86.4	4.32	35	31	137
Toluene	ND	20	19	88.1	20	18	83.7	5.12	28	31	137
m,p-Xylene	ND	40	38	92.0	40	36	87.9	4.53	38	19	144
o-Xylene	ND	20	19	90.9	20	18	87.3	4.04	57	25	139

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210.3B

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 00110562
Lab Batch ID: R24887

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110470-04
RunID: VARE_001120A-480121 Units: ug/Kg
Analysis Date: 11/20/2000 12:00 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
ylenes,Total	ND	60	57	95.0	60	54	90.0	5.41	38	19	144

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210.3B

Analysis: Gasoline Range Organics
Method: CA_GRO
WorkOrder: 00110562
Lab Batch ID: R24986

Method Blank

RunID: VARE_001120C-482055 Units: mg/Kg
Analysis Date: 11/20/2000 14:01 Analyst: TM

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110562-01A	SP-1-4-COMP

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	1.0
Surr: 1,4-Difluorobenzene	102.7	72-153
Surr: 4-Bromofluorobenzene	105.7	51-149

Laboratory Control Sample (LCS)

RunID: VARE_001120C-482047 Units: mg/Kg
Analysis Date: 11/20/2000 10:49 Analyst: TM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.89	89	53	137

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110470-04
RunID: VARE_001120C-482050 Units: mg/Kg
Analysis Date: 11/20/2000 12:52 Analyst: TM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
asoline Range Organics	ND	0.9	0.74	82.6	0.9	0.82	91.3	10.0	50	36	163

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

TM0210.3B

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 00110562
Lab Batch ID: 8698-T

Method Blank

RunID: TJAT_001122C-483276 Units: mg/Kg
Analysis Date: 11/23/2000 3:44 Analyst: EG
Preparation Date: 11/20/2000 10:00 Prep By: MR Method SW3050B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110562-01A	SP-1-4-COMP

Analyte	Result	Rep Limit
Lead	ND	0.5

Laboratory Control Sample (LCS)

RunID: TJAT_001122C-483277 Units: mg/Kg
Analysis Date: 11/23/2000 3:51 Analyst: EG
Preparation Date: 11/20/2000 10:00 Prep By: MR Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	119	104	N/A	90.9	148

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110562-01
RunID: TJAT_001122C-483279 Units: mg/Kg
Analysis Date: 11/23/2000 4:09 Analyst: EG
Preparation Date: 11/20/2000 10:00 Prep By: MR Method SW3050B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	5.8	100	85.2	79.4	100	85.6	79.8	0.517	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

Sample Receipt Checklist

And

Chain of Custody

EXXON COMPANY, USA.

(West Coast)

CHAIN OF CUSTODY RECORD NO. ________ Page 1 of 1

Exxon Engineer: Darin Rouse Phone: (925) 246-876
Consultant Co. Name: ETIC Contact: Ted Moise
Address: 144 Mayhew Way Fax: (925) 977-7915
Walnut Creek, CA 94596
RAS #: 7-210 Facility/State ID # (TN Only):
AFE # (Terminal Only): Consultant Project #: TM0210.3B
Location: 7840 Amador Valley Blvd (City) Dublin (State) CA
☒ EE ☐ C&M ☐ SDT
Consultant Work Release #: 20003669
Sampled By: Hamidou Barry

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX) — OTHER

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX H_2O	MATRIX SOIL	MATRIX AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE 2"X6" liners	TPH/GC 8015 GRO ☒ 8015 DRO ☐	BTEX 8020 ☒ 602 ☐	MTBE 8020 ☐ 8260 ☐	OXYGENATES (7) 8260 ☐ 8260 ☐	O&G IR 413.1 ☐ GRAV. 413.2 ☐	VOL. 8260 ☐ 624 ☐	SEMI-VOL 8270 ☐ 625 ☐	PNA/PAH 8100 ☐ 8310 ☐ 8270 ☐	PCB/PEST 8081/8082 ☐ PCB ONLY ☐	TCLP FULL ☐ VOA ☐ SEMI-VOA ☐ PEST ☐ HERB ☐	METALS, TOTAL ☐ METALS, TCLP ☐	LEAD, TOTAL 239.1 ☐ 7421 ☐ LEAD, TCLP ☐	LEAD, DISSOLVED ☐ LEAD TOTAL ☒ 6010B	REACTIVITY ☐ CORROSIVITY ☐ FLASH POINT ☐	* PURGEABLE HYDROCARBON 8010 ☒ 601 ☐	TPH/IR 418.1 ☐	TOX/TOH ☐		
SP1	11/15/00	1215	X			X			None	1	X	X	X											X		X				
SP2	11/15/00	1220	X			X			X	1	X	X	X											X		X				
SP3	11/15/00	1225	X			X			X	1	X	X	X											X		X				
SP4	11/15/00	1230	X			X			X	1	X	X	X											X		X				

TAT
24 HR. ___* 72 HR. ___*
48 HR. ___* 96 HR. ___*
8 Business ___ *Contact US Prior to Sending Sample
Other ___

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify)
790402473615 65 lb 50 4°

REMARKS: Composit all the samples into one sample in the lab for analysis.
*Run 8010 only if TPH-g is > 50 ppm

QA/QC Level
Standard ☒ CLP ☐ Other ☐

SPECIAL REPORTING REQUIREMENTS (Specify)
PDF ☐ ☐ EDD
FAX ☐ ☒ FAX C-O-C W/REPORT

LAB USE ONLY Lot # Storage Location
100 (500)
WORK ORDER #: 0011056 2 LAB WORK RELEASE #:

CUSTODY RECORD

Relinquished	Date	Time	Received By
Relinquished By Sampler: [signature]	11/16/00		Received By:
Relinquished:			Received By:
Relinquished:			Received By: [signature] 11/17/00 1000

Way Bill #: Cooler Temp:

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	00110562	Received by:	Stelly, D'Anna
Date and Time Received:	11/17/00 10:00:00 AM	Carrier name:	FedEx
Temperature:	4		

Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes	☐	No	☐	Not Present ☑
Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present ☑
Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Samples in proper container/bottle?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	
All samples received within holding time?	Yes	☑	No	☐	
Container/Temp Blank temperature in compliance?	Yes	☑	No	☐	
Water - VOA vials have zero headspace?	Yes	☐	No	☐	Not Present ☑
Water - pH acceptable upon receipt?	Yes	☐	No	☑	

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Received
DEC 11 2000
ETIC Engineering Inc.

EXXON Company U.S.A.

Certificate of Analysis Number:
00110635

Report To:		Project Name:	UP0210.1B
ETIC Engineering Inc.		Site:	7-0210,20003669
John Ortega		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20009102
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

This Report Contains A Total Of 12 Pages

Excluding This Page

And

Chain Of Custody

12/5/00
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Case Narrative for:

EXXON Company U.S.A.

Certificate of Analysis Number:

00110635

Report To:		Project Name:	UP0210.1B
ETIC Engineering Inc.		Site:	7-0210,20003669
John Ortega		Site Address:	7840 Amador Valley Blvd
144 Mayhew Way			Dublin CA
Walnut Creek		PO Number:	LWR#20009102
California		State:	California
94596-		State Cert. No.:	1903
ph: (925) 977-7914	fax: (925) 977-7915	Date Reported:	

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like " matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Sonia West

West, Sonia
Senior Project Manager

12/5/00
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

00110635

Report To: ETIC Engineering Inc.
John Ortega
144 Mayhew Way

Walnut Creek
California
94596-
ph: (925) 977-7914 fax: (925) 977-7915

Fax To: ETIC Engineering Inc.
John Ortega fax : (925) 977-7915

Project Name: UP0210.1B
Site: 7-0210,20003669
Site Address: 7840 Amador Valley Blvd
Dublin CA
PO Number: LWR#20009102
State: California
State Cert. No.: 1903
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	00110635-01	Water	11/17/00 1:15:00 PM	11/21/00 10:00:00 AM		☐
MW-6	00110635-02	Water	11/17/00 1:50:00 PM	11/21/00 10:00:00 AM		☐
MW-7	00110635-03	Water	11/17/00 2:20:00 PM	11/21/00 10:00:00 AM		☐
MW-7	00110635-03	Water	11/17/00 2:20:00 PM	11/21/00 10:00:00 AM		☑

Sonia West

12/5/00

West, Sonia
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW-5 **Collected:** 11/17/00 1:15:00 **SPL Sample ID:** 00110635-01

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: ug/L**		
Gasoline Range Organics	240		50	1		11/21/00 22:37	DL	481656
Surr: 1,4-Difluorobenzene	98.7	%	62-144	1		11/21/00 22:37	DL	481656
Surr: 4-Bromofluorobenzene	124	%	44-153	1		11/21/00 22:37	DL	481656
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		0.5	1		11/21/00 22:37	DL	481500
Ethylbenzene	ND		0.5	1		11/21/00 22:37	DL	481500
Methyl tert-butyl ether	1500		12	25		11/22/00 0:29	DL	481503
Toluene	ND		0.5	1		11/21/00 22:37	DL	481500
m,p-Xylene	0.76		0.5	1		11/21/00 22:37	DL	481500
o-Xylene	1.7		0.5	1		11/21/00 22:37	DL	481500
Xylenes,Total	2.46		0.5	1		11/21/00 22:37	DL	481500
Surr: 1,4-Difluorobenzene	96.6	%	72-137	25		11/22/00 0:29	DL	481503
Surr: 1,4-Difluorobenzene	99.1	%	72-137	1		11/21/00 22:37	DL	481500
Surr: 4-Bromofluorobenzene	103	%	48-156	1		11/21/00 22:37	DL	481500
Surr: 4-Bromofluorobenzene	94.3	%	48-156	25		11/22/00 0:29	DL	481503
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**		**Units: ug/L**		
Methyl tert-butyl ether	1600		100	20		11/28/00 0:20	LT	487295
Surr: 1,2-Dichloroethane-d4	100	%	62-119	20		11/28/00 0:20	LT	487295
Surr: 4-Bromofluorobenzene	100	%	78-123	20		11/28/00 0:20	LT	487295
Surr: Toluene-d8	100	%	74-122	20		11/28/00 0:20	LT	487295

Sonia West

~~West, Sonia~~
Project Manager

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/5/00 12:55:31 PM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 11/17/00 1:50:00 **SPL Sample ID:** 00110635-02

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				**MCL**	**CA_GRO**		**Units: ug/L**		
Gasoline Range Organics	ND		50		1		11/21/00 22:12	DL	481655
Surr: 1,4-Difluorobenzene	96.0	%	62-144		1		11/21/00 22:12	DL	481655
Surr: 4-Bromofluorobenzene	87.7	%	44-153		1		11/21/00 22:12	DL	481655
PURGEABLE AROMATICS				**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		0.5		1		11/21/00 22:12	DL	481499
Ethylbenzene	ND		0.5		1		11/21/00 22:12	DL	481499
Methyl tert-butyl ether	270		0.5		1		11/21/00 22:12	DL	481499
Toluene	ND		0.5		1		11/21/00 22:12	DL	481499
m,p-Xylene	ND		0.5		1		11/21/00 22:12	DL	481499
o-Xylene	ND		0.5		1		11/21/00 22:12	DL	481499
Xylenes,Total	ND		0.5		1		11/21/00 22:12	DL	481499
Surr: 1,4-Difluorobenzene	101	%	72-137		1		11/21/00 22:12	DL	481499
Surr: 4-Bromofluorobenzene	96.2	%	48-156		1		11/21/00 22:12	DL	481499
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**		**Units: ug/L**		
Methyl tert-butyl ether	260		25		5		11/28/00 0:45	LT	487296
Surr: 1,2-Dichloroethane-d4	100	%	62-119		5		11/28/00 0:45	LT	487296
Surr: 4-Bromofluorobenzene	104	%	78-123		5		11/28/00 0:45	LT	487296
Surr: Toluene-d8	104	%	74-122		5		11/28/00 0:45	LT	487296

Sonia West

~~West, Sonia~~

Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID MW-7 **Collected:** 11/17/00 2:20:00 **SPL Sample ID:** 00110635-03

Site: 7-0210,20003669

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: ug/L**		
Gasoline Range Organics	ND		50	1		11/21/00 21:47	DL	481654
Surr: 1,4-Difluorobenzene	95.7	%	62-144	1		11/21/00 21:47	DL	481654
Surr: 4-Bromofluorobenzene	87.3	%	44-153	1		11/21/00 21:47	DL	481654
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		0.5	1		11/21/00 21:47	DL	481498
Ethylbenzene	ND		0.5	1		11/21/00 21:47	DL	481498
Methyl tert-butyl ether	ND		0.5	1		11/21/00 21:47	DL	481498
Toluene	ND		0.5	1		11/21/00 21:47	DL	481498
m,p-Xylene	ND		0.5	1		11/21/00 21:47	DL	481498
o-Xylene	ND		0.5	1		11/21/00 21:47	DL	481498
Xylenes,Total	ND		0.5	1		11/21/00 21:47	DL	481498
Surr: 1,4-Difluorobenzene	99.1	%	72-137	1		11/21/00 21:47	DL	481498
Surr: 4-Bromofluorobenzene	96.4	%	48-156	1		11/21/00 21:47	DL	481498

Sonia West

~~West, Sonia~~
Project Manager

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/5/00 12:55:32 PM

Quality Control Documentation

12/5/00 12:55:33 PM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.1B

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 00110635
Lab Batch ID: R24962

Method Blank

RunID: HP_U_001121D-481494 Units: ug/L
Analysis Date: 11/21/2000 19:14 Analyst: DL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110635-01A	MW-5
00110635-02A	MW-6
00110635-03A	MW-7

Analyte	Result	Rep Limit
Benzene	ND	0.50
Ethylbenzene	ND	0.50
Methyl tert-butyl ether	ND	0.50
Toluene	ND	0.50
m,p-Xylene	ND	0.50
o-Xylene	ND	0.50
Xylenes,Total	ND	0.50
Surr: 1,4-Difluorobenzene	100.1	72-137
Surr: 4-Bromofluorobenzene	96.5	48-156

Laboratory Control Sample (LCS)

RunID: HP_U_001121D-481493 Units: ug/L
Analysis Date: 11/21/2000 17:58 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	49	97	70	130
Ethylbenzene	50	53	106	70	130
Methyl tert-butyl ether	50	45	89	70	130
Toluene	50	51	103	70	130
m,p-Xylene	100	110	106	70	130
o-Xylene	50	53	105	70	130
Xylenes,Total	150	163	109	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110635-03
RunID: HP_U_001121D-481495 Units: ug/L
Analysis Date: 11/21/2000 19:40 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	30	30	100	30	29	97.9	2.25	21	32	164
Ethylbenzene	ND	30	30	99.4	30	29	97.0	2.45	19	52	142
ethyl tert-butyl ether	ND	30	30	101	30	29	97.1	3.51	20	39	150

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.1B

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 00110635
Lab Batch ID: R24962

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110635-03
RunID: HP_U_001121D-481495 Units: ug/L
Analysis Date: 11/21/2000 19:40 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
oluene	ND	30	30	99.1	30	29	96.5	2.61	20	38	159
m,p-Xylene	ND	60	57	94.4	60	60	99.8	5.54	17	53	144
o-Xylene	ND	30	30	101	30	29	96.9	3.98	18	53	143
ylenes,Total	ND	90	87	96.7	90	89	98.9	2.27	18	53	144

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.1B

Analysis: Gasoline Range Organics
Method: CA_GRO
WorkOrder: 00110635
Lab Batch ID: R24975

Method Blank

RunID: HP_U_001121E-481651 Units: mg/L
Analysis Date: 11/21/2000 19:14 Analyst: DL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110635-01A	MW-5
00110635-02A	MW-6
00110635-03A	MW-7

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.050
Surr: 1,4-Difluorobenzene	96.7	62-144
Surr: 4-Bromofluorobenzene	87.0	44-153

Laboratory Control Sample (LCS)

RunID: HP_U_001121E-481650 Units: mg/L
Analysis Date: 11/21/2000 18:49 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.86	86	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110635-02
RunID: HP_U_001121E-481652 Units: mg/L
Analysis Date: 11/21/2000 20:31 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	0.9	0.83	92.3	0.9	0.83	92.3	.0602	36	36	160

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.1B

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 00110635
Lab Batch ID: R25249

Method Blank

RunID: N_001127C-487298 Units: ug/L
Analysis Date: 11/27/2000 19:10 Analyst: LT

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00110635-01B	MW-5
00110635-02B	MW-6

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	5.0
Surr: 1,2-Dichloroethane-d4	96.0	62-119
Surr: 4-Bromofluorobenzene	106.0	78-123
Surr: Toluene-d8	104.0	74-122

Laboratory Control Sample (LCS)

RunID: N_001127C-487284 Units: ug/L
Analysis Date: 11/27/2000 14:52 Analyst: LT

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	44	88	61	145
Benzene	50	54	108	76	127
Chlorobenzene	50	50	100	75	130
Toluene	50	54	108	76	125
Trichloroethene	50	45	90	71	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00110589-02
RunID: N_001127C-487289 Units: ug/L
Analysis Date: 11/27/2000 21:19 Analyst: LT

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	250	190	76	250	210	84	10	14	38	172
Benzene	ND	250	260	104	250	270	108	4	11	66	134
Chlorobenzene	ND	250	240	96	250	240	96	0	13	67	115
Toluene	ND	250	270	103	250	280	107	4	13	59	125
Trichloroethene	ND	250	210	84	250	220	88	5	14	61	134

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as

Sample Receipt Checklist

And

Chain of Custody

0110635

EXXON COMPANY, USA.

(West Coast)

CHAIN OF CUSTODY RECORD NO. ______ Page 1 of 1

Exxon Engineer: DARIN ROUSH Phone: (925) 246-8768
Consultant Co. Name: ETIC ENG. Contact: JOHN ORTEGA
Address: 144 MAYHEW WAY Fax: (925) 977-7915
WALNUT CREEK, CA 94596
RAS #: 7-0210 Facility/State ID # (TN Only):
AFE # (Terminal Only): Consultant Project #: UP0210.1B
Location: 7840 AMADOR VALLEY BLVD DUBLIN (State) CA
☒ EE ☐ C&M ☐ SDT
Consultant Work Release #: 20003669
Sampled By: KEIR JONES

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX H2O	SOIL	AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE	TPH/GC 8015 GRO ☒ 8015 DRO ☐	BTEX 8020 ☒ 602 ☐	MTBE 8020 ☒ 8260 ☐ (confirmation all hits by 8260)	OXYGENATES (7) 8260 ☐	O&G IR 413.1 ☐ GRAV. 413.2 ☐	VOL. 8260 ☐ 624 ☐	SEMI-VOL 8270 ☐ 625 ☐	PNA/PAH 8100 ☐ 8310 ☐ 8270 ☐	PCB/PEST 8081/8082 ☐ PCB ONLY ☐	TCLP FULL ☐ VOA ☐ SEMI-VOA ☐ PEST ☐ HERB ☐	METALS, TOTAL ☐ METALS, TCLP ☐	LEAD, TOTAL 239.1 ☐ 7421 ☐ LEAD, TCLP ☐	LEAD, DISSOLVED ☐ LEAD TOTAL ☐	REACTIVITY ☐ CORROSIVITY ☐ FLASH POINT ☐	PURGEABLE HYDROCARBON 8010 ☐ 601 ☐	TPH/IR 418.1 ☐	TOX/TOH ☐	OTHER
MW-5	11/17	1315			X				HCl	6	40ml	X	X	X															
MW-6	11/17	1350			X				HCl	6	40ml	X	X	X															
MW-7	11/17	1420			X				HCl	6	40ml	X	X	X															

RUSH

TAT
24 HR. ____* 72 HR. ____*
48 HR. ____* 96 HR. ____*
8 Business ☒ *Contact US Prior to Sending Sample
Other ____

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify)
38

REMARKS:
790404193541
50 501b

SPECIAL REPORTING REQUIREMENTS (Specify)
PDF ☐ ☐ EDD
FAX ☐ ☒ FAX C-O-C W/REPORT

LAB USE ONLY Lot # Storage Location
350
WORK ORDER #: 0110635 LAB WORK RELEASE #:

QA/QC Level
Standard ☒ CLP ☐ Other ☐

CUSTODY RECORD		Date	Time	
	Relinquished By Sampler: [signature], ETIC ENG	11/17/00		Received By:
	Relinquished:	Date	Time	Received By:
	Relinquished:	Date	Time	Received By: Way Bill #: [signature] 11/21/00 Cooler Temp: 10:00

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	00110635	Received by:	Stelly, D'Anna
Date and Time Received:	11/21/00 10:00:00 AM	Carrier name:	FedEx
Temperature:	3		

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Present ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	