



GETTLER-RYAN INC.

TRANSMITTAL

TO: Mr. David B. De Witt
 Tosco Marketing Company
 2000 Crow Canyon Place, Suite 400
 San Ramon, California 94583

DATE: September 7, 1999
 PROJ. #: 140101.02-3
 SUBJECT: Report
 Tosco 76 Branded Facility
 No. 6419
 6401 Dublin Boulevard
 Dublin, California

FROM:

Clyde J. Galantine
 Project Geologist
 Gettler-Ryan Inc.
 6747 Sierra Court, Suite J
 Dublin, California 94568

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cc: Eva Chu, Alameda County Health Care Services Agency

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ENVIRONMENTAL PROTECTION



GETTLER-RYAN INC.

WELL INSTALLATION REPORT

at

Tosco 76 Branded Facility No. 6419
6401 Dublin Boulevard
Dublin, California

Report No. 140101.02

Prepared for:

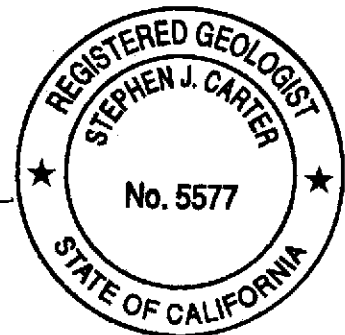
Mr. David De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Prepared by:

Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

Clyde J. Galantine
Project Geologist

Stephen J. Carter
Senior Geologist
R.G. 5577



September 7, 1999

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WELL INSTALLATION REPORT

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Tosco 76 Branded Facility No. 6419
6401 Dublin Boulevard
Dublin, California

Report No. 140101.02

INTRODUCTION

This report summarizes the results of the recent groundwater monitoring well installation performed by Gettler-Ryan Inc. (GR) at the subject site. The purpose of this subsurface investigation was to further assess groundwater conditions downgradient of on-site monitoring well MW-1. The work performed included: drilling four soil borings and constructing groundwater monitoring wells in each of the borings; collecting soil samples for description and chemical analysis; monitoring, developing and sampling the newly installed wells, monitoring the three existing wells; surveying new and existing wells; submitting soil and groundwater samples for chemical analysis; and preparing this report. This work was performed at the request of Tosco Marketing Company (Tosco) and in response to a October 16, 1998 letter from the Alameda County Health Care Services Agency (ACHCSA). This work was originally proposed in the GR Report No. 140101.02-1, *Work Plan for Monitoring Well Installation*, dated March 22, 1999 and approved by ACHCSA in a letter dated March 29, 1999.

SITE DESCRIPTION AND BACKGROUND

The subject site is an active service station located on the western corner of the intersection of Dublin Boulevard and Dougherty Road in Dublin, California (Figure 1). The site is bounded to the southeast by Dublin Boulevard, to the northeast by Dougherty Road, and to the northwest and southwest by a shopping center parking lot. Properties in the immediate site vicinity are used for a mix of commercial purposes that include service stations and shopping facilities. The site is located at an approximate elevation of 330 feet above sea level.

Current aboveground site facilities consist of two dispenser islands under a canopy, car wash, and a station building/convenience store. Two 12,000-gallon gasoline underground

storage tanks (USTs) are located in the common pit immediately east of the station building. Pertinent site features are shown on Figure 2

PREVIOUS ENVIRONMENTAL WORK

On September 7, 1993, two 10,000-gallon gasoline USTs, one 550-gallon waste oil UST, one 6,000-gallon underground septic tank, and the associated product piping were removed from the site. Groundwater was observed entering the UST excavation at a depth of approximately 14 feet below ground surface (bgs). Two 12,000-gallon and one 520-gallon double-wall glasteel USTs were installed in the same pit immediately northeast of the canopy and dispenser islands. Seven soil samples were collected from the sidewalls and bottom of the gasoline UST excavation at depths ranging from 13.5 to 17 feet bgs and analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and total lead. Petroleum hydrocarbon concentrations ranged from not detected to 2.6 ppm of TPHg and 0.11 ppm of benzene.

Eight soil samples were collected from beneath the dispenser islands at depths of 2.5 and 5.5 feet bgs. These samples were reported as not detected for TPHg and BTEX. Total lead concentrations in these samples ranged from 4.8 to 14 parts per million (ppm). Seven soil samples were collected from beneath the product lines at depths ranging from 3 to 7 feet bgs and analyzed for TPHg, BTEX, and total lead. Petroleum hydrocarbon concentrations ranged from not detected to 9.7 ppm of TPHg and not detected to 0.15 ppm of benzene.

Two soil samples were collected from beneath the former septic tank at a depth of 10 feet bgs and was reported as not detected for TPHg and BTEX. One soil sample was collected from beneath the former waste oil UST at a depth of 8 feet bgs and analyzed for TPHg, BTEX, Total Petroleum Hydrocarbons as diesel (TPHd), Oil and Grease (O&G), volatile organic compounds (VOCs) and 5 ICAP metals. The sample contained 6.8 ppm of TPHg, 0.050 ppm of benzene, allowable concentrations of various metals, and was not detected for TPHd, O&G, and VOCs (Kaprealian Engineering Inc., 1993).

Approximately 7,000 gallons of groundwater were removed from the UST excavation on September 10, 1993 by H&H Environmental Services (H&H). After purging, groundwater stabilized at approximately 15 feet bgs, at which time groundwater sample W1 was collected. The sample was reported to contain 2,600 parts per billion (ppb) of TPHg, 33 ppb of benzene, 530 ppb of TPHd, allowable concentrations of 5 metals, and was reported as not detected for O&G and VOCs. On September 13 and 14, 1993, approximately 12,000 gallons of groundwater was removed from the excavation by H&H. Groundwater

sample W2 was collected from the excavation after groundwater had stabilized at approximately 12 feet bgs and was analyzed for TPHg and BTEX. The sample contained 740 ppb of TPHg and 14 ppb of benzene. A sheen was observed on the surface of the groundwater in the southwest corner of the excavation (Kaprealian Engineering Inc., 1993a).

As part of the UST replacement activities, approximately 850 cubic yards of soil was excavated and stockpiled on-site and sampled for acceptance at an appropriate disposal facility. Approximately 750 cubic yards of soil was transported to The Browning Ferris Incorporated (BFI) Vasco Road Landfill in Livermore, California. In addition, approximately 100 cubic yards of soil was transported to Forward, Inc. Landfill in Stockton, California for disposal (Kaprealian Engineering Inc., 1993b).

Three on-site 2-inch diameter groundwater monitoring wells (MW-1, MW-2, and MW-3 on Figure 2) were installed in February 1994. Ten soil samples were collected during drilling at depths ranging from 5 to 17 feet bgs and analyzed for TPHg and BTEX. The samples were reported as not detected for TPHg and BTEX. The initial groundwater samples from MW-1 through MW-3 were analyzed for TPHg and BTEX. Hydrocarbon concentrations ranged from not detected (MW-2) to 1,800 ppb (MW-1) of TPHg and not detected (MW-2 and MW-3) to 17 ppb (MW-1) of benzene. In addition, sample MW-1 was reported to contain 810 ppb of a TPHd. Depth to groundwater was reported at between 7.09 and 7.93 feet below top of casing (TOC)(Kaprealian Engineering, Inc., 1994).

In July 1998, Environmental Resolutions, Inc. (ERI) conducted a four day extended soil vapor extraction test at the site. Based on photoionization detector (PID) readings from each well, monitoring well MW-1 was selected as the extraction well. During the course of the test, MtBE concentrations in the vapor stream of MW-1 decreased from 1,700 to 47 micrograms per liter. ERI estimated that approximately 0.53 pounds of TPHg and 6.5 pounds of MtBE (approximately 1 gallon of gasoline/additive) were extracted during the four day test. Vacuum measurements obtained from MW-2 and MW-3 during the test indicated that the effective radius of influence is likely to be less than 40 feet (ERI, 1998).

Groundwater has been historically reported at approximately 5 to 10 feet below ground surface (bgs). Petroleum hydrocarbon concentrations in groundwater have ranged from not detected to 9,200 ppb (MW-1) of TPHg, not detected to 130 ppb (MW-1) of benzene, and not detected to 140,000 ppb (MW-1) of MtBE. Groundwater flow direction has been reported as variable then becoming predominantly southwest for the quarterly and semi-annual sampling events dating back to March 1994 (MPDS, 1994 through 1997, GR, 1998 and 1999).

REGIONAL GEOLOGY

The subject site is located within the Dublin Sub-basin of the Livermore Valley Groundwater Basin, as defined by the Alameda County Flood Control and Water Conservation District (Zone 7), and by the California Department of Water Resources Bulletin 118-2. The site vicinity is underlain by Holocene age fine grained alluvium (Qhaf) that is described as unconsolidated, plastic, moderately to poorly sorted carbonaceous silt and clay materials that are generally less than 10 feet thick. The site is situated less than 0.5 miles from two mapped geologic contacts separating the Qhaf from Late Pleistocene alluvial deposits (Qpa) and Holocene medium-grained alluvium (Qham). The Qpa sequence consists of weakly consolidated slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand, and gravel, with a thickness of at least 150 feet. The younger Qham deposits consist of unconsolidated, moderately sorted, permeable fine sand, silt, and clayey silt with a few thin beds of coarse sand, with a maximum thickness of 12 feet in the vicinity of the site (United States Geological Survey, 1979). The site is approximately 0.6 miles west of the Pleasanton Fault and 1.4 miles east of the Calaveras Fault (California Division of Mines and Geology, 1990). The nearest surface water is the Chabot Canal, located approximately 1,600 feet east of the site.

FIELD ACTIVITIES

Field work was performed in accordance with the GR Site Safety Plan No. 140101.02, dated May 10, 1999. GR Field Methods and Procedures are included in Appendix A. Underground Service Alert (USA) was notified prior to beginning drilling activities and a utility locator service was employed to clear each drilling location. Drilling and well installation was performed under Zone 7 Drilling Permit No. 99076. A copy of the well drilling permit is included in Appendix B.

Four on-site soil borings were drilled June 10, 1999 and completed as groundwater monitoring wells MW-4 through MW-7. The wells were each installed to a total depth of approximately 19 feet bgs. Locations of the wells are shown on Figure 2.

The four borings were drilled using a track-mounted drill rig equipped with direct push continuous sampling equipment and 8-inch diameter hollow stem augers. Drilling was performed by Gregg Drilling and Testing Inc. of Martinez, California (#C57 485165). A GR geologist observed the drilling and well installation activities, described the encountered soil, and prepared a log of each boring. Logs of the soil borings are included in Appendix B.

Soil cuttings generated during drilling were placed in drums and stored at the site pending disposal. Sample S-1 (comp) was collected from the stockpiled soil cuttings and submitted to the laboratory to be composited and analyzed as one sample. Stockpile sampling procedures are presented in Appendix A.

Well Installation

Each well was constructed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and 0.02-inch machine-slotted well screen. The annular space around the well screen in each well boring was packed with Lonestar #3 sand to approximately one foot above the top of the well screen. The sandpack in each well was followed by a bentonite transition seal and then neat cement. The top of each well is protected by a vault box, locking well cap, and lock. Well construction details are included on the boring logs in Appendix B.

Well Monitoring, Development, and Sampling

Monitoring, development, and sampling of the four newly installed wells were performed by GR personnel. Copies of the well development and field monitoring data sheets are included in Appendix C.

The wells were developed and sampled on May 21, 1999. Depth to groundwater in all on-site wells were measured and each well checked for the presence of floating product prior to development. After the newly installed wells were properly developed, groundwater samples were collected in appropriate containers supplied by the laboratory. Purge water generated during development and sampling procedures was transported to the Tosco Refinery in Rodeo, California for disposal. Monitoring data are summarized in Table 1.

Wellhead Survey

Following installation, the well casing elevations were surveyed by Kier and Wright Engineers and Surveyors, Inc. of Pleasanton, California (California Land Surveyor No. 5944). Top of casing and vault box elevations were measured relative to MSL, and the horizontal locations of the wells surveyed. Well casing elevations are summarized in Table 1. A copy of the surveyor's report is included in Appendix D.

SUBSURFACE CONDITIONS

Approximately 6 to 12 feet of fill material consisting of clays, gravels, and sands overlie the native soil at the site. The unsaturated (vadose) zone is comprised predominantly of clays and silts. The saturated zone is comprised of clay with lenses of sand and clayey or sandy gravel. Groundwater was initially encountered at approximately 12 feet bgs.

Prior to well development and groundwater sample collection on May 21, 1999, GR personnel measured the depth to groundwater in wells MW-1 through MW-7 at 5.95 to 6.43 feet below top of well casing. Floating product or a product sheen was not observed in these wells. These data were used to construct a Potentiometric Map (Figure 3). Based on these data, shallow groundwater beneath the subject site flows southwest at a calculated hydraulic gradient of 0.004.

CHEMICAL ANALYTICAL RESULTS

A total of four soil samples from the monitoring well borings, one composite sample from the stockpiled drill cuttings, and four groundwater samples were collected and submitted for chemical analysis. Analyses were performed by Sequoia Analytical of Walnut Creek, California (ELAP #1271). Copies of the laboratory reports and chain-of-custody forms are included in Appendix E.

Chemical Analytical Procedures

Selected soil samples from the well borings were analyzed for TPHg, BTEX, and MtBE according to CA/LUFT/Environmental Protection Agency (EPA) Method 8020. The soil stockpile sample was analyzed for TPHg, BTEX, and lead according to EPA Methods 3050BM/6010. Groundwater samples were also analyzed for TPHg, BTEX, and MtBE by EPA Methods 8015 Modified/8020 and six oxygenate compounds [Ethanol, t-Butanol, MtBE, Di-Isopropyl Ether (DIPE), Ethyl-t-Butyl Ether (ETBE), and t-Amyl Methyl Ether (TAME)] by EPA Method 8260. Groundwater chemical analytical data are summarized in Table 1. Soil chemical analytical data are summarized in Table 2.

Soil Chemical Analytical Results

Petroleum hydrocarbons were not detected in the four soil samples collected from the soil borings except for 0.33 ppm of MtBE in a sample from well boring MW-6 at 12 feet bgs, and 0.010 ppm of benzene and 0.0080 ppm of xylenes detected in a sample from well boring MW-7 at 6 feet bgs.

Groundwater Chemical Analytical Results

TPHg and BTEX were not detected in the groundwater samples from wells MW-4, MW-5, MW-6 and MW-7. MtBE was detected in each groundwater sample at concentrations ranging from 960 and 910 ppb by EPA Methods 8020 and 8260 in MW-4, 32 and 33 ppb EPA Methods 8020 and 8260 in MW-5, 2,200 and 2,300 ppb EPA Methods 8020 and 8260 in MW-6, and 22 ppb by both EPA Methods 8020 and 8260 in MW-7. These data were used to construct a groundwater concentration map (Figure 4).

Stockpile Chemical Analytical Results

Petroleum hydrocarbons were not detected in soil stockpile sample US-1(comp) except for 0.16 ppm of MtBE. The sample also contained 14 ppm of lead.

RISK ASSESSMENT SOIL SAMPLE

As requested by the ACHSCA in their March 29, 1999 letter, a soil sample was collected from well boring MW-6 at a depth of 6.5 feet bgs, and transported to PTS Laboratories, Inc. of Santa Fe Springs, California for analysis. The sample was analyzed for soil parameters necessary to perform a Risk Based Corrective Action (RBCA) analysis. The laboratory data are included in Appendix F.

WASTE DISPOSAL

Approximately 221 gallons of waste water generated by well development and sampling procedures were removed from the site by GR on May 21, 1999, and transported to the Tosco Refinery in Rodeo, California, for treatment. Approximately 1.88 tons of soil (drill cuttings) were removed from the site by Denbeste Transportation, Inc. of Windsor, California and transported to the Forward Incorporated facility in Manteca, California for disposal on June 15, 1999. A copy of the Forward disposal confirmation forms are included in Appendix G.

DISCUSSION

Based on the chemical analytical results, TPHg and BTEX have been delineated, and the extent of MtBE in groundwater is not delineated to the southwest, south, and southeast.

GR recommends additional groundwater monitoring and sampling to confirm the initial groundwater flow direction and analytical data obtained from the newly installed wells. Semi-annual groundwater monitoring and sampling of all wells will be performed in the third quarter of 1999. The sampling frequency of MW-1 and MW-2 (currently sampled annually in February) will be increased to semi-annual for TPHg, BTEX, MtBE by Methods 8015/8020. In addition, groundwater sample MW-1 will be analyzed for MtBE by EPA Method 8260.

DISTRIBUTION

GR recommends that a copy of this report be forwarded to Ms. eva chu of the Alameda County Health Care Services Agency at 1131 Harbor Bay Parkway, Suite 250, Alameda, California 94502-6577.

REFERENCES

California Division of Mines and Geology, 1990, Geologic Map of the San Francisco - San Jose Quadrangle, Map No. 5A (Geology).

Environmental Resolutions Inc., 1998, Extended Soil Vapor Extraction Test at Tosco 76 Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: Report No. ERI 233004.L04 dated September 24, 1998.

Gettler-Ryan Inc., 1998-1999, Semi-Annual Groundwater Monitoring and Sampling Reports for Tosco (Unocal) Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: G-R Job #180021, various dates.

Kaprealian Engineering Inc., 1993, Soil Sampling Report for Unocal Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: Report No. KEI-P93-0401.R1 dated October 15, 1993.

Kaprealian Engineering Inc., 1993a, Sampling and Disposal of the Stockpiled Soil at Unocal Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: Report No. KEI-P93-0401.R3 dated October 15, 1993.

Kaprealian Engineering Inc., 1994, Preliminary Ground Water Investigation at Unocal Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: Report No. KEI-P93-0401.R5 dated April 7, 1994.

MPDS Services, Inc., 1994-1997, Quarterly or Semi-Annual Data Reports for Unocal Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California: Reports No. MPDS-UN6419, various dates.

United States Geological Survey, 1979, Flatland Deposits of the San Francisco Bay Region, California - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning, Professional Paper 943.

TABLE 1 - GROUNDWATER MONITORING AND CHEMICAL ANALYTICAL DATA

Tosco 76 Branded Facility No. 6419

6401 Dublin Boulevard

Dublin, California

Sample No.	Sample Date	Total Well Depth (ft.)	Well Elevation ¹ (ft. MSL)	Depth to Water (ft.)	Floating Product (ft.)	Groundwater Elevation (ft. MSL)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MtBE by 8020 (ppb)	MtBE by 8260 (ppb)
MW-1	5/21/99	19	330.21	5.95	0.0	324.26	--	--	--	--	--	--	--
MW-2	5/21/99	19	330.30	5.98	0.0	324.32	--	--	--	--	--	--	--
MW-3	5/21/99	19	330.49	6.16	0.0	324.33	--	--	--	--	--	--	--
MW-4	5/21/99	19	330.36	6.43	0.0	323.93	ND	ND	ND	ND	ND	960	910 ²
MW-5	5/21/99	19	330.20	5.99	0.0	324.21	ND	ND	ND	ND	ND	32	33 ²
MW-6	5/21/99	19	330.49	6.24	0.0	324.25	ND	ND	ND	ND	ND	2,200	2,300 ²
MW-7	5/21/99	19	330.43	6.13	0.0	324.30	ND	ND	ND	ND	ND	22	22 ²
Trip Blank	---	---	---	---	---	---	ND	ND	ND	ND	ND	ND	--

EXPLANATION:

ND = not detected
 nr = not requested
 ft. = feet
 ft. MSL = feet relative to Mean Sea Level.
 ppb = parts per billion
 --- = not analyzed

ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1271)

ANALYTICAL DATA:

TPHg = Total Petroleum Hydrocarbons as gasoline according to EPA Method 8015 Modified
 MtBE = Methyl tertiary butyl ether according to EPA Method 8020 or 8260

¹ Well elevations reported as top of casing (TOC) surveyed by Kier & Wright, Licensed California Land Surveyor No. 5944.

² The sample was also reported as not detected for ethanol, t-butanol, di-isopropyl ether (DIPE), ethyl t-butyl ether (ETBE), and t-amyl methyl ether (TAME) by EPA Method 8260.

TABLE 2 - SOIL CHEMICAL ANALYTICAL DATA

Tosco 76 Branded Facility No. 6419
 6401 Dublin Boulevard
 Dublin, California

Sample Location and ID	Sample Depth (feet)	Date Collected	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MTBE by 8020 (ppm)
Boring MW-4 MW-4-6	6	5/10/99	ND	ND	ND	ND	ND	ND
Boring MW-5 MW5-6	6	5/10/99	ND	ND	ND	ND	ND	ND
Boring MW-6 MW6-12	12	5/10/99	ND	ND	ND	ND	ND	0.33
Boring MW-7 MW7-6	6	5/10/99	ND	0.010	ND	ND	0.0080	ND
Stockpile US-1(comp) ¹		5/10/99	ND	ND	ND	ND	ND	0.16

EXPLANATION:

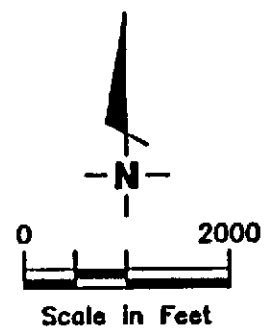
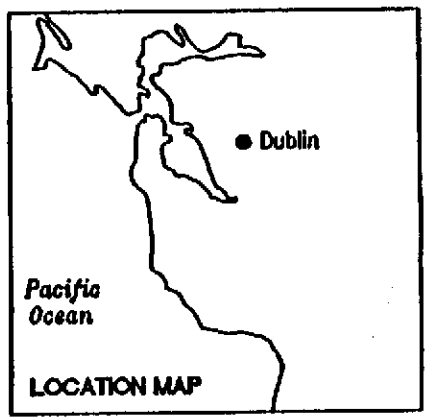
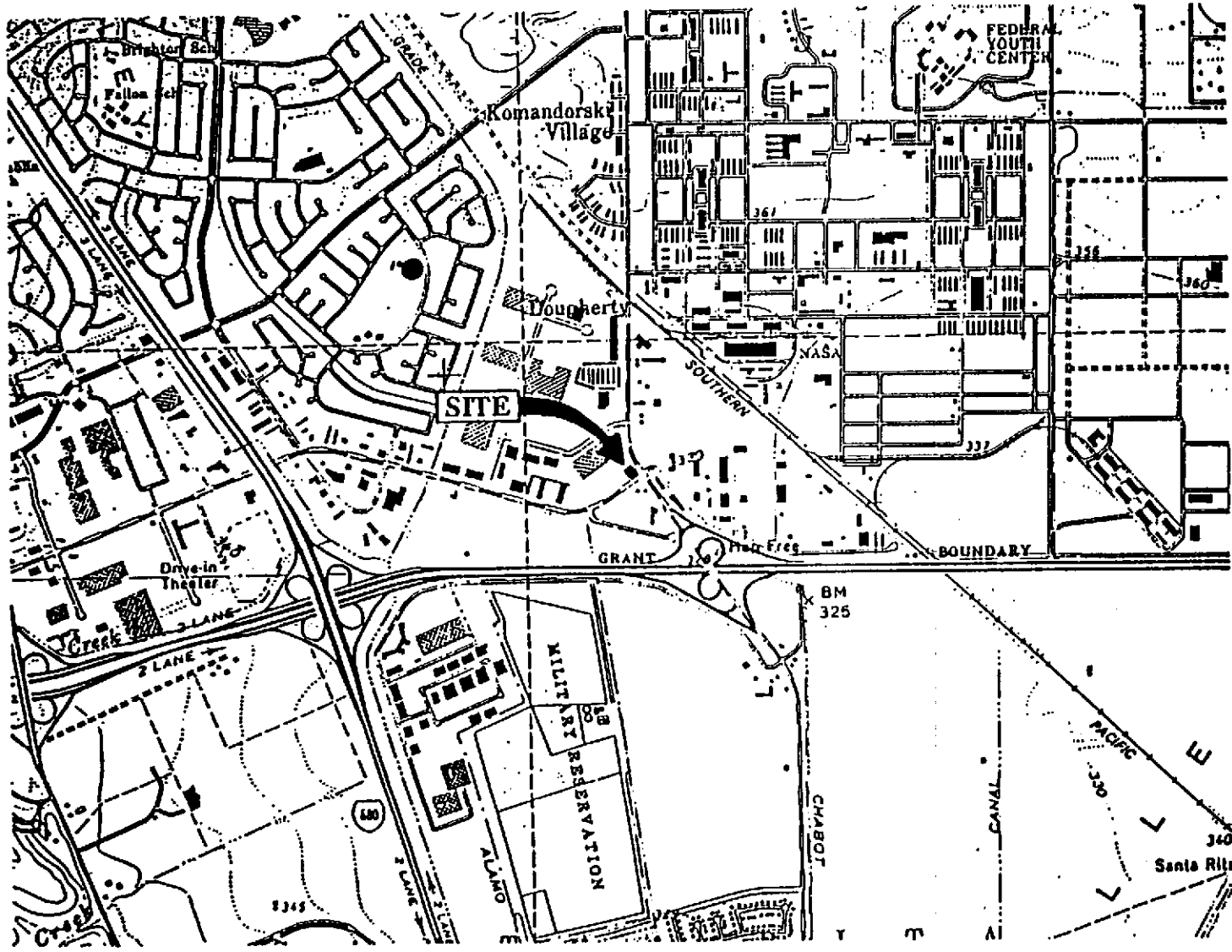
TPHg = Total Petroleum Hydrocarbons as gasoline
 BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
 MTBE = Methyl t-Butyl Ether
 feet = feet below ground surface
 ppm = parts per million
 ND = Not Detected
¹ Sample also analyzed for total lead (14 ppm).

ANALYTICAL METHODS:

TPHg/BTEX/MTBE = CA/LUFT/EPA Method 8020
 Lead = EPA Methods 3050BM/6010A

ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1271)



Base Map: USGS Topographic Map



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6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

VICINITY MAP
Tosco 76 Branded Facility #6419
6401 Dublin Boulevard
Dublin, California

JOB NUMBER 140101
REVIEWED BY

DATE November, 1998

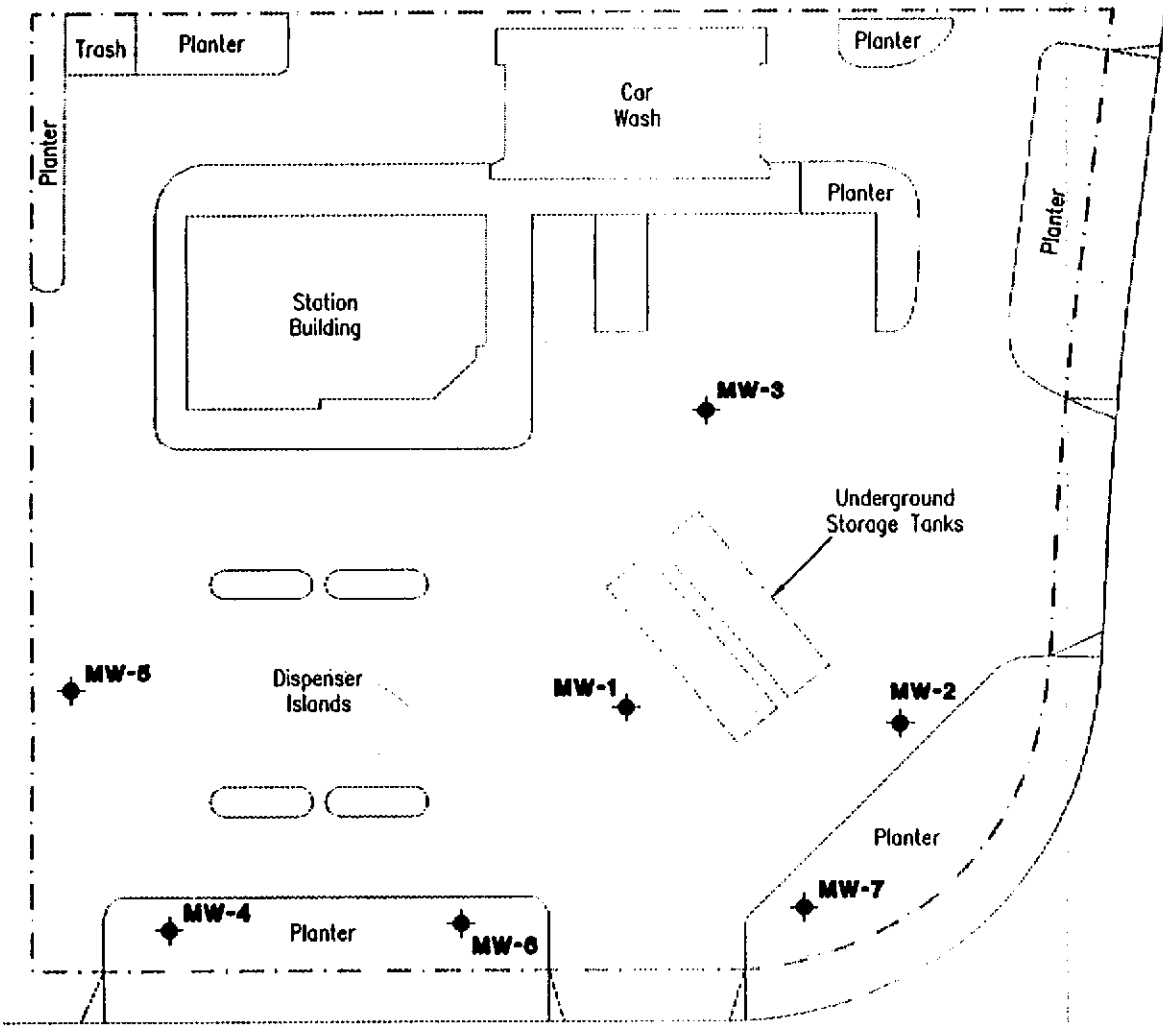
REVISED DATE

FIGURE 1

Approximate Property Boundary

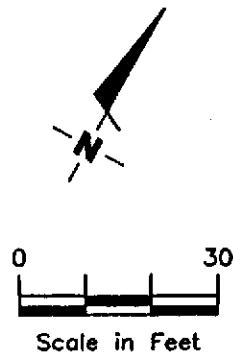
EXPLANATION

◆ Groundwater monitoring well



DOUGHERTY ROAD

DUBLIN BOULEVARD



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



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SITE PLAN
Tosco 76 Branded Facility #6419
6401 Dublin Boulevard
Dublin, California

FIGURE
2

JOB NUMBER
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DATE
05/99

REVISED DATE

Approximate Property Boundary

EXPLANATION

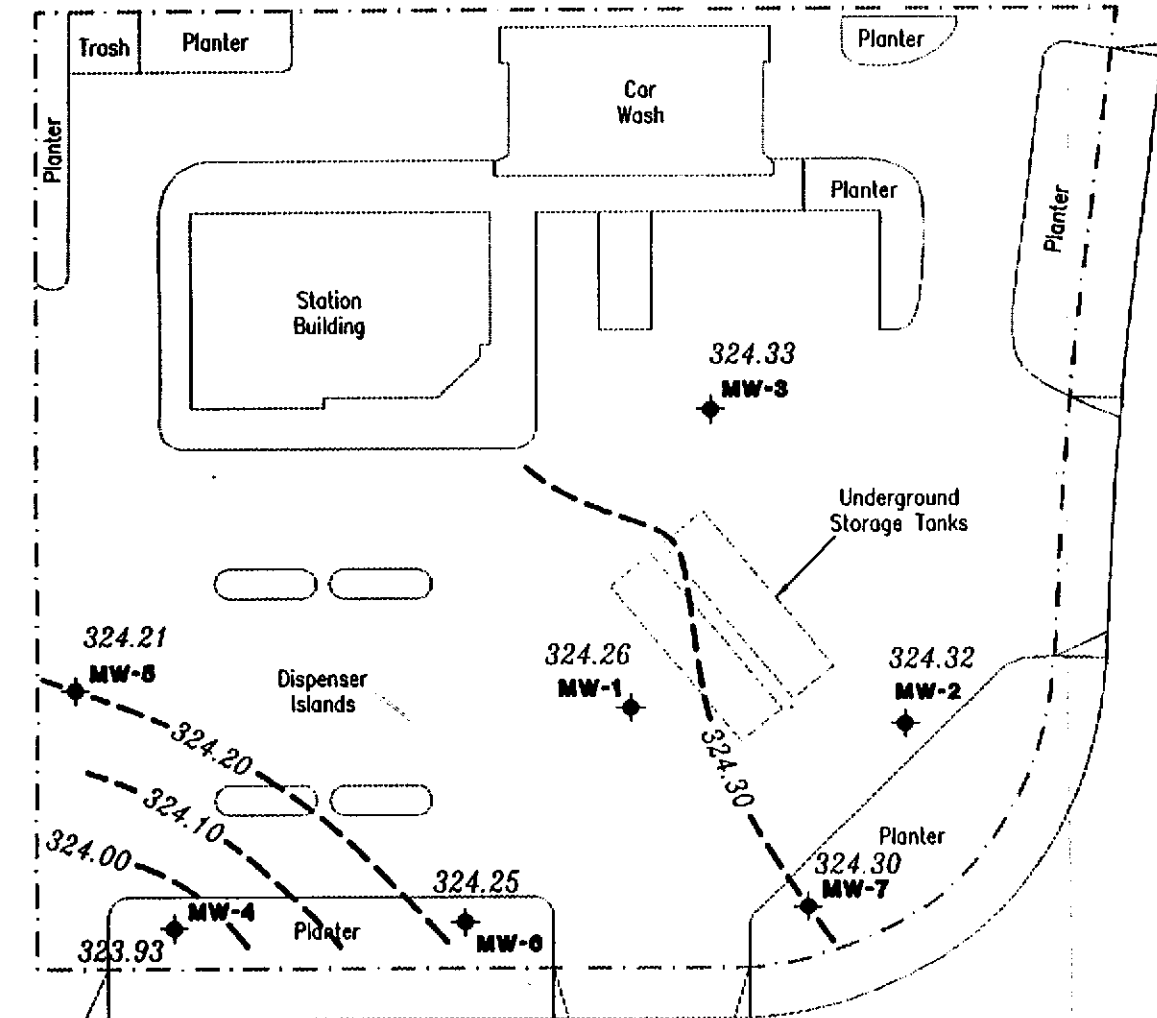
- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- - - 99.99 - - - Groundwater elevation contour, dashed where inferred.

DOUGHERTY ROAD

Approximate groundwater flow direction at a gradient of 0.004 Ft./Ft.



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



DUBLIN BOULEVARD



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6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco 76 Branded Facility #6419
6401 Dublin Boulevard
Dublin, California

FIGURE
3

JOB NUMBER
140101.02

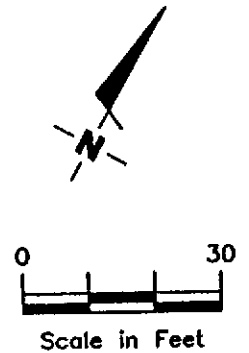
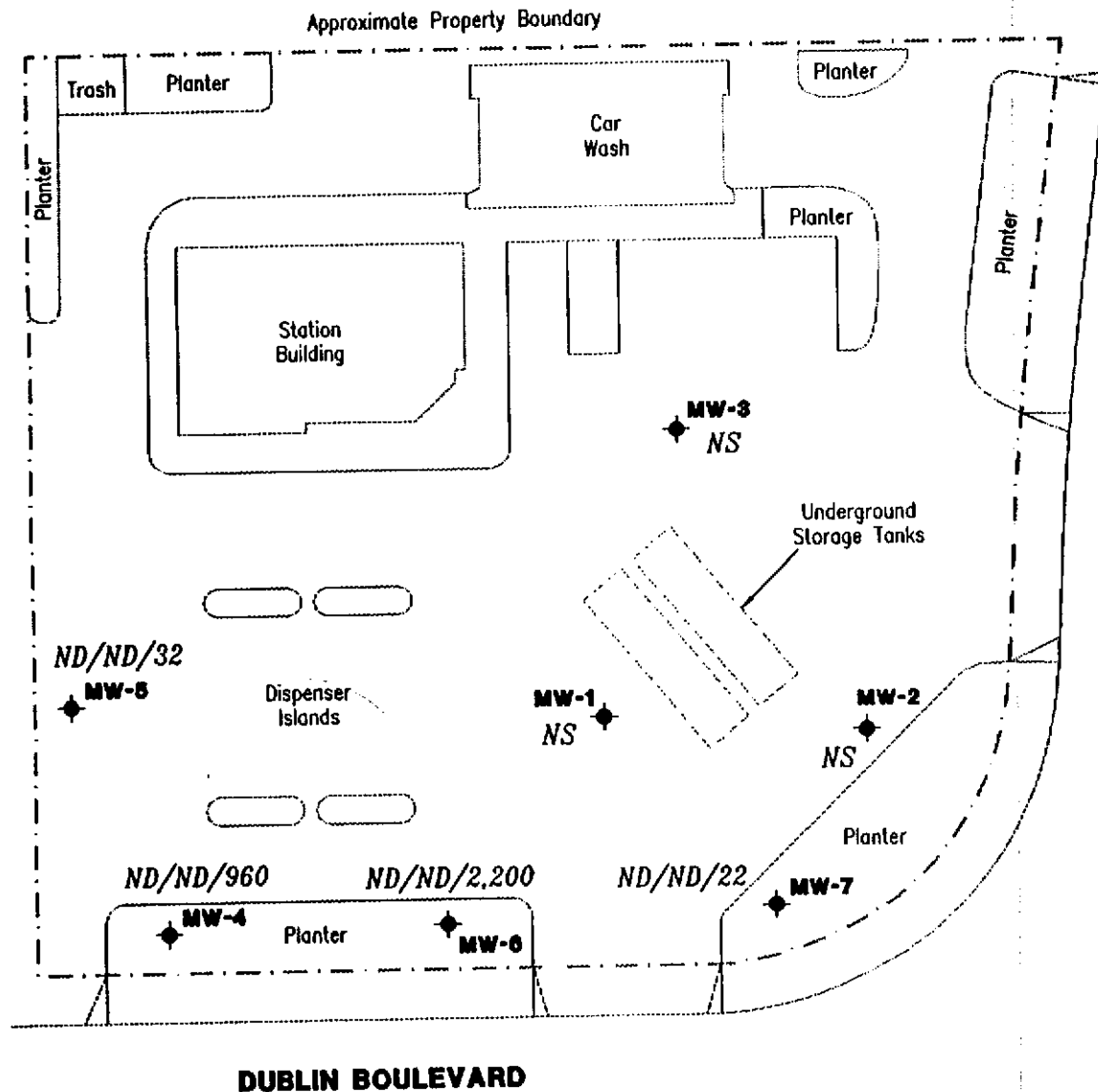
REVIEWED BY

DATE
May 21, 1999

REVISED DATE

EXPLANATION

- ◆ Groundwater monitoring well
- A/B/C TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb
- ND Not Detected
- NS Not Sampled



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.

GROUNDWATER CONCENTRATION MAP
 Tosco 76 Branded Facility #6419
 6401 Dublin Boulevard
 Dublin, California

FIGURE

4



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (925) 551-7555
 Dublin, CA 94568

JOB NUMBER
 140101.02

REVIEWED BY

DATE
 May 21, 1999

REVISED DATE

APPENDIX A

GR FIELD METHODS AND PROCEDURES

GETTLER-RYAN INC.
FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Exploratory soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soil is described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

- a. depth relative to underground storage tanks and existing ground surface
- b. depth relative to known or suspected groundwater
- c. presence or absence of contaminant migration pathways
- d. presence or absence of discoloration or staining
- e. presence or absence of obvious gasoline hydrocarbon odors
- f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log. Head-space screening procedures are performed and results recorded as reconnaissance data. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Stockpile Sampling

Stockpile samples consist of four individual sample liners collected from each 100 cubic yards (yd³) of stockpiled soil material. Four arbitrary points on the stockpiled material are chosen, and discrete soil sample is collected at each of these points. Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass tube into the stockpiled material with a wooden mallet or hand driven soil sampling device. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, placed in the

cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory borings with Schedule 40 polyvinyl Chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed on the basis of one composite sample per 50 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ± 0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ± 0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

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

April 23, 1999

RECEIVED

APR 26 1999

GETTLER-RYAN INC.
GENERAL CONTRACTORS

Mr. Clyde Galantine
Gettler-Ryan, Inc.
6747 Sierra Court, Suite J
Dublin, CA 94568

Dear Mr. Galantine:

Enclosed is drilling permit 99076 for a monitoring well construction project at 6401 Dublin Boulevard in Dublin for Tosco Marketing Company.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 235 or Matt Katen at extension 240.

Very truly yours,

A handwritten signature in cursive script that reads "Wyman Hong".

Wyman Hong
Water Resources Technician II

WH:arr

Enc.



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE, PLEASANTON, CALIFORNIA 94588-6127 PHONE (510) 484-2600 X235
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Tosco 76 Branded Facility #6419
6401 Dublin Blvd.
Dublin CA 94568

PERMIT NUMBER 99076
WELL NUMBER 3S/1E 6E5 to 6E8
APN 941 0205 010 03

California Coordinates Source _____ ft. Accuracy ± _____ ft.
CCN _____ ft. CCE _____ ft.
APN 941-205-10-3

PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT Name Tosco Marketing Co. (David DeWitt)
Address 2000 Cow Canyon Place Suite 400 Phone (925) 277-2384
City San Ramon CA Zip 94583

GENERAL

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

APPLICANT Name Gotter-Ryan Inc. - Clyde Galantine
Address 6747 Sierra Ct Suite J Phone (925) 551-7555
City Dublin CA Zip 94568

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 industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

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

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

F. WELL DESTRUCTION. See attached.
G. SPECIAL CONDITIONS

TYPE OF PROJECT

- | | | | |
|---------------------|-------------------------------------|----------------------------|--------------------------|
| Well Construction | <input type="checkbox"/> | Geotechnical Investigation | <input type="checkbox"/> |
| Cathodic Protection | <input type="checkbox"/> | General | <input type="checkbox"/> |
| Water Supply | <input type="checkbox"/> | Contamination | <input type="checkbox"/> |
| Monitoring | <input checked="" type="checkbox"/> | Well Destruction | <input type="checkbox"/> |

- PROPOSED WATER SUPPLY WELL USE
- | | | | |
|--------------|--------------------------|----------------------|--------------------------|
| New Domestic | <input type="checkbox"/> | Replacement Domestic | <input type="checkbox"/> |
| Municipal | <input type="checkbox"/> | Irrigation | <input type="checkbox"/> |
| Industrial | <input type="checkbox"/> | Other _____ | <input type="checkbox"/> |

- DRILLING METHOD:
- | | | | | | |
|------------|--------------------------|------------|--------------------------|-------|-------------------------------------|
| Mud Rotary | <input type="checkbox"/> | Air Rotary | <input type="checkbox"/> | Auger | <input checked="" type="checkbox"/> |
| Cable | <input type="checkbox"/> | Other | <input type="checkbox"/> | | |

DRILLER'S LICENSE NO. C57 485165 Gregg Drilling

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>19</u> ft.
Surface Seal Depth	<u>3</u> ft.	Number	<u>4</u>

GEOTECHNICAL PROJECTS

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

ESTIMATED STARTING DATE May 10, 1999
ESTIMATED COMPLETION DATE May 10, 1999

Approved Wyman Hong Date 22 Apr 99
Wyman Hong

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

APPLICANT'S SIGNATURE Clyde Galantine Date 4/20/99

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 15% 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 15% 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 DIATOMACEOUS, 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	

- LL - Liquid Limit (%)
- PI - Plastic Index (%)
- PID - Volatile Vapors in ppm
- MA - Particle Size Analysis
- 2.5 YR 6/2 - Soil Color according to Munsell Soil Color Charts (1975 Edition)
- 5 GY 5/2 - GSA Rock Color Chart

- No Soil Sample Recovered
- "Undisturbed" Sample
- Bulk or Classification Sample
- First Encountered Ground Water Level
- Piezometric Ground Water Level
- Penetration - Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs

Unified Soil Classification - ASTM D 2488-85
and Key to Test Data

Gettler-Ryan Inc.

Log of Boring MW-4

PROJECT: Tosco (Unocal) Station No. 6419

LOCATION: 6401 Dublin Blvd., Dublin, CA

PROJECT NO.: 140101.02

CASING ELEVATION: 330.36 ft. MSL

DATE STARTED: 05/10/99

WL (ft. bgs): 12 DATE: 05/10/99 TIME: 9:05 AM

DATE FINISHED: 05/10/99

WL (ft. bgs): DATE: TIME:

DRILLING METHOD: 8" Geoprobe Macrocore

TOTAL DEPTH: 19 Feet

DRILLING COMPANY: Gregg Drilling

GEOLOGIST: Clyde Galantine

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
						CL	CLAY (CL) - dark gray (10YR 4/1), damp, stiff, 75% clay, 20% silt, 5% fine to coarse sand, asphalt: FILL.	
						GC	CLAYEY GRAVEL (GC) - dark grayish brown (10YR 4/?), damp, medium dense, 60% rounded fine gravel, 30% clay, 5% silt, 5% fine sand, plastic, asphalt fragments: FILL.	
5	0		MW-4-6			CL	CLAY (CL) - very dark gray (2.5Y N3/) to dark grayish brown (2.5Y 4/2), saturated, stiff, 65% clay, 20% silt, 10% fine to coarse sand, 5% fine gravel, plastic: FILL.	
10	2					CL	Becomes 90% clay, 10% silt, trace fine sand at 10 feet. Pea gravel with brick fragment sluff material from 12 to 12.5 feet.	
15	0					CL	CLAY (CL) - olive brown (2.5Y 4/3), saturated, very stiff, 80% clay, 20% silt, trace fine sand, plastic: native material. Color change to light olive brown (2.5Y 4/3) at 17 feet, becomes 90% clay, 10% silt, trace fine sand, plastic.	
20	3							

Gettler-Ryan Inc.

Log of Boring MW-5

PROJECT: *Tosco (Unocal) Station No. 8419*

LOCATION: *6401 Dublin Blvd., Dublin, CA*

PROJECT NO.: *14010102*

CASING ELEVATION: *330.20 ft. MSL*

DATE STARTED: *05/10/99*

WL (ft. bgs): DATE: TIME:

DATE FINISHED: *05/10/99*

WL (ft. bgs): DATE: TIME:

DRILLING METHOD: *8" Geoprobe Macrocore*

TOTAL DEPTH: *19 Feet*

DRILLING COMPANY: *Gregg Drilling*

GEOLOGIST: *Clyde Galantine*

DEPTH feet	P/D (ppm)	BLOWS/FT. #	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
							Asphalt.	
						GW	GRAVEL WITH SAND (GW) - dark gray (10YR 4/1), damp, dense, 70% fine gravel, 30% fine to coarse sand; FILL.	<p>2" blank Schedule 40 PVC</p> <p>cap - concrete</p> <p>ben - tonite</p> <p>cap - concrete</p> <p>2" machine-slotted PVC (0.02 inch)</p> <p>sand Lanester #3</p> <p>cap</p>
5	0		MW-5-6			ML	SILT (ML) - very dark gray (10YR 3/1), damp, stiff, 75% silt, 15% fine sand, 10% clay. Color change to dark gray (10YR 4/1) at 4 feet.	
10	0					CL	CLAY (CL) - dark gray (10YR 4/1), damp, stiff, 80% clay, 20% silt, trace fine sand, plastic. Color change to very dark grayish brown (2.5Y 3/2) at 8.5 feet. Medium to coarse sand layer from 12 to 12.2 feet.	
15	1					SC	Becomes 65% clay, 35% silt at 14.5 feet.	
20	0					SC	CLAYEY SAND (SC) - olive brown (2.5Y 4/3), damp to moist, dense, 65% subangular to rounded medium to coarse sand, 25% clay, 10% silt.	

Gettler-Ryan Inc.

Log of Boring MW-6

PROJECT: *Tosco (Unocal) Station No. 6419*

LOCATION: *6401 Dublin Blvd., Dublin, CA*

PROJECT NO.: *140101.02*

CASING ELEVATION: *330.49 ft. MSL*

DATE STARTED: *05/10/99*

WL (ft. bgs): DATE: TIME:

DATE FINISHED: *05/10/99*

WL (ft. bgs): DATE: TIME:

DRILLING METHOD: *8" Geoprobe Macrocore*

TOTAL DEPTH: *19 Feet*

DRILLING COMPANY: *Gregg Drilling*

GEOLOGIST: *Clyde Galantine*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
						GC	GRAVELLY CLAY (CL) - very dark grayish brown (10YR 3/2), damp, stiff, 65% clay, 30% fine gravel, 5% fine to coarse sand: FILL.	
						CL	CLAY (CL) - very dark gray (5Y 3/1), damp, stiff, 80% clay, 35% silt, 5% fine sand: FILL.	
5			MW-6-8.5			SC	CLAYEY SAND (SC) - very dark gray (2.5Y N3/), damp, medium dense, 80% fine to medium sand, 40% clay: FILL.	
	2					ML	SILT (ML) - black (2.5 N2/), damp, stiff, 85% silt, 20% clay, 15% fine to medium sand, non plastic, organic appearance.	
						CL	CLAY (CL) - black (2.5 N2/), damp, stiff, 85% clay, 15% silt, trace sand, organic appearance.	
							Gravel layer from 9 to 9.2 feet.	
10			MW-6-12				Color change to dark grayish brown (2.5Y 4/2) at 12 feet, becomes damp, stiff, 75% clay, 25% silt, trace gravel, rootlets, plastic.	
	0						Fine sand layer from 13.8 to 13.9 feet.	
15		2					Color change to grayish brown (2.5Y 5/2) at 18 feet, becomes 85% clay, 15% silt, white concretions, slight MnO staining, plastic.	
							Fine gravel layer from 17.5 to 17.8 feet.	
20		2						

Gettler-Ryan Inc.

Log of Boring MW-7

PROJECT: <i>Tosco (Unocal) Station No. 6419</i>	LOCATION: <i>6401 Dublin Blvd., Dublin, CA</i>
PROJECT NO.: <i>140101.02</i>	CASING ELEVATION: <i>330.43 ft. MSL</i>
DATE STARTED: <i>05/10/99</i>	WL (ft. bgs): <i>5.75</i> DATE: <i>05/10/99</i> TIME: <i>5:00 PM</i>
DATE FINISHED: <i>05/10/99</i>	WL (ft. bgs): DATE: TIME:
DRILLING METHOD: <i>8" Geoprobe Macrocore</i>	TOTAL DEPTH: <i>19 Feet</i>
DRILLING COMPANY: <i>Gregg Drilling</i>	GEOLOGIST: <i>Clyde Galantine</i>

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
5	0		MW-7-8		[Hatched pattern]	CL	GRAVELLY CLAY (CL) - grayish brown (2.5Y 5/2), damp, stiff, 80% clay, 16% fine gravel, 5% fine to coarse sand: FILL.	
					[Dotted pattern]	GC	CLAYEY GRAVEL (GC) - grayish brown (2.5Y 5/2), damp, dense, 65% fine gravel, 30% clay, 5% fine to coarse sand: FILL.	
					[Dotted pattern]	SC	CLAYEY SAND (SC) - very dark gray (2.5Y N3/), saturated, medium stiff, 65% fine to medium sand, 30% clay, 5% silt: FILL.	
					[Hatched pattern]	CL	CLAY (CL) - very dark gray (10YR 3/1), damp, stiff, 90% clay, 10% silt, trace fine sand, very plastic. Fine to medium sand layers from 9.25 to 9.5 feet and from 9.75 to 9.9 feet. Color change to very dark grayish brown (2.5Y 3/2) at 10.5 feet, becomes wet, 80% clay, 20% silt, trace gravel, plastic.	
10	0				[Dotted pattern]	SW SM	SAND WITH SILT (SW-SM) - dark grayish green (2.5Y 4/2), saturated, loose, 90% fine sand, 10% silt.	
					[Dotted pattern]	CL	CLAY (CL) - olive brown (2.5Y 4/3), damp, stiff, 80% clay, 30% silt, 10% fine sand. Becomes 80% clay, 20% silt, trace gravel or concretions, plastic at 14.5 feet.	
15	0				[Dotted pattern]	SW SM	SAND WITH SILT (SW-SM) - dark grayish green (2.5Y 4/2), saturated, loose, 90% fine sand, 10% silt.	
					[Dotted pattern]	CL	CLAY (CL) - light olive brown (2.5Y 5/3), damp, stiff, 70% clay, 25% silt, 5% fine sand, caliche, plastic.	
20	0							

Survey Date 5/28/99
Job No.94521-1

Table of Elevations
Tosco 76 Service Station No. 6416
6401 Dublin Blvd.
Dublin, California
For Gettler-Ryan

<u>Well No.</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>
MW1	5046.90	4983.68	330.21 top of PVC casing @ notch 330.59 centerline of well cover
MW2	5043.41	5024.44	330.30 top of PVC casing @ notch 330.56 centerline of well cover
MW3	5092.57	4997.24	330.49 top of PVC casing @ notch 330.94 centerline of well cover
MW4	5011.20	4910.65	330.36 top of PVC casing @ notch 330.69 centerline of well cover
MW5	5047.58	4896.64	330.20 top of PVC casing @ notch 330.57 centerline of well cover
MW6	5011.65	4956.42	330.49 top of PVC casing @ notch 330.86 centerline of well cover
MW7	5012.58	5008.96	330.43 top of PVC casing @ notch 330.73 centerline of well cover

Benchmark: City of Dublin: Dough-SL, Chiseled square on the top of curb at the centerline of the catch basin, at the northerly curb return on the Northwest corner of Dougherty Road and Sierra Way.

Elevation - 331.728 M.S.L. Datum

KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC.
5880 WEST LAS POSITAS BOULEVARD, SUITE 34 • PLEASANTON, CALIFORNIA 94588 • (925) 734-8060 • (925) 734-8064



GETTLER-RYAN INC.

DAILY SAMPLING REPORT

Site Location: TOSCO 76#6419
6401 DUBLIN BLVD.
DUBLIN, CA

Job # 140101.02

Date: 5/21/1999

DESCRIPTION OF WORK PERFORMED:

Monitor 7 Wells
Purge 4 Wells
Sample 4 Wells
Develop 4 Wells

Total # of Wells @ site: 7

Water levels only: _____

Monitored/Sampled: 7 / 4

Bailed Product: Ø

CHECK LIST:

Transfer Purge Water To:
Drums on site: _____
Holding tank: ✓
Total Purge Water (gals): 221 gallons

Sampling Truck: MP # 4

Purge water trailer: _____

Traffic Control: _____

Arrow board/road signs cones

PURGING EQUIPMENT:

Disposal bailer _____
Teflon bailer ✓
3/8" stack pumps _____
1" double diaphragm _____
Grundfo's _____
SUCTION ✓

SAMPLING EQUIPMENT:

Teflon bailer _____
Disposable bailer 4
Grab sample _____
Pressure bailer _____

OTHER EQUIPMENT:

Gloves 13 PAIRS
Bailer cord _____
Well plug size _____"
POLY-TUBING 110'

SPECIAL EQUIPMENT: SOUNDER

Turbidity Meter _____
D O Meter _____
Re-Dox Meter _____
Alkalinity test _____

COMMENTS: _____

Sampled by: HAIG KEVORK

Assistant: N/A

Time Billed: 8 Hrs

daily frm

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 6419 Job#: 140101.02
 Address: 6401 DUBLIN BLVD. Date: 5/21/1999
 City: DUBLIN Sampler: HAIG KEVORK

Well ID: MW-1 Well Condition: _____
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)
 Total Depth: _____ ft.
 Depth to Water: 5.95 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: _____
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>N/A</u>							

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 # 6419
Address: 6401 DUBLIN BLVD.
City: DUBLIN

Job#: 140101.02
Date: 5/21/99
Sampler: HAIG KEVORK

Well ID MW-2
Well Diameter 2 in.
Total Depth _____ ft.
Depth to Water 5.98 ft.

Well Condition: _____
Hydrocarbon Thickness: Ø (feet) Amount Bailed Ø (Gallons)
Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66
6" = 1.50 12" = 5.80

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: N/A
Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____
Sampling Time: _____
Purging Flow Rate: _____ gpm.
Did well de-water? _____

Weather Conditions: _____
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
		<u>N/A</u>					

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO # 6419 Job#: 140101.02
 Address: 6401 DUBLIN BLVD, Date: 5/21/99
 City: DUBLIN Sampler: HAIG KEVORK

Well ID: MW-3 Well Condition: _____
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed: Ø (Gallons)
 Total Depth: _____ ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 6.16 ft. Factor (VF) 6" = 1.50 12" = 5.80

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A

Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A

Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: _____
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
		<u>N/A</u>					

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btax/mtbe

COMMENTS: MONITORED ONLY

WELL MONITORING/DEVELOPMENT
FIELD DATA SHEET

Client/Facility: TOSCO 76 # 6419 Job#: 140101.02
 Address: 6401 DUBLIN BLVD. Date: 5/21/1999
 City: DUBLIN Sampler: HAG KEVORK

Well ID: MW-4 Well Condition: NEW
 Well Diameter: 2 in. Hydrocarbon Thickness: ∅ Ft. Amount Bailed (product/water): ∅ (gal.)
 Total Depth: 19.39 ft. Volume Factor (VF): 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.50, 12" = 5.80
 Depth to Water: 6.43 ft.

12.96 x VF 0.17 = 2.20 x 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 13:02 Weather Conditions: SUNNY
 Sampling Time: 14:45 Water Color: SILTY Odor: _____
 Purging Flow Rate: 1.1 gpm. Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
13:05	2	8.37	1400	23.9			
13:09	6	8.20	995	21.8			
13:15	10	8.11	930	20.6			
13:25	18	8.06	854	19.7			
13:31	22	8.02	822	19.5			
13:38	28	8.08	769	19.8			
13:47	35	8.11	762	20.1			
14:00	45	8.03	760	20.0			
14:13	43	7.99	748	19.9			
14:22	45	7.97	739	19.6			
14:45	52	7.98	750	19.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	4 VOA	YES	HCL	SEQUOIA	G/BTEX/MTBE
					OXY 8260

COMMENTS: Total Volume purged 52 gal.
FAST RECOVERY

**WELL MONITORING/DEVELOPMENT
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 6419 Job#: 140101.02
 Address: 6401 DUBLIN BLVD, Date: 5/21/1999
 City: DUBLIN Sampler: HAIG KEVORK

Well ID: MW-5 Well Condition: NEW
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø Ft. Amount Bailed: Ø (gal.)
 Total Depth: 19.33 ft. Volume Factor (VF): 2" = 0.17, 3" = 0.38, 4" = 0.66
 Depth to Water: 5.99 ft. 6" = 1.50, 12" = 5.80

13.34 x VF 0.17 = 2.27 x 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer Bailer Stack Suction Grundfos Other: _____
 Sampling Equipment: Disposable Bailer Bailer Pressure Bailer Grab Sample Other: _____

Starting Time: 10:36 Weather Conditions: SUNNY
 Sampling Time: 12:45 Water Color: SILTY Odor: _____
 Purging Flow Rate: 0.75 gpm. Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°C)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:39	2	8.41	2990	26.3			
10:43	5	8.22	3390	25.8			
10:48	8	8.13	3400	26.1			
10:54	12	8.09	3210	26.0			
11:01	16	7.94	3080	25.1			
11:06	20	7.88	2960	24.6			
11:15	25	7.83	2930	24.2			
11:30	35	7.81	2910	23.9			
11:41	42	7.86	2940	23.8			
11:50	48	7.80	2920	24.0			
11:59	50	7.82	2900	24.1			
12:16	54	7.81	2910	24.3			
12:23	60	7.82	2930	24.5			
12:32	66	7.79	2920	24.2			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	4 VOA	YES	HCL	SECQUOIA/G/BTEX/MTBE	OXY 8260

COMMENTS: Total Volume purged 66 gal.
RECOVERY RATE WAS ≈ 0.63' / MINUTE.

FIELD DATA SHEET

Client/
Facility TOSCO 76 # 6419
Address: 6401 DUBLIN BLVD,
City: DUBLIN

Job#: 140101.02
Date: 5/21/99
Sampler: HAIG KEVOAK

Well ID MW-6

Well Condition: NEW

Well Diameter 2 in.

Hydrocarbon Thickness: ∅ Ft. Amount Bailed ∅ (gal.)

Total Depth 19.33 ft.

Depth to Water 6.24 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

13.09 x VF 0.17 = 2.23 x 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer
 Bailer Stack
 Suction
 Grundfos
Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
Other: _____

Starting Time: 14:56

Weather Conditions: SUNNY

Sampling Time: 16:35

Water Color: SILTY Odor: _____

Purging Flow Rate: 0.75 gpm.

Sediment Description: _____

Did well de-water? NO

If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
15:00	2	7.96	3170	22.8			
15:06	6	7.85	3010	22.3			
15:10	8	7.82	2960	23.6			
15:19	13	7.83	2880	23.9			
15:32	20	7.79	2910	24.2			
15:41	26	7.80	2880	23.8			
15:58	33	7.77	2850	23.5			
16:11	38	7.75	2830	23.3			
16:22	45	7.72	2820	23.6			
16:30	50	7.74	2800	23.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	4 VOA	YES	HCL	SEQUOIA	G/BTEX/MTBE
					OXY 8260

COMMENTS: TOTAL VOLUME PURGED 50 gal.
RECOVERY RATE WAS \approx 0.75' / MINUTE

**WELL MONITORING/DEVELOPMENT
FIELD DATA SHEET**

Client/Facility: TOSCO #6 #6419 Job#: 140101.02
 Address: 640 DUBLIN BLVD, Date: 5/21/1999
 City: DUBLIN Sampler: HAIG-KEVORAK

Well ID: MW-7 Well Condition: NEW
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø Amount Bailed: Ø
 Total Depth: 19.33 ft. (product/water): (gal.)
 Depth to Water: 6.13 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Factor (VF) 6" = 1.50 12" = 5.80

13.20 x VF 0.17 = 2.24 x 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 16:47 Weather Conditions: SUNNY
 Sampling Time: 18:17 Water Color: SILTY Odor: _____
 Purging Flow Rate: 1-1.2 gpm. Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
16:50	2	7.96	2240	23.5			
16:53	6	7.84	2510	22.9			
16:57	10	7.92	2430	22.6			
17:01	15	7.95	2420	22.1			
17:10	22	7.90	2380	21.8			
17:28	30	7.80	2400	22.2			
17:42	33	7.78	2390	22.6			
17:56	36	7.76	2370	22.4			
18:05	47	7.79	2360	22.6			
18:10	53	7.81	2350	22.5			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	4 VOA	YES	HCL	SEQUOIA	G/BTEX/MTBE OXY 8260

COMMENTS: TOTAL VOLUME PURGED 53 gal,
FAST RECOVERY

Survey Date 5/28/99
Job No.94521-1

Table of Elevations

Tosco 76 Service Station No. 6416
6401 Dublin Blvd.
Dublin, California
For Gettler-Ryan

<u>Well No.</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>
MW1	5046.90	4983.68	330.21 top of PVC casing @ notch 330.59 centerline of well cover
MW2	5043.41	5024.44	330.30 top of PVC casing @ notch 330.56 centerline of well cover
MW3	5092.57	4997.24	330.49 top of PVC casing @ notch 330.94 centerline of well cover
MW4	5011.20	4910.65	330.36 top of PVC casing @ notch 330.69 centerline of well cover
MW5	5047.58	4896.64	330.20 top of PVC casing @ notch 330.57 centerline of well cover
MW6	5011.65	4956.42	330.49 top of PVC casing @ notch 330.86 centerline of well cover
MW7	5012.58	5008.96	330.43 top of PVC casing @ notch 330.73 centerline of well cover

Benchmark: City of Dublin: Dough-SL, Chiseled square on the top of curb at the centerline of the catch basin, at the northerly curb return on the Northwest corner of Dougherty Road and Sierra Way.
Elevation - 331.728 M.S.L. Datum

KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC.

5880 WEST LAS POSITAS BOULEVARD, SUITE 34 • PLEASANTON, CALIFORNIA 94588 • (925) 734-8060 • (925) 734-8064



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4101

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Clyde Galantine

Client Project ID: Tosco #6419, Dublin
Sample Matrix: Soil
Analysis Method: EPA 5030/8015 Mod./8021
First Sample #: 905-0634

Sampled: May 10, 1999
Received: May 10, 1999
Reported: Jun 1, 1999

RECEIVED
MAY 10 1999
GETTLER-RYAN INC.

TOTAL PURGEABLE PETROLEUM HYDROCARBONS WITH MTBE

Analyte	Reporting Limit mg/Kg	Sample I.D. 905-0634 MW4-6	Sample I.D. 905-0635 MW5-6	Sample I.D. 905-0636 MW6-12	Sample I.D. 905-0637 MW7-6	Sample I.D. 905-0638 S-1(Comp)
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.0050	N.D.	N.D.	N.D.	0.010	N.D.
Toluene	0.0050	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.0050	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.0050	N.D.	N.D.	N.D.	0.0080	N.D.
MTBE	0.050	N.D.	N.D.	0.33	N.D.	0.16
Chromatogram Pattern:		--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	5/13/99	5/13/99	5/13/99	5/13/99	5/13/99
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 40-140%)	99	103	118	101	91

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Clyde Galantine

Client Project ID: Tosco #6419, Dublin
Sample Descript: Soil
Analysis for: Total Lead
First Sample #: 905-0638

Sampled: May 10, 1999
Received: May 10, 1999
Digested: May 21, 1999
Analyzed: May 28, 1999
Reported: Jun 1, 1999

LABORATORY ANALYSIS FOR: Total Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
905-0638	S-1(Comp)	1.0	14

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
3747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Clyde Galantine

Client Project ID: Tosco #6419, Dublin
Matrix: Solid

QC Sample Group: 9050634-638

Reported: Jun 1, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Lead
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 6010
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Kelly
MS/MSD Batch#:	9050635	9050635	9050635	9050635	9050638
Date Prepared:	5/13/99	5/13/99	5/13/99	5/13/99	5/21/99
Date Analyzed:	5/13/99	5/13/99	5/13/99	5/13/99	5/28/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	MV-4
Conc. Spiked:	0.80 mg/kg	0.80 mg/kg	0.80 mg/kg	2.4 mg/kg	50 mg/kg
Matrix Spike % Recovery:	106	109	109	113	126
Matrix Spike Duplicate % Recovery:	114	116	118	117	102
Relative % Difference:	6.8	6.7	7.7	3.6	17
LCS Batch#:	5LCS051399	5LCS051399	5LCS051399	5LCS051399	LCS052199
Date Prepared:	5/13/99	5/13/99	5/13/99	5/13/99	5/21/99
Date Analyzed:	5/13/99	5/13/99	5/13/99	5/13/99	5/28/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	MV-4
LCS % Recovery:	99	100	99	100	102
% Recovery Control Limits:	50-150	50-150	50-150	50-150	80-120

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

9050634.GET <3>



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Tosco #6419, Dublin
Sample Matrix: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 905-2260

Sampled: May 21, 1999
Received: May 24, 1999
Reported: Jun 9, 1999

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 905-2260 TB-LB	Sample I.D. 905-2261 MW-4	Sample I.D. 905-2262 MW-5	Sample I.D. 905-2263 MW-6	Sample I.D. 905-2264 MW-7
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
MTBE	2.5	N.D.	960	32	2,200	22
Chromatogram Pattern:	

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	1.0	1.0	1.0
Date Analyzed:	6/2/99	6/2/99	6/2/99	6/2/99	6/2/99
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	100	97	97	94	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley

Julianne Fegley
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Tosco #6419, Dublin
Sample Descript: Water, MW-4
Analysis Method: EPA 8260
Lab Number: 905-2261

Sampled: May 21, 1999
Received: May 24, 1999
Analyzed: Jun 4, 1999
Reported: Jun 9, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	8,330	N.D.
t-Butanol.....	1,670	N.D.
Methyl t-Butyl Ether (MTBE).....	17	910
Di-Isopropyl Ether (DIPE).....	17	N.D.
Ethyl t-Butyl Ether (ETBE).....	17	N.D.
t-Amyl Methyl Ether (TAME).....	17	N.D.

Surrogates	Control Limit %	% Recovery
1,2-Dichloroethane-d4.....	76	114
		104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, San Carlos

Julianne Fegley
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
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FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Tosco #6419, Dublin
Sample Descript: Water, MW-5
Analysis Method: EPA 8260
Lab Number: 905-2262

Sampled: May 21, 1999
Received: May 24, 1999
Analyzed: Jun 4, 1999
Reported: Jun 9, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	1,000	N.D.
t-Butanol.....	200	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	33
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
1,2-Dichloroethane-d4.....	76	114
		104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, San Carlos

Julianne Fegley

Julianne Fegley
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954
San Carlos, CA 94070-4111

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865
(650) 232-9600

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Tosco #6419, Dublin
Sample Descript: Water, MW-6
Analysis Method: EPA 8260
Lab Number: 905-2263

Sampled: May 21, 1999
Received: May 24, 1999
Analyzed: Jun 4, 1999
Reported: Jun 9, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	20,000	N.D.
t-Butanol.....	4,000	N.D.
Methyl t-Butyl Ether (MTBE).....	40	2,300
Di-Isopropyl Ether (DIPE).....	40	N.D.
Ethyl t-Butyl Ether (ETBE).....	40	N.D.
t-Amyl Methyl Ether (TAME).....	40	N.D.

Surrogates	Control Limit %	% Recovery
1,2-Dichloroethane-d4.....	76	114
		99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, San Carlos

Julianne Fegley
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 FAX (650) 232-9612

Gettler-Ryan - Dublin 6747 Sierra Court, Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Project ID: Tosco #6419, Dublin Sample Descript: Water, MW-7 Analysis Method: EPA 8260 Lab Number: 905-2264	Sampled: May 21, 1999 Received: May 24, 1999 Analyzed: Jun 4, 1999 Reported: Jun 9, 1999
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OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	1,000	N.D.
t-Butanol.....	200	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	22
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
1,2-Dichloroethane-d4.....	76	114
		100

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, San Carlos

Julianne Fegley
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FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Tosco #6419, Dublin
Matrix: Liquid

QC Sample Group: 9052260-264

Reported: Jun 9, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	MTBE
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8260	EPA 8260
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	San Carlos	San Carlos

MS/MSD Batch#:	9052096	9052096	9052096	9052096	L905515-01	L906074-02
Date Prepared:	6/2/99	6/2/99	6/2/99	6/2/99	6/4/99	6/4/99
Date Analyzed:	6/2/99	6/2/99	6/2/99	6/2/99	6/4/99	6/4/99
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	-	-
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	50 µg/L	50 µg/L
Matrix Spike % Recovery:	100	90	95	98	103	112
Matrix Spike Duplicate % Recovery:	100	90	90	102	105	117
Relative % Difference:	0.0	0.0	5.4	3.3	1.9	4.4

LCS Batch#:	2LCS060299	2LCS060299	2LCS060299	2LCS060299	-	LCS060499
Date Prepared:	6/2/99	6/2/99	6/2/99	6/2/99	-	6/4/99
Date Analyzed:	6/2/99	6/2/99	6/2/99	6/2/99	-	6/4/99
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	-	-
LCS % Recovery:	100	90	90	102	-	116

% Recovery Control Limits:	70-130	70-130	70-130	70-130	70-130	70-130
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Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271
& San Carlos

Julianne Fegley
Julianne Fegley
Project Manager



Tosco Marketing Company
3000 Cow Canyon Pl., Ste. 400
San Ramon, California 94563

Facility Number 6419 - DUBLIN
 Facility Address 6401 DUBLIN BLVD.
 Consultant Project Number 140101.02
 Consultant Name Gettler-Ryan Inc. (G-R Inc.)
 Address 6747 Sierra Court, Suite J, Dublin, CA 94568
 Project Contact (Name) Deanna L. Harding
 (Phone) 510-551-7555 (Fax Number) 510-551-7888

Contact (Name) DAVE DE WITT
 (Phone) (925) 277-2384
 Laboratory Name Sequoia Analytical
 Laboratory Release Number 99A555
 Samples Collected by (Name) HAIG KEVORK
 Collection Date 5/21/1999
 Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Diacritical	Time	Sample Preservation	Iod (Yes or No)	Analyses To Be Performed											DO NOT BILL TB-LB ANALYSIS				
								TPH Gas + BTEX w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (1019 or M)	OXYGENATE COMPI 58260						Remarks	
TB-LB		1	W	G		HCL	YES	✓															9052260
MW-4		4	W	G	14:45	HCL	YES	✓															9052261
MW-5		4	W	G	12:45	HCL	YES	✓															9052262
MW-6		4	W	G	16:35	HCL	YES	✓															9052263
MW-7		4	W	G	18:17	HCL	YES	✓															9052264

Relinquished By (Signature) <u>[Signature]</u>	Organization G-R Inc.	Date/Time	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <input checked="" type="checkbox"/> As Contracted
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>		Date/Time <u>7:50</u> <u>5/21/99</u>	

May 24, 1999

Mr. Clyde Galantine
Gettler Ryan
6747 Sierra Ct. Suite J.
Dublin, CA 94568

Re: TOSCO #6419
PTS File: 29162

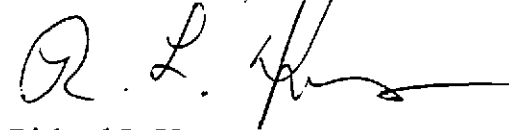
Dear Mr. Galantine:

Enclosed are final data for samples submitted from your TOSCO # 6419 Project # 140101.02. All analyses were performed by applicable ASTM, EPA or API. Samples will be retained for 30 days before disposal unless other arrangements are made. Per your request, also enclosed is an information packet on PTS Laboratories.

We appreciate the opportunity to be of service and trust these data will prove beneficial in the development of this project. Please feel free to call myself or Larry Kunkel, District Manager, should you have any questions or require additional information.

Sincerely,

PTS Laboratories, Inc.



Richard L. Young
Project/QC Manager

RLY: ih

encl.

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JUN 02 1999

GETTLER-RYAN INC.
GENERAL CONTRACTORS

PHYSICAL PROPERTIES DATA

(METHODOLOGY: ASTM D2216, API RP40, ASTM D2937, WALKLEY-BLACK, ASTM D5084)

PROJECT NAME: TOSCO #6419

PROJECT NO: 140101.02

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENT. (1)	MOISTURE CONTENT (% wt)	DENSITY		EFFECTIVE POROSITY, % Vb	TOTAL ORGANIC CARBON mg/kg	PORE FLUID SATURATION, % Pv		25.0 PSI CONFINING STRESS	
				BULK (g/cc)	GRAIN (g/cc)			WATER (2)	HYDROCARBON (3)	NATIVE STATE EFFECTIVE PERMEABILITY TO WATER (millidarcy)	NATIVE STATE EFFECTIVE HYDRAULIC CONDUCTIVITY (cm/s)
MW-6	6.5	V	23.9	1.52	2.63	42.3	1950	78.4	11.1	1.08	1.05E-08

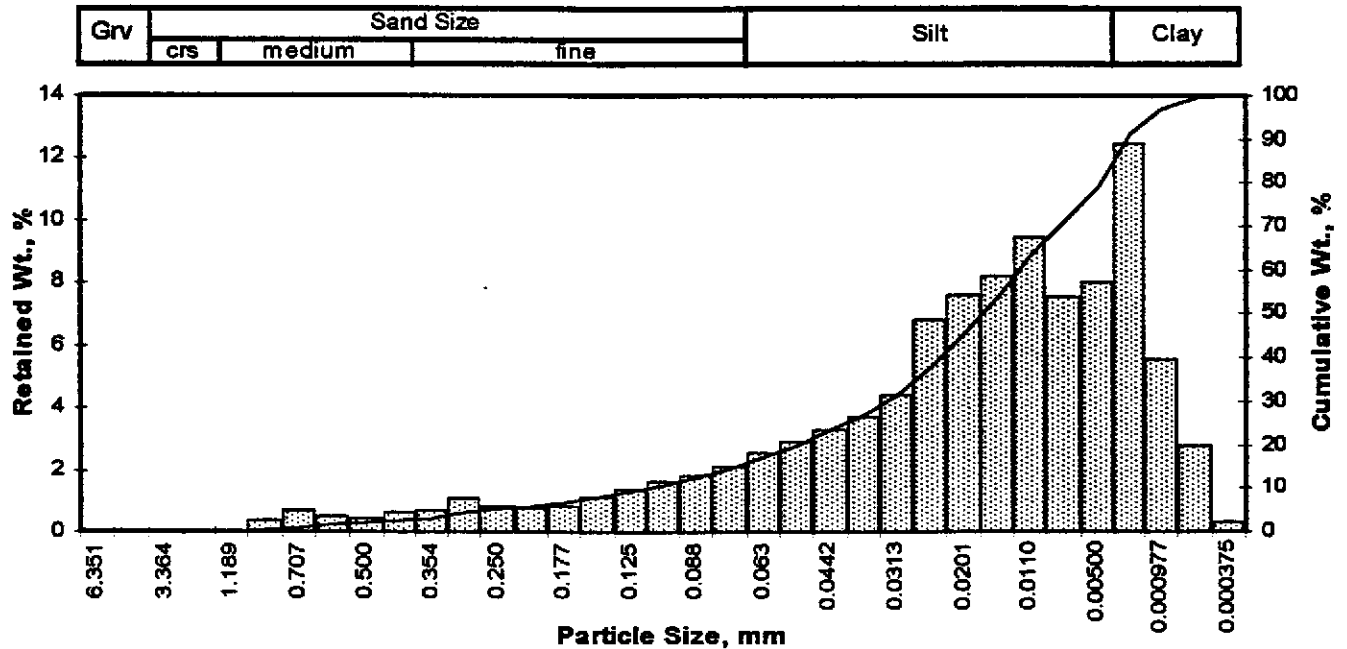
(1) Sample Orientation: H = Horizontal; V = Vertical

(2) Based on a density of 0.9986 g/cc
 (3) Based on a density of 0.7500 g/cc

Vb = Bulk Volume, cc
 Pv = Pore Volume, cc
 ND = Not Detected

Client: Gettler - Ryan
 Project: Tosco #6419
 Project No: 140101.02

PTS File No: 29162
 Sample ID: MW6-6.5
 Depth, ft: 6.50



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.38	0.38	0.38
0.0278	0.707	0.50	25	0.69	0.69	1.07
0.0234	0.595	0.75	30	0.52	0.51	1.59
0.0197	0.500	1.00	35	0.42	0.42	2.01
0.0166	0.420	1.25	40	0.59	0.59	2.60
0.0139	0.354	1.50	45	0.67	0.67	3.27
0.0117	0.297	1.75	50	1.02	1.02	4.29
0.0098	0.250	2.00	60	0.78	0.78	5.07
0.0083	0.210	2.25	70	0.73	0.72	5.79
0.0070	0.177	2.50	80	0.83	0.83	6.62
0.0059	0.149	2.75	100	1.10	1.10	7.72
0.0049	0.125	3.00	120	1.38	1.38	9.10
0.0041	0.105	3.25	140	1.59	1.59	10.69
0.0035	0.088	3.50	170	1.78	1.78	12.47
0.0029	0.074	3.75	200	2.10	2.10	14.57
0.0025	0.063	4.00	230	2.52	2.52	17.09
0.0021	0.053	4.25	270	2.90	2.90	19.99
0.00174	0.0442	4.50	325	3.24	3.24	23.23
0.00148	0.0372	4.75	400	3.71	3.71	26.94
0.00123	0.0313	5.00	450	4.39	4.39	31.33
0.000986	0.0250	5.32	500	6.77	6.77	38.10
0.000790	0.0201	5.64	635	7.59	7.59	45.69
0.000615	0.0156	6.00		8.21	8.21	53.89
0.000435	0.0110	6.50		9.46	9.46	63.35
0.000308	0.00781	7.00		7.53	7.53	70.88
0.000197	0.00500	7.65		8.01	8.01	78.89
0.000077	0.00195	9.00		12.48	12.48	91.37
0.000038	0.000977	10.00		5.57	5.57	96.94
0.000019	0.000488	11.00		2.78	2.78	99.72
0.000015	0.000375	11.38		0.28	0.28	100.00
TOTALS				100.01	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	1.98	0.0100	0.254
10	3.14	0.0045	0.113
16	3.89	0.0027	0.067
25	4.62	0.0016	0.041
40	5.40	0.0009	0.024
50	5.83	0.0007	0.018
60	6.32	0.0005	0.012
75	7.33	0.0002	0.006
84	8.20	0.0001	0.003
90	8.85	0.0001	0.002
95	9.65	0.0000	0.001

Measure	Trask	Inman	Folk-Ward
Median, phi	5.83	5.83	5.83
Median, in.	0.0007	0.0007	0.0007
Median, mm	0.018	0.018	0.018
Mean, phi	5.41	6.05	5.97
Mean, in.	0.0009	0.0006	0.0008
Mean, mm	0.023	0.015	0.016
Sorting	0.391	2.154	2.239
Skewness	0.904	0.101	0.048
Kurtosis	0.155	0.781	1.160
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	2.60
Fine Sand	200	11.97
Silt	>0.005 mm	64.32
Clay	<0.005 mm	21.11
Total		100

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D4464M)

PROJECT NAME: Tosco #6419

PROJECT NO: 140101.02

Sample ID	Depth, ft.	Description USCS/ASTM (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
MW6-6.5	6.5	Silt	0.018	0.00	0.00	2.60	11.97	64.32	21.11	85.43

(1) based on Mean from Trask

DATE

PTS FILE #

CHAIN OF CUSTODY RECORD

PAGE / OF 1

PTS Laboratories, Inc.

1100 Secura Way
Santa Fe Springs, CA 90670
Ph: (562) 907-3607 • Fax: (562) 907-3610

Rick Young

COMPANY: Gettler-Ryan PROJECT MANAGER: Clyde Galantine / Doug Lee

PROJECT NAME: Tosco #6419 FAX NUMBER: (925) 551-7888

PROJECT NUMBER: 140101.02 PHONE NUMBER: (925) 551-7555

SITE LOCATION: Tosco #6419 6401 Dublin Blvd ADDRESS: 6747 Sierra Ct Suite J Dublin CA 94568

SAMPLER SIGNATURE: Clyde Galantine

ANALYSIS REQUEST

PO#

SPECIAL HANDLING

24 HOURS 5 DAYS
72 HOURS NORMAL

OTHER

SAMPLE CONDITIONS

RECEIVED ON ICE YES/NO
SEALED YES/NO
OTHER YES/NO

COMMENTS

PHYSICAL PROPERTIES PACKAGE: API RP40	MOISTURE CONTENT: ASTM D2216	POROSITY: API RP40	GRAIN DENSITY: API RP40	BULK DENSITY: API RP40	AIR PERMEABILITY: API RP40	SPECIFIC RETENTION YIELD ASTM D425	CATION EXCHANGE CAPACITY: EPA 8080	SOIL pH: EPA 8045	GRAIN SIZE: DRY: 400 MESH	GRAIN SIZE: WET/DRY: 20 MICRON	GRAIN SIZE: LASER: 1 MICRON + SIEVE	HYDRAULIC CONDUCTIVITY: EPA 9100: API RP40	TOC: EPA-8000 WALKLEY-BLANK	PERMEABILITY V - ASTM D 5084	NUMBER OF SAMPLES
	X	X		X				X			X		X	X	

SAMPLE ID NUMBER	DATE	TIME	DEPTH, FT
MW 6-6.5	5/10/99	3:20	6.5

REINQUISHED BY: Clyde Galantine
COMPANY: Gettler-Ryan
DATE: 5/11/99 TIME: 9:30

2. RECEIVED BY
COMPANY
DATE TIME

3. RELINQUISHED BY
COMPANY
DATE TIME

4. RECEIVED BY
COMPANY
DATE TIME



FORWARD
INCORPORATED

P.O. Box 6336
1145 W. Charter Way • Stockton, CA 95206
(209) 466-4482 • (800) 204-4242 • FAX (209) 466-1067

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JUL 21 1999

GETTLER-RYAN INC.
GENERAL CONTRACTORS

Via Fax (925) 551-7888

July 19, 1999

Gettler-Ryan, Inc.
Clyde Galantine
6747 Sierra Court, Ste J
Dublin, CA 94568

Re: **FORWARD, INC.** Approval No. 841922
Drill Cuttings from
Tosco# 6419 - 6401 Dublin Blvd, Dublin CA

Dear Mr. Galantine:

FORWARD, INC. is pleased to confirm the disposal of 1.88 tons of material as referenced above. The material was received at our Manteca, California facility for disposal on June 15, 1999. The material was placed in a Class 2 waste management unit.

Approval for this material was based on the information provided in the waste profile and associated materials submitted on behalf of Tosco Marketing Company (Generator). Acceptance of the waste is subject to the "Terms and Conditions" agreed to and signed by the Generator on the Waste Profile Form.

Thank you for the opportunity to be of service. Should you have any questions regarding this matter, please contact me or Customer Service at (800) 204-4242.

Sincerely,

FORWARD, INC.

Brad J. Bonner
Sales Manager

BB/sr