



Chevron U.S.A. Inc.

2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583 0804

Marketing Department

November 14, 1991

Mr. Richard Mueller
Fire Marshall
Pleasanton Fire Department
P.O. Box 520
Pleasanton, CA 94566-0802

**Re: Chevron Service Station #9-0917
5280 Hopyard Road, Pleasanton**

Dear Mr. Mueller:

Enclosed we are forwarding the **Well Installation Report** dated November 7, 1991, prepared by our consultant Groundwater Technology, Inc. (GTI) for the above referenced site. The three (3) existing ground water monitor wells were abandoned in July, 1991, to allow for complete station reconstruction. This report documents the installation and subsequent sampling of three (3) replacement ground water monitor wells.

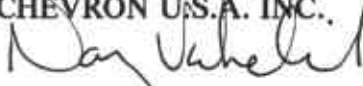
As indicated in the report, three (3) borings were advanced and completed into ground water monitor wells designated MW-1, MW-2 and MW-3. Soil samples collected from the drill cuttings were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and BTEX. The results reported TPH-G from the soil cuttings collected from MW-1 and MW-2 at concentrations of 1 and 3 ppm, respectively. The sample depths of these results were 9 and 12-feet below grade, respectively.

Ground water samples collected were analyzed for TPH-G and BTEX. Analytical results reported benzene concentrations in monitor wells MW-2 and MW-3 at 4,000 and 1,300 ppb, respectively. These results are significantly higher than the results reported from the abandoned monitor wells. We will review City records to assess if any potential off-site sources exist that may be contributing to the contamination in the ground water beneath the site. Depth to ground water was measured at approximately 10-feet below grade, and ground water gradient was calculated to flow in a northwesterly direction. However, previous gradient data has indicated a southerly flow direction. Subsequent ground water monitoring data will confirm the ground water flow direction.

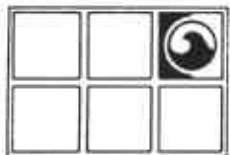
Based on this data, Chevron recommends reinitiating a quarterly ground water monitoring program. Upon establishing ground water flow direction, Chevron will instruct GTI to permit and install additional ground water monitor wells to delineate the extent of the hydrocarbon contamination in the ground water. A work plan will be prepared proposing the additional assessment work and forwarded to your office for your review.

Page 2
November 14, 1991

If you have any questions or comments, please do not hesitate to contact me at (510) 842-9581.

Very truly yours,
CHEVRON U.S.A. INC.,

Nancy Vukelich
Environmental Engineer

cc: Mr. Eddy So, RWQCB-Bay Area
Ms. Sandra Lindsey, GTI-Concord
Mr. M.R. Purcell
File (9-0917A2)



GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

November 7, 1991

Project No. 020301616

Ms. Nancy Vukelich
Chevron U.S.A. Inc.
P.O. Box 5004
San Ramon, CA 94583

Subject: Well Installation Report
Chevron Service Station No. 9-0917
5280 Hopyard Road
Pleasanton, California.

Dear Ms. Vukelich:

Enclosed are three copies of Groundwater Technology, Inc.'s Well Installation Report for the above-referenced site. The scope of work included the installation of three groundwater monitoring wells and subsequent groundwater sampling. The results presented in the report indicate that concentrations of petroleum hydrocarbons were detected in monitoring wells MW-2 and MW-3. Figure 2 in the report shows the former station construction superimposed over the new station construction.

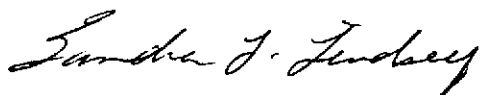
The groundwater flow direction calculated from the data collected on September 16, 1991 appears to be northwesterly. Previous data indicated a southerly flow direction. Subsequent groundwater monitoring data should verify the actual groundwater flow direction.

The next monitoring and sampling event is scheduled for December 16, 1991. Once the groundwater flow direction is determined, recommendations for additional well installation locations can be evaluated. If the groundwater flow direction is to the south there is a potential for the plume to have migrated off site.

Ms. Nancy Vukelich
November 7, 1991
Page 2

If you have any questions or comments regarding the contents of the report, please contact me at (510)
671-2387.

Sincerely,
GROUNDWATER TECHNOLOGY, INC.



Sandra L. Lindsey
Project Manager

SLL:ac

Enclosure

R1616A1.SLL
(020522)



**GROUNDWATER
TECHNOLOGY, INC.**

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2287

FAX: (415) 685-8148

**WELL INSTALLATION REPORT
CHEVRON SERVICE STATION NO. 9-0917
5280 HOPYARD ROAD
PLEASANTON, CALIFORNIA**

NOVEMBER 7, 1991

Prepared for:

Ms. Nancy Vukelich
Chevron U.S.A. Inc.
P.O. Box 5004
San Ramon, California 94583

R1616A1.SLL
(020522)



GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2087

FAX: (415) 665-0148

WELL INSTALLATION REPORT CHEVRON SERVICE STATION NO. 9-0917 5280 HOPYARD ROAD PLEASANTON, CALIFORNIA

NOVEMBER 7, 1991

Prepared for:

Ms. Nancy Vukelich
Chevron U.S.A. Inc.
P.O. Box 5004
San Ramon, CA 94583

Prepared by:

GROUNDWATER TECHNOLOGY, INC.
4057 Port Chicago Highway
Concord, CA 94520

Sandra L. Lindsey
Project Manager



Kevin Sullivan
Professional Engineer
No. C46253

R1616A1.SLL
(020522)

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WELL INSTALLATION REPORT
CHEVRON SERVICE STATION NO. 9-0917
5280 HOPYARD ROAD
PLEASANTON, CALIFORNIA

NOVEMBER 7, 1991

INTRODUCTION

This report presents the results and findings of Groundwater Technology, Inc.'s groundwater monitoring well installation program performed at Chevron Service Station No. 9-0917 located at 5280 Hopyard Road in Pleasanton, California (Figure 1). This well installation was performed under Work Release No. 573-9020 issued by Ms. Nancy Vukelich of Chevron U.S.A. Inc. This project was specifically intended to replace the three groundwater monitoring wells that were abandoned for the station reconstruction in July 1991. The scope of work included the installation of three, on-site groundwater monitoring wells, the collection and analyses of soil and groundwater samples, and the preparation of this report.

BACKGROUND

SITE HISTORY

The underground fuel storage tanks at Chevron Service Station No. 9-0917 were replaced with single-walled fiber glass tanks in 1983. During the tank replacement procedures, two monitoring wells were installed in the tank backfill area. In 1989, routine monitoring of the backfill monitoring wells indicated the presence of separate-phase hydrocarbons in one of the wells. Groundwater Technology was contracted at that time to install three groundwater monitoring wells to assess if the separate-phase hydrocarbons detected in the backfill well extended into the adjacent subsurface materials.

After the installation of the groundwater monitoring wells, a quarterly monitoring and sampling program was implemented from August 1989 to September 1990. Analytical results of the groundwater samples collected quarterly indicated that concentrations of benzene were consistently at or below 1 part per billion. Based on the low concentrations of apparent adsorbed or dissolved hydrocarbons at this site it was recommended that Chevron pursue site closure. Before initiating site closure, the site was scheduled for reconstruction in July 1991. For site reconstruction to proceed, the three existing monitoring wells were destroyed. Copies of the well destruction permit and compliance letter submitted to Zone 7, Alameda County Flood Control and Water Conservation District are included in Appendix A.

This current phase of work was initiated to replace the wells which were destroyed prior to the site reconstruction. Figure 2 (Site Plan) shows the location of the former well locations, new well locations, former site configuration, and new site configuration.

SITE SETTING

Chevron Service Station No. 9-0917 is located on the southern corner of the intersection of Hopyard Road and Owens Drive in Pleasanton, California (Figure 1). The land around the site is completely developed; primarily with hotels, restaurants and other service stations. The nearest body of surface water to the site is the Chabot Canal, located approximately 1,000 feet east of the site.

The site is located approximately one-and-one half miles east of Dublin Canyon in the Amador Valley. The surface elevation at the site is approximately 325 feet above mean sea level. The area is nearly flat with no natural significant topographic features within one mile of the site.

SITE HYDROGEOLOGY

Previous subsurface work conducted at this site has shown that the sediments underlying the site primarily consist of dark-gray to brown silts and clays with scattered occurrences of fine sand. Groundwater is present beneath the site at approximately 11 feet below grade and appears to be unconfined. The primary water-bearing zone is apparently a dark-gray, clayey silt encountered between 4 and 8 below grade. Groundwater monitoring data collected prior to the installation of the new wells indicated that groundwater beneath the site flowed to the south.

SCOPE OF WORK

Subsurface soil and groundwater conditions at the site were investigated to assess the possible presence and extent of gasoline hydrocarbons beneath the site. The following is a summary of the work performed for this investigation:

- Obtained a well installation permit from Zone 7 to install three groundwater monitoring wells. A copy of this permit is included in Appendix B.
- Examined subsurface soil and groundwater conditions by drilling and logging three, on-site soil borings.
- Completed the three soil borings as 2-inch-diameter, polyvinyl chloride (PVC) groundwater monitoring wells.
- Subcontracted a professional surveyor to establish the wellhead locations and elevations.
- Developed the monitoring wells and collected groundwater samples for laboratory analysis.
- Prepared this summary report.

MONITORING WELL INSTALLATION

Soil Borings. Three soil borings were drilled on August 22, 1991, for the installation of groundwater monitoring wells. The locations of the three soil borings (MW-1, MW-2, and MW-3) are shown on Figure 2. The boring locations were selected to assess the possible presence of dissolved gasoline hydrocarbons in the groundwater beneath the site. Each boring was drilled using a truck-mounted, rotary drill-rig with 8.5-inch outside-diameter, hollow stem augers. Drilling was supervised by a Groundwater Technology field geologist who maintained a continuous log of the materials encountered in accordance with the Unified Soil Classification System. Copies of the drilling logs are included in Appendix C.

Soil samples were screened in the field for volatile hydrocarbons using a photo-ionization detector (PID). Based on field screening results, changes in lithology, and proximity to the water table, soil samples selected from the total core were retained for possible laboratory analysis. These samples were collected in 2-inch-diameter by 6-inch-long clean brass tubes. The tubes were sealed with aluminum foil, capped, and sealed with plastic tape. Retained samples were labeled, stored on ice

in an insulated cooler, and transported under chain-of-custody protocol to the Superior Analytical Laboratories, Inc. facility in Martinez, California. The soil samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX), and for total petroleum hydrocarbons (TPH)-as-gasoline using U.S. Environmental Protection Agency (EPA) Methods 5030/8020/8015. Copies of the laboratory report and chain-of-custody record are included in Appendix D.

Monitoring Well Construction. Groundwater monitoring wells were installed in all three boreholes (MW-1, MW-2, and MW-3). The wells were constructed of 2-inch-diameter, 0.020-inch machine-slotted Schedule 40 PVC well screen and blank casing. A well filter pack consisting of Lapis Lustre No. 2/12 sand was placed in the annular space of the wells from the bottom of the boring to approximately 1 to 2 feet above the screened interval. The wells were completed with a 2-foot layer of hydrated bentonite pellets above the filter packs. A cement surface seal was set above the bentonite layers, sealing the wells to grade surface. Each wellhead was equipped with a locking plug and encased in a traffic rated street box. The three wells each have a total depth of 25 feet below grade surface. Well construction details are presented on the drilling logs included in Appendix C.

Monitoring Well Development, Sampling, and Survey. On September 16, 1991, the newly installed groundwater monitoring wells MW-1, MW-2, and MW-3 were developed, monitored, sampled, and surveyed. The groundwater monitoring wells were developed using a combination of bailing and surging. Groundwater Technology used a truck-mounted surge block and bailer system to develop the wells. The development water from monitoring wells MW-1 and MW-3 was sufficiently free of sediments after approximately 40 gallons of water was bailed from each well. Although the groundwater purged from monitoring well MW-2 was initially very turbid, with continued surging and bailing, the water cleared up sufficiently after approximately 55 gallons were removed. The development water was placed in three steel drums which are being stored on-site pending proper disposal.

After development, the monitoring wells were allowed to recover to at least 80 percent of their static volume before sampling. The groundwater samples were collected with a Teflon[®] bailer and placed 40-milliliter glass vials, acidified to ensure a pH below 2.0, then sealed with a Teflon[®] septa screw caps. The samples were transported under chain-of-custody protocol to the Superior Analytical Laboratories facility in Martinez for BTEX and TPH-as-gasoline analysis using EPA Methods 5030/8020/8015.

On September 16, 1991, water level measurements were collected before the wells were developed and after the wells had been sampled. The wells were professionally surveyed by Fremont Engineers, licensed surveyors, to establish wellhead elevation and location.

SUBSURFACE CONDITIONS

The subsurface conditions at the site were assessed by collecting and analyzing soil samples, measuring groundwater levels, and analyzing groundwater samples collected from the monitoring wells.

SOILS

The subsurface materials encountered during this investigation consisted primarily of silty clays. A 1- to 3/4-foot-thick sand lens was encountered approximately 15 feet below grade surface in the boring for well MW-~~2~~⁵. This sand lens was not encountered in any other boreholes. Chemical analyses of the soil samples detected hydrocarbons constituents in two of the four samples submitted. The analytical results of the soil sample collected from boring MW-~~7~~⁴ at a depth of 12 feet (MW-1B) indicated the presence of TPH-as-gasoline at 1 part per million (ppm). The analytical result of the soil sample collected from boring MW-~~2~~⁵ at a depth of 9 feet below grade (MW-2A) indicated the presence of TPH-as-gasoline at 3 ppm. Though the results of the two samples show low concentrations of TPH-as-gasoline, the response pattern present in the chromatogram is atypical of the standard gasoline hydrocarbon pattern. In particular, a set of peaks are present both before and after the gasoline hydrocarbon range, indicating a suite of hydrocarbons both lighter and heavier than normal gasoline-range hydrocarbons. The analytical results for soil samples MW-2B and MW-3B indicated that concentrations of BTEX and TPH-as-gasoline were below the method detection limits. Table 1 presents a summary of the analytical data.

GROUNDWATER

Groundwater was encountered in all three boreholes at approximately 13 feet below grade. The subsequent monitoring of the site indicated that the static water level is approximately 10 to 11 feet below grade surface. The monitoring and wellhead elevation data were combined to determine groundwater elevation, flow direction, and gradient information. The data indicates that the groundwater gradient is to the northwest at approximately 0.002 feet per foot (ft/ft). Table 2

presents the surveyed wellhead elevations along with groundwater monitoring data. The survey notes and groundwater data sheet are included in Appendix E. The groundwater monitoring data collected on September 16, 1991 were used to prepare the Potentiometric Surface Map (Figure 3).

The analytical results of the groundwater sample obtained from well MW-2 indicated that concentrations of BTEX and TPH-as-gasoline were detected at 4,000 ppb, 29 ppb, 1,600 ppb, 92 ppb, and 12,000 ppb, respectively. The analytical results of the groundwater sample collected from well MW-3 indicated that concentrations of BTEX and TPH-as-gasoline were detected at 1,300 ppb, 3.9 ppb, 550 ppb, 78 ppb, and 6,200 ppb, respectively. Concentrations of the above mentioned constituents were below the method detection limits in the groundwater sample collected from well MW-1. Table 3 presents a summary of the groundwater analytical results. Figure 4 depicts the distribution of dissolved petroleum hydrocarbons detected in groundwater samples collected on September 16, 1991.

SUMMARY

Soil data collected from the drilling of three soil borings at Chevron Service Station No. 9-0917 indicate that the underlying sediments consist mainly of silty clay with occasionally occurrences of clayey sand and sandy clay. Analytical results of the soil samples collected from the soil borings indicate the presence of low concentrations of an atypical gasoline hydrocarbon pattern outside the gasoline hydrocarbon range.

Groundwater monitoring data collected on September 16, 1991, indicated that the groundwater flow direction is to the northwest with a gradient of .002 ft/ft. This data is inconclusive and additional groundwater monitoring data will verify the groundwater flow direction and gradient. Previous groundwater monitoring data collected from the wells that were abandoned in April 1991 indicated a groundwater flow direction to the south with a gradient of .02 ft/ft.

The analytical results of the groundwater samples collected from the newly installed monitoring wells indicate that concentrations of BTEX and TPH-as-gasoline were detected in the samples collected from monitoring wells MW-2 and MW-3. Benzene concentrations were detected in groundwater samples collected from wells MW-2 and MW-3 at 4,000 ppb and 1,300 ppb, respectively.

LIST OF FIGURES

- FIGURE 1 SITE LOCATION MAP
- FIGURE 2 SITE PLAN
- FIGURE 3 POTENTIOMETRIC SURFACE MAP
- FIGURE 4 DISSOLVED PETROLEUM HYDROCARBON CONCENTRATION MAP

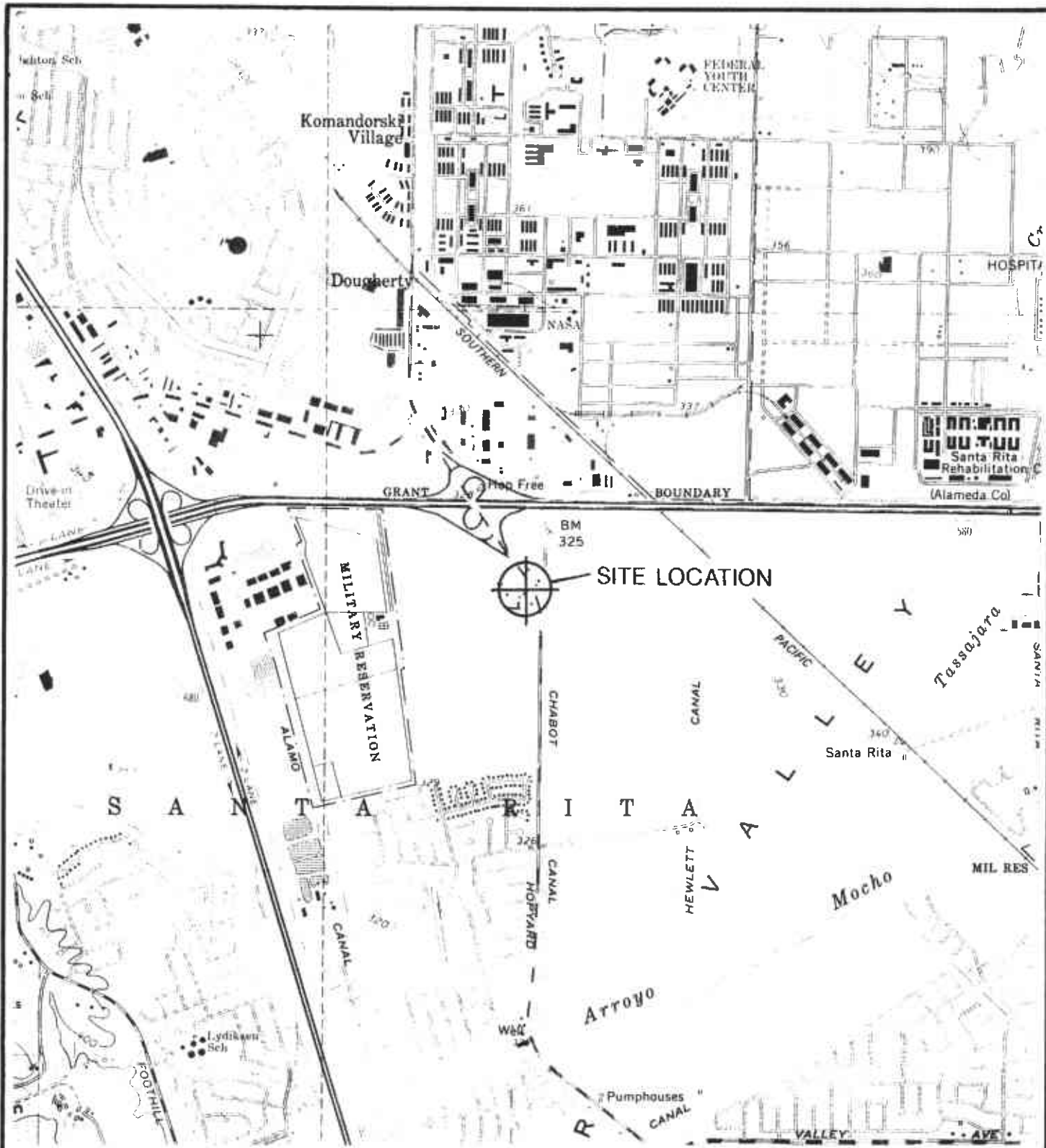


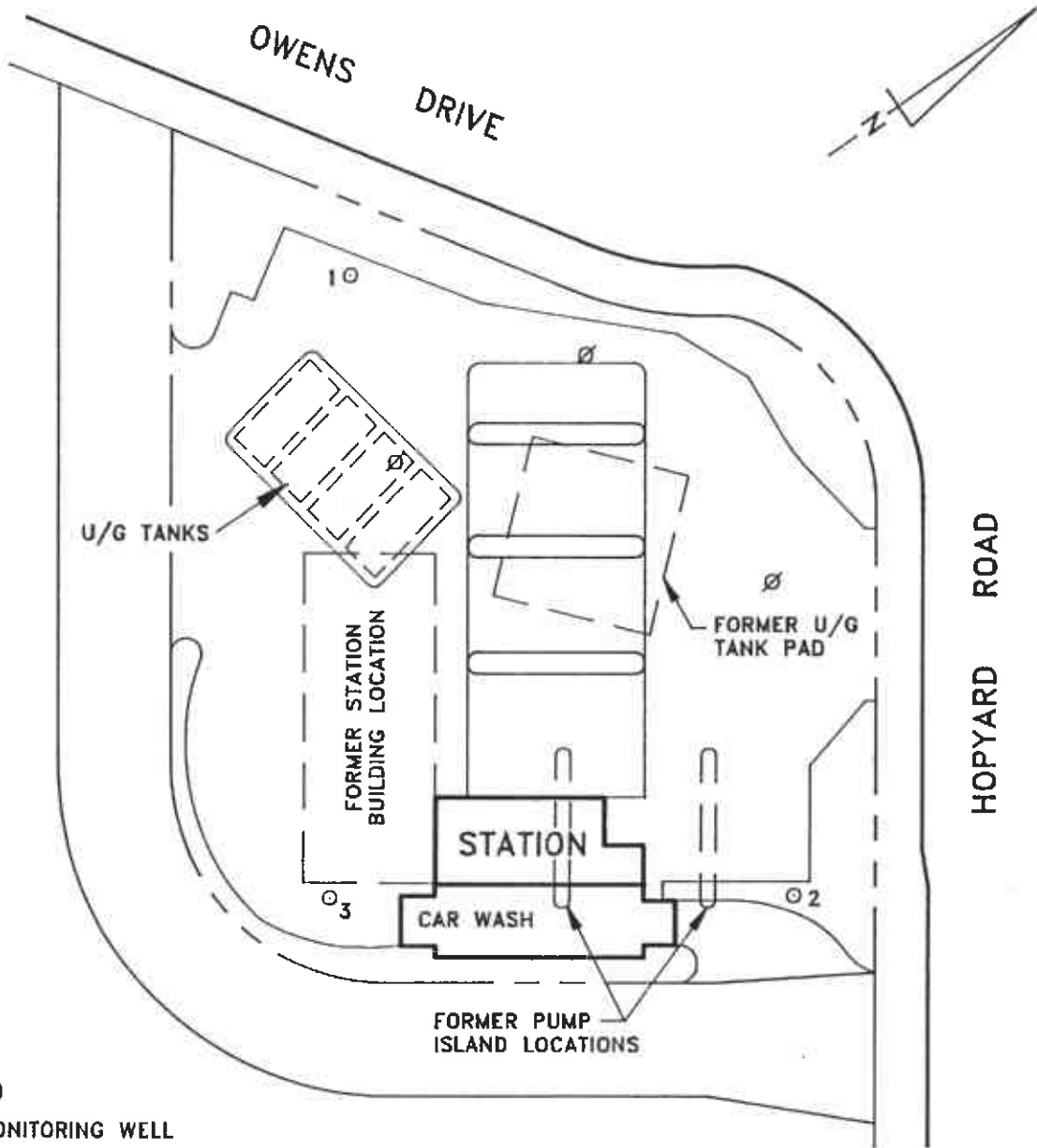
FIGURE 1
SITE LOCATION MAP

CHEVRON U.S.A. Inc.
SERVICE STATION #9-0917
5280 HOPYARD ROAD
PLEASANTON, CALIFORNIA

DRAWN BY ML 10/91



GROUNDWATER
TECHNOLOGY, INC.



LEGEND

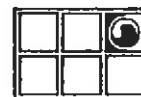
- MONITORING WELL
- ∅ ABANDONED MONITORING WELL
(ABANDONED ON 4/18-19/91)

**FIGURE 2
SITE PLAN**

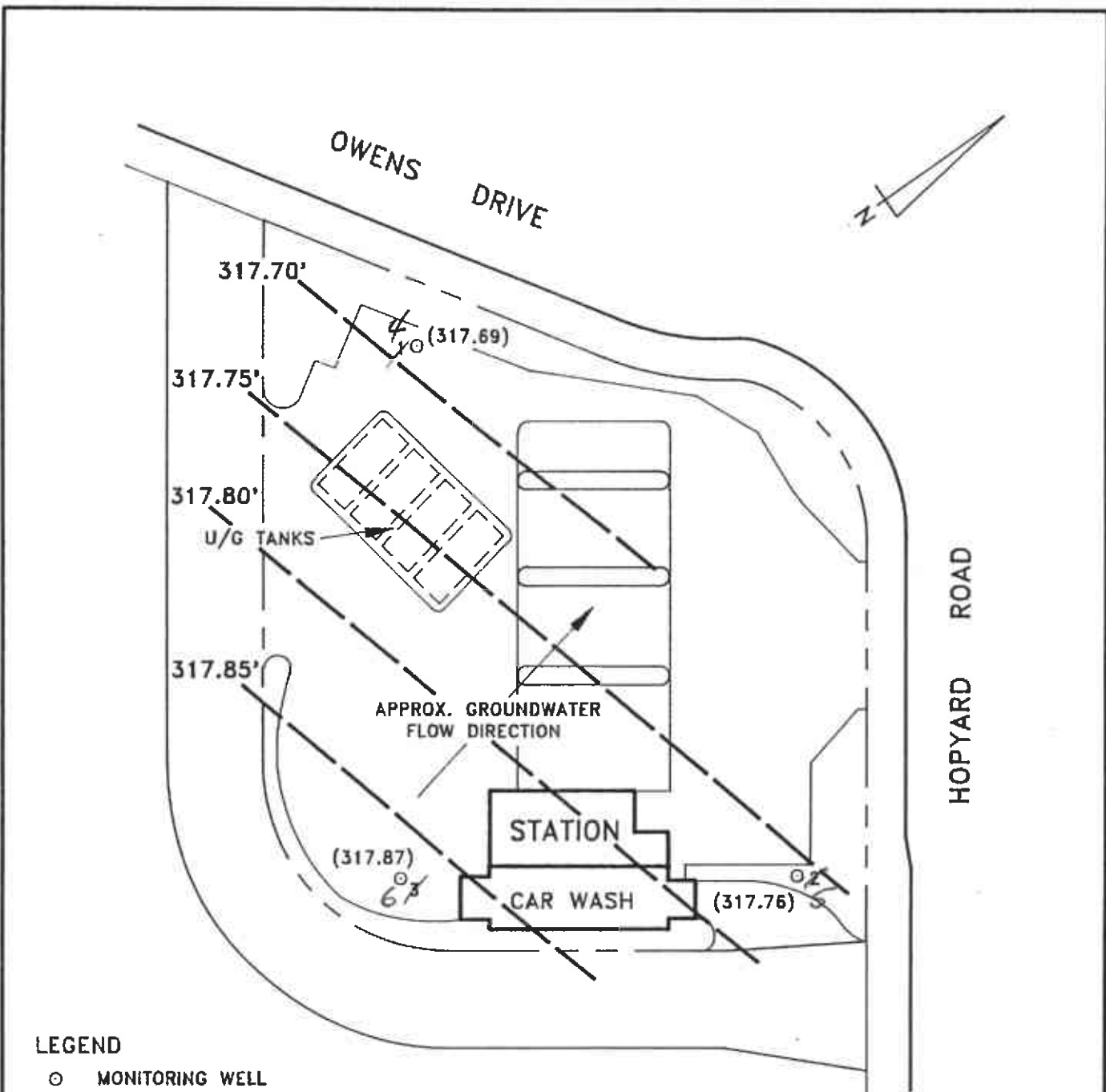


CHEVRON U.S.A. Inc.
SERVICE STATION #9-0917
5280 HOPYARD ROAD
PLEASANTON, CALIFORNIA

DRAWN BY: ML 10/23/91



**GROUNDWATER
TECHNOLOGY, INC.**



LEGEND

- MONITORING WELL
- () POTENTIOMETRIC SURFACE ELEVATION
- POTENTIOMETRIC SURFACE CONTOUR

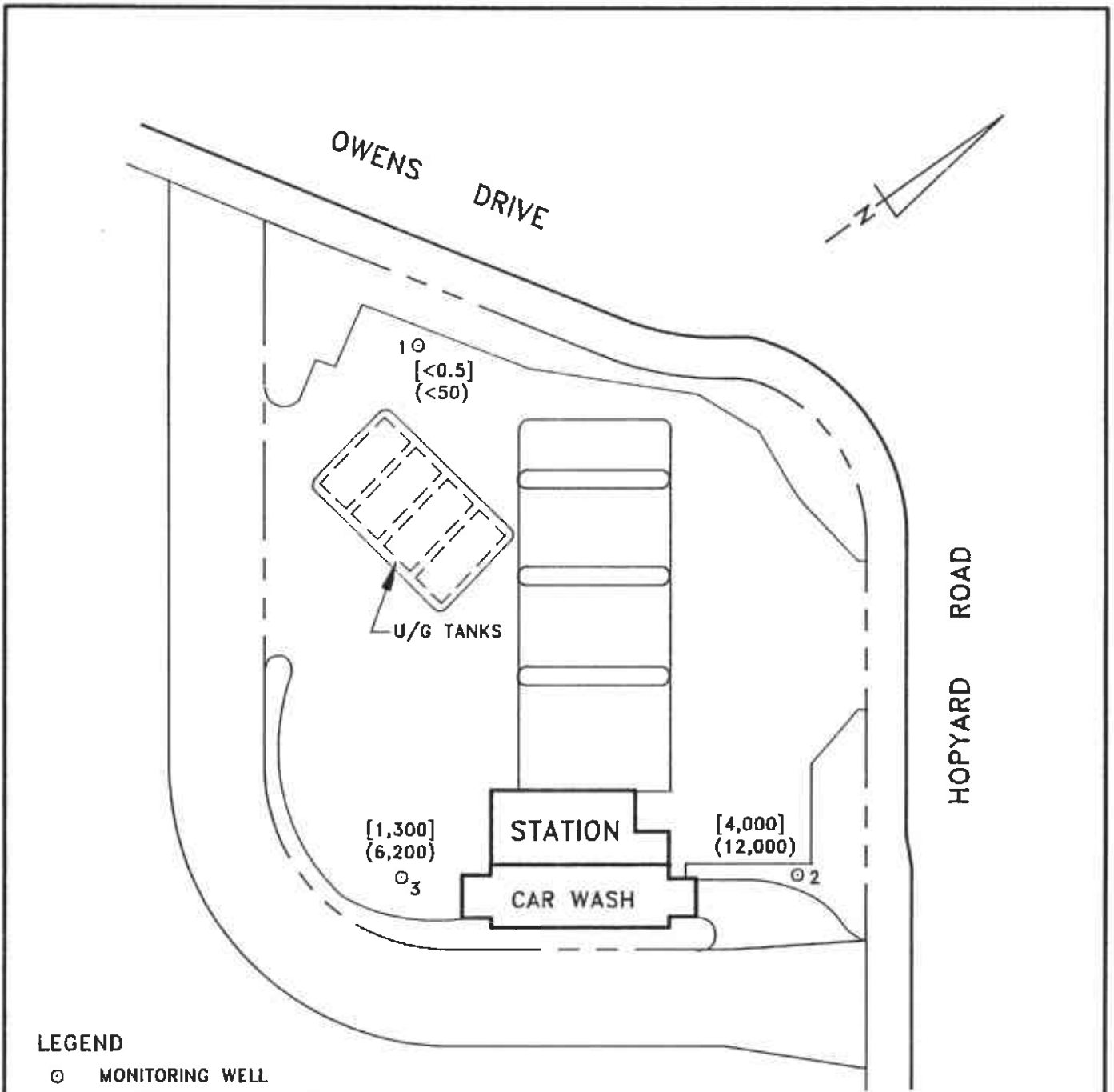
**FIGURE 3
POTENTIOMETRIC SURFACE MAP
(9/16/91)**



CHEVRON U.S.A. Inc.
SERVICE STATION #9-0917
5280 HOPYARD ROAD
PLEASANTON, CALIFORNIA

DRAWN BY: ML 10/31/91





LEGEND

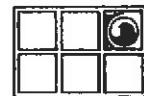
- ⊙ MONITORING WELL
- [] BENZENE CONCENTRATION [ppb]
- () TPH-AS-GASOLINE CONCENTRATION (ppb)

FIGURE 4
DISSOLVED PETROLEUM HYDROCARBON CONCENTRATION MAP
(9/16/91)

0 FEET 40

CHEVRON U.S.A. Inc.
 SERVICE STATION #9-0917
 5280 HOPYARD ROAD
 PLEASANTON, CALIFORNIA

DRAWN BY: ML 10/29/91



GROUNDWATER
TECHNOLOGY, INC.

LIST OF TABLES

TABLE 1	SOIL SAMPLE ANALYTICAL RESULTS
TABLE 2	GROUNDWATER LEVEL DATA
TABLE 3	GROUNDWATER SAMPLE ANALYSIS RESULTS

TABLE 1
 SOIL SAMPLE ANALYTICAL RESULTS
 SAMPLES COLLECTED ON AUGUST 22, 1991
 (Concentrations in parts per million)

SAMPLE I.D.	DEPTH IN FEET	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE
MW-1B	12.0	<0.005	0.010	<0.005	<0.005	*1
MW-2A	9.0	<0.005	0.022	<0.005	<0.005	*3
MW-2B	13.0	<0.005	<0.005	<0.005	<0.005	<1
MW-3B	12.5	<0.005	<0.005	<0.005	<0.005	<1

TPH = Total petroleum hydrocarbons

* = Typical gasoline chromatographic pattern was not present in the sample.

TABLE 2
GROUNDWATER LEVEL DATA

MONITORING WELL	DATE	REFERENCED ELEVATION (From TOC)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (MSL)
MW-1	9/16/91	327.28	9.59	317.69
MW-2	9/16/91	327.82	10.06	317.76
MW-3	9/16/91	328.48	10.61	317.87

TOC = Top of well casing
MSL = Mean sea level

TABLE 3
GROUNDWATER SAMPLE ANALYTICAL RESULTS
SAMPLES COLLECTED SEPTEMBER 16, 1991
 (Concentrations in parts per billion)

SAMPLE I.D.	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE
MW-1	<0.5	<0.5	<0.5	<0.5	<50
MW-2	4,000	29	1,600	92	12,000
MW-3	1,300	3.9	550	78	6,200

TPH = Total petroleum hydrocarbons

APPENDIX A

WELL ABANDONMENT PERMIT AND COMPLIANCE LETTER



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

17 April 1991

Groundwater Technology
4057 Port Chicago Highway
Concord, CA 94520

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91203 for the destruction of wells 3S/1E 6Q4, 6Q5 and 6Q6 at 5280 Hopyard Road in Pleasanton for Chevron USA.

Please note that permit condition A-2 requires that a well destruction report be submitted after completion of the work for each well. Each report should include a description of methods and materials used to destroy the well, location sketch, date of destruction, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield

Craig A. Mayfield
Water Resources Engineer

WH:mm
Enc.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 5280 Hopyard Rd Pleasanton, CA

PERMIT NUMBER 91203 LOCATION NUMBER 3S/1E 6Q4 to 6Q6

CLIENT Name Chevron U.S.A. Inc Address P.O. Box 5004 Phone 942-9581 City San Ramon CA Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT Name Glen L. Mitchell Groundwater Technology Inc Address 4057 Port Chicago H. Way Phone 671-2382 City Concord, CA Zip 94520

A. GENERAL

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

TYPE OF PROJECT Well Construction Geotechnical Investigation Cathodic Protection General Water Supply Contamination Monitoring Well Destruction X Drill out 3,22' deep ground water monitoring wells

B. WATER WELLS, INCLUDING PIEZOMETERS

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

PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other Municipal Irrigation

DRILLING METHOD: Mud Rotary Air Rotary Auger X Cable Other

DRILLER'S LICENSE NO. C434343

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

WELL PROJECTS Drill Hole Diameter In. Maximum Casing Diameter 4 In. Depth 21 ft. Surface Seal Depth ft. Number 3

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

GEOTECHNICAL PROJECTS Number of Borings Maximum Hole Diameter In. Depth ft.

- E. WELL DESTRUCTION. See attached.

ESTIMATED STARTING DATE 4/18/91 ESTIMATED COMPLETION DATE 4/14/91

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

Approved Wyman Hong Date 15 Apr 91

APPLICANT'S SIGNATURE Glen L. Mitchell Date 4/10/91

16 April 1991

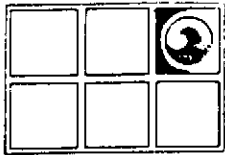
ZONE 7
WATER RESOURCES ENGINEERING
GROUNDWATER PROTECTION ORDINANCE

CHEVRON U.S.A.
5280 HOPYARD ROAD
PLEASANTON
WELLS 3S/1E 6Q4 TO 6Q6
PERMIT 91203

Destruction Requirements

1. Drill out the well so that casing, seal, and gravel pack are removed to the bottom of the well.
2. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
3. After seal has set, backfill the remaining hole with compacted material.

These destruction requirements as proposed by Glen Mitchell of Groundwater Technology meet or exceed the Zone 7 minimum requirements.



**GROUNDWATER
TECHNOLOGY, INC.**

COPY

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

April 25, 1991

Job No. 203 175 3284 02

Mr. Wyman Hong
Alameda County Flood Control and
Water Conservation District
5997 Parkside Drive
Pleasanton, CA 94588

Subject: Well Abandonment
Chevron Service Station No. 9-0917
5280 Hopyard Road, Pleasanton, California.

Dear Mr. Hong:

On April 18 and 19, 1991, Groundwater Technology, Inc. completed the abandonment of the three groundwater-monitoring wells at the above-mentioned site. This abandonment was performed under Groundwater Protection Ordinance Permit Number 91203. A copy of this permit along with a map of the site showing the locations of the former wells are attached.

The wells were drilled out using hollow-stem augers to a depth below the base of the completed wells, approximately 21-feet below grade surface. Once all the well materials, including the well casing and filter pack were removed, the boreholes were sealed with neat cement grout emplaced with a tremie pipe. After the tremied grout was allowed to set, the boreholes were capped with additional cement to completely seal them to grade surface.

If you have any questions or require any additional information, please contact our Concord office at (415) 671-2387.

Sincerely,
GROUNDWATER TECHNOLOGY, INC.

Glen L. Mitchell
Project Geologist

Sandra L. Lindsey
Project Manager

GLM:SLL:sd

Attachments

cc: Ms. Nancy Vukelich, Chevron U.S.A. Inc.
L3284E



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 5280 Hopyard Rd Pleasanton, CA

PERMIT NUMBER 91203 LOCATION NUMBER 3S/1E 6Q4 to 6Q6

AGENT: Cheung U.S.A. Inc, P.O. Box 5004, San Ramon, CA, Phone 947-4531, Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT: Glen L. Mitchell, Groundwater Technology Inc, 4057 Port Chicago Highway, Concord, CA, Phone 925-2332, Zip 94520

A. GENERAL

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

TYPE OF PROJECT: Well Construction, Geotechnical Investigation, Cathodic Protection, General, Water Supply, Contamination, Monitoring, Well Destruction, PROPOSED WATER SUPPLY WELL USE: Domestic, Industrial, Other, Municipal, Irrigation

B. WATER WELLS, INCLUDING PIEZOMETERS

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

DILLING METHOD: Mud Rotary, Air Rotary, Auger, Other

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

DRILLER'S LICENSE NO. C434343

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

WELL PROJECTS: Drill Hole Diameter, Casing Diameter, Surface Seal Depth, Maximum Depth, Number

- E. WELL DESTRUCTION. See attached.

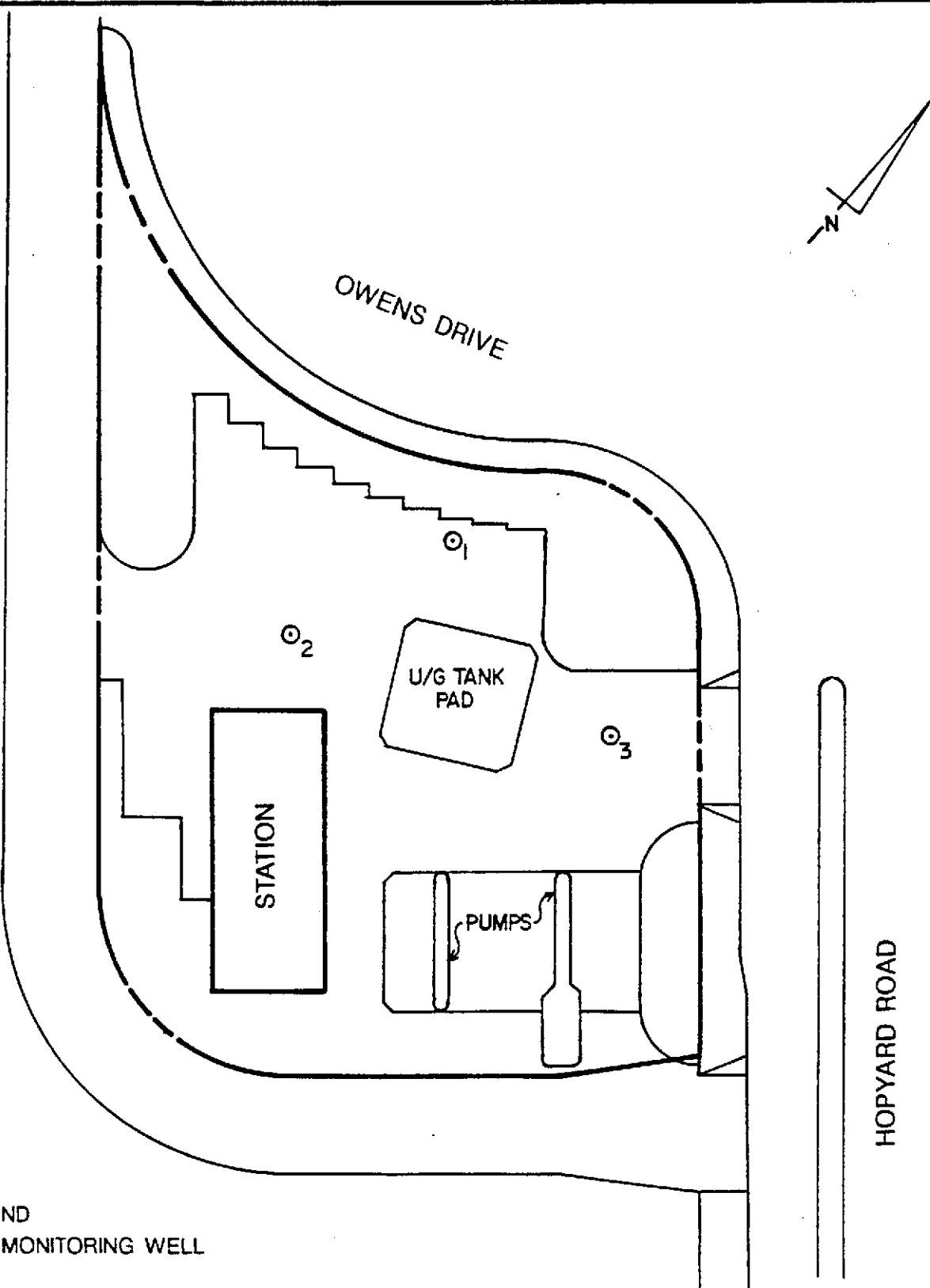
GEOTECHNICAL PROJECTS: Number of Borings, Hole Diameter, Maximum Depth

ESTIMATED STARTING DATE 4/18/91 ESTIMATED COMPLETION DATE 4/14/91

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

Approved: Wyman Hong, Date 15 Apr 91

APPLICANT'S SIGNATURE: Glen L. Mitchell, Date 4/10/91



HOPYARD ROAD

LEGEND
⊙ MONITORING WELL

FIGURE 2. SITE PLAN

0 FEET 40

CHEVRON U.S.A.
PLEASANTON, CALIFORNIA

APPENDIX B
WELL INSTALLATION PERMIT



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 5280 Hopyard Rd Pleasanton CA

PERMIT NUMBER 91463 LOCATION NUMBER

CLIENT name Chevron U.S.A. Inc Address P.O. Box 5004 Phone 842-1000 City San Ramon CA Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT name Glen L. Mitchell Groundwater Technology Inc Address 4057 Port Chicago Blvd Phone 671-2387 City Concord CA Zip 94520

TYPE OF PROJECT Well Construction Geotechnical Investigation Cathodic Protection General Water Supply Contamination Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other Municipal Irrigation

DRIILLING METHOD: Mud Rotary Air Rotary Auger Other

DRILLER'S LICENSE NO. C434343

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 25 ft. Surface Seal Depth 6 ft. Number 3

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

ESTIMATED STARTING DATE 8/18/91 ESTIMATED COMPLETION DATE 8/29/91

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

APPLICANT'S SIGNATURE Date 8/9/91

- A. GENERAL 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date. B. WATER WELLS, INCLUDING PIEZOMETERS 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet. C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete placed by tremie. E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 16 Aug 91

APPENDIX C
DRILLING LOGS

Drilling Log

Monitoring Well MW-4



Project: CHV/5280 Hayward Road Owner: Chevron USA, Inc.
 Location: Pleasanton, CA Project Number: 020331651
 Date Drilled: 08/22/91 Total Depth of Hole: 25.0 ft. Diameter: 8.5 in.
 Top of Casing: _____ Water Level Initial: 13.0 ft. Static: 9.54 ft.
 Screen: Dia 2.0 in. Length 15 ft. Slot Size 0.020 in.
 Casing: Dia 2.0 in. Length 10 ft. Type SCH 40 PVC
 Filter Pack Material Lapis Lustre #2/12 Rig/Core Type Mobile B-53/Continuous Core
 Drilling Company Sierra Pacific/C-57 434343 Drill/Mon. Method Hollow Stem Flight Auger
 Driller Manuel Araullo Log By Craig Robertson
 Geologist/Engineer Ed Simonis License No RG# 4422

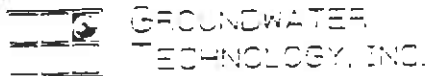
See Site Map
For Spring Location

NOTES:

Depth (feet)	Well Completion	Sample ID	Blow Count/ % Recovery	Graphic Log	Description (Color, Texture, Structure)
0					Four inches CONCRETE
2					Brown mottled grey CLAY (medium stiff, damp)
4					
6					
8		A			Dark olive grey silty CLAY (soft, wet)
10					
12		B			
14					Encountered water at 13.0 feet on 8/22/91 (1055 hours).
16					(grades sandy, saturated)
18		C			(grades to medium brown)
20					(grades to brown)
22					
24					
26					End of boring at 25.0 feet. Constructed groundwater monitoring well.

Drilling Log

Monitoring Well MW-⁶~~2~~



Project: CHV/S280 Hayward Road Owner: Chevron USA, Inc.
 Location: Pleasanton, CA Project Number: 020301661
 Date Drilled: 03/22/91 Total Depth of Hole: 25.0 ft. Diameter: 2.5 in.
 Top of Casing: _____ Water Level Initial: 13.5 ft. Static: 12.25 ft.
 Screen: Dia 2.0 in. Length: 15 ft. Slot Size: 0.020 in.
 Casing: Dia 2.0 in. Length: 10 ft. Type: SCH 40 PVC
 Filter Pack Material: Lapis Lustre #2/12 Rig/Core Type: Mopile B-53/Continuous Core
 Drilling Company: Sierra Pacific/C-57 434343 Drill/Mon. Method: Hollow Stem Flight Auger
 Driller: Manuel Arcullo Log By: Craig Robertson
 Geologist/Engineer: Ed Simonis License No: RG# 4422

See Site Map
For Spring Location

NOTES:

Depth (feet)	Well Completion	Sample ID	Blow Count/ % Recovery	Graphic Log	Soil Class	Description (Color, Texture, Structure)		
0			*			Brownish grey CLAY (medium stiff, damp)		
2								
4								
6								Very dark brown silty CLAY (medium stiff, damp)
8								
10		A						
12			B				d	
14								Encountered water at 13.5 feet on 8/22/91 (1630 hours). Olive CLAY with very fine SAND (soft, wet)
16								
18		C						Dark olive grey CLAY with trace fine gravel (medium stiff, wet) Grey CLAY (stiff, wet)
20								
22								
24								
26								End of boring at 25.0 feet. Constructed groundwater monitoring well.

APPENDIX E
SURVEY NOTES AND MONITORING DATA

#3948

LOCATION OF NEW MONITORING WELLS
 @ HOPKINS ROAD & OWENS DRIVE
 CHEVRON STATION - PRESENTATION
 FOR GROUNDWATER TECHNOLOGY INC.
 P.O. # 120380

BENCHMARK - CHISELED CROSS @ NOSE OF
 MEDIAN ISLAND ON THE TOP OF CURB
 OF HOPKINS ROAD SOUTHERLY SIDE
 OF OWENS DR
 ▼ ELEVATION = 327.55

LEGEND

- ⊙ NEW MONITORING WELL
- ▼ BENCHMARK LOCATION
- & SURV. @ BEGIN & END OF BASELINE

Pt #	Hex. CRT	Hor. Dist.	RIM ELEVATION	TOP/PVC ELEVATION
		A @ A	BS B	w/0°00'00"
MW-1	107-27-05	75.31	327.49	327.28 TOP 2" PVC
MW-2	347-33-10	118.59	328.09	327.82 TOP 2" PVC
MW-3	34-04-00	137.42	328.68	328.48 TOP 2" PVC

MONITORING
 POINTS

FB 191
 79
 SEPTEMBER 16, 1991

NOTE: ELEVATIONS TAKEN ON
 TOP 2" PVC @ BLACK MARK
 ON NORTHERLY RIM. WELL
 NUMBERS PROVIDED BY
 GROUNDWATER TECHNOLOGY INC.

