



**FOURTH QUARTER 2002
GROUNDWATER MONITORING
REPORT**

3/28/03

**GOLDEN GATE PETROLEUM
HAYWARD BULK PETROLEUM
DISTRIBUTION FACILITY
HAYWARD, CALIFORNIA**

Bonkowski & Associates, Inc.
6400 Hollis Street, Suite 4
Emeryville, California 94608

March 28, 2003

March 28, 2003
L98184



BONKOWSKI & ASSOCIATES, INC.
Geotechnical Services and
Hazardous Materials Management

Corporate Headquarters
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Ms. Wenche Lier
Golden Gate Petroleum
501 Shell Avenue
Martinez, CA 94553

**Subject: Fourth Quarter 2002 Groundwater Monitoring Report
Hayward Bulk Distribution Facility, Hayward, California**

Dear Ms. Lier:

Enclosed is the report summarizing Bonkowski & Associates, Inc. review of the fourth quarter 2002 groundwater monitoring data at the Hayward Bulk Petroleum Distribution Facility in Hayward, California. This report presents the results of the investigative work and chemical testing, the laboratory reports and Chain-of-Custody records, the groundwater well sampling records, and a site location map and site plan with groundwater flow direction.

We appreciate the opportunity to be of service on this project. Please call Tony Choi at (510) 450-0770 if you have any questions or need any additional information.

Sincerely,

Tony Choi
Assistant Project Geologist

Cynthia A. Dittmar, RG 7213
Project Engineer

Enclosure
TC: cd

cc: Mr. Scott Seery, ACHCS

GROUNDWATER MONITORING REPORT FOURTH QUARTER 2002

Hayward Bulk Petroleum Distribution Facility Hayward, California



SITE DESCRIPTION

Golden Gate Petroleum Hayward Bulk Petroleum Distribution Facility is located at 1565 Industrial Parkway West in Hayward, California (Figure 1). The facility is located along the north side of Industrial Parkway West in an area zoned for industrial and commercial use. It has been used for the retail sale of gasoline and petroleum fuel products since approximately 1960. The Site presently has three (3) 20,000-gallon fiberglass underground fuel storage tanks (USTs) and nine (9) dispenser islands that dispense diesel, unleaded regular, plus unleaded, and premium unleaded regular gasoline (Figure 2). Previous investigations of the Site have encountered groundwater in silt, silty clays, and silty sand combinations from depths of 10 to 18 feet below (Bonkowski & Associates, Inc. [B&A], 1999). Seven (7) monitor wells have been installed at the site for the purpose of groundwater monitoring. Site history information can be found in the Preliminary Site Assessment Report (B&A, 2002).

GROUNDWATER MONITORING FIELD ACTIVITIES

Dates of field activities:	December 4, 2002 (monitoring and sampling)
Wells inspected:	MW-1 through MW-7
Wells sampled:	MW-1 through MW-7
Water analyses:	TPHD and TPHMO (DHS LUFT), TPHG, BTEX, MTBE, DIPE, ETBE, TAME, EDB and 1,2-DCA (EPA 8260B)
Laboratory:	Sequoia Analytical (Sacramento, California)
Groundwater elevations:	Ranged from -0.88 ft (MW-1) to -1.20 ft (MW-7) above mean sea level
Flow direction/gradient:	0.001 ft/ft radially away from MW-5 (toward the east)
Separate phase hydrocarbons (SPH):	None observed

GROUNDWATER MONITORING RESULTS

TPHG concentrations:	0.50 mg/l (MW-3)
TPHD concentrations:	Up to 0.29 mg/l (MW-2)
TPHMO concentrations:	Up to 5.0 mg/l (MW-4)
Benzene concentrations:	1.2 µg/l (MW-2)
Toluene and ethylbenzene concentrations:	< 0.50 µg/l in all wells
Total xylenes concentrations:	< 1.0 µg/l in all wells
MTBE concentrations:	Up to 520 µg/l (MW-3)
TAME concentrations:	Up to 1.7 µg/l (MW-3 and MW-7)
ETBE, DIPE, 1,2-DCA, and EDB concentrations:	< 0.50 µg/l in all wells
TBA concentrations:	< 5.0 µg/l in all wells

DISCUSSION

Separate phase hydrocarbons were not observed in wells MW-1 through MW-7 during fourth quarter 2002 monitoring activities. TPHG was detected in well MW-3, where its concentration exceeded the State taste and odor threshold. TPHD was detected above Federal taste and odor threshold in wells MW-2 and MW-7. Concentrations of Benzene exceeded the California MCL in well MW-2. MTBE was detected above California secondary MCL in wells MW-2, MW-3, and MW-7. Toluene, ethylbenzene, total xylenes, ETBE, DIPE, TBA, 1,2-DCA, and EDB were not detected above laboratory reporting limits.

ATTACHMENTS

- Summary of Monitor Well Construction Details and Groundwater Elevations (Table 1)
- Groundwater Chemical Test (EPA 8260B and DHS LUFT) Results (Table 2)
- Site Location (Figure 1)
- Site Plan (Figure 2)
- Location of Former USTs (Figure 3)
- Potentiometric Surface Elevation Contour Map, December 4, 2002 (Figure 4)
- TPHD Isoconcentration Contours, December 4, 2002 (Figure 5)
- TPHMO Isoconcentration Contours, December 4, 2002 (Figure 6)
- MTBE Isoconcentration Contours, December 4, 2002 (Figure 7)
- Monitor Well Sampling Forms (Appendix A)
- Laboratory Analytical Report and Chain-of-Custody Forms (Appendix B)
- Groundwater Monitoring and Sampling Protocols (Appendix C)

CERTIFICATION

This report has been prepared by the staff of Bonkowski & Associates, Inc. and has been reviewed and approved by the professionals whose signatures appear below.


The findings, recommendations, specifications, or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted engineering practice in Northern California at the time this report was prepared. No other warranty is either expressed or implied.

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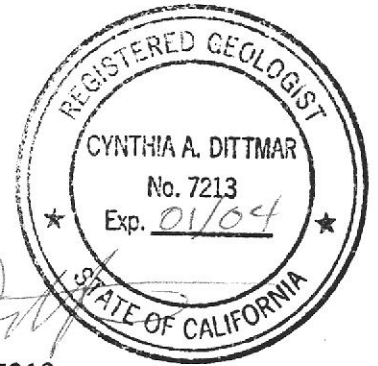
BONKOWSKI & ASSOCIATES, INC.



Tony Choi
Assistant Project Geologist



Cynthia A. Dittmar, RG 7213
Project Geologist



**Table 1. Summary of Monitor Well Construction Details and Groundwater Elevations
Golden Gate Petroleum Hayward Cardlock, Hayward, California.**

Well No.	Well Casing Diameter (inches)	Total Depth (feet)	Geologic Units Monitored	Depth of Screened Interval (feet)	Top of Casing Elevation (feet amsl)	Depth to Water (feet)	Potentiometric Surface Elevation (feet amsl)	Date
MW-1	2	31.5	silty clay, organic-rich clay sandy clay, clay	10-30	10.43	11.31	-0.88	12/4/2002
						11.38	-0.95	10/9/2002
MW-2	2	26.5	sandy gravel clay, sand	10-25	10.98	12.05	-1.07	12/4/2002
						12.13	-1.15	10/9/2002
MW-3	2	26.5	base gravel, clay, gravelly sand, silty sand, sandy gravel, clay	10-25	11.17	12.19	-1.02	12/4/2002
						12.31	-1.14	10/9/2002
MW-4	2	25	pea gravel, sand	10-25	11.36	12.38	-1.02	12/4/2002
						12.64	-1.28	10/9/2002
MW-5	2	31.5	silty gravel, gravelly clay, silty clay, clay, sand	10-30	11.41	12.23	-0.82	12/4/2002
						12.38	-0.97	10/9/2002
MW-6	2	31.5	fill gravel, clay, clayey gravel	10-30	10.86	11.78	-0.92	12/4/2002
						11.92	-1.06	10/9/2002
MW-7	2	26.5	gravel, silt, clay, sand	10-25	10.78	11.98	-1.20	12/4/2002
						12.02	-1.24	10/9/2002

amsl - above mean sea level (National Geodetic Vertical Datum 1929)

Table 2. Groundwater Chemical Test (EPA 8015M and EPA 8260B) Results, Golden Gate Petroleum Hayward Cardlock, Hayward, California.

Sample Number	TPHG (mg/l)	TPHD (mg/l)	TPHMO (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)	TAME (µg/l)	ETBE (µg/l)	DIPE (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2-DCA (µg/l)	EDB (µg/l)	Date Sampled
MW-1	<0.050	<0.050	<0.10	<0.50	<0.50	<0.50	<1.0	0.54	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	10/9/2002
MW-2	<0.050	0.29	<0.10	1.2	<0.50	<0.50	<1.0	7.8	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	ND	0.48	0.12 ^c	1.9	ND	ND	0.54	8.8	ND	ND	ND	ND	--	--	ND	ND	10/9/2002
MW-3	0.50	<0.050	0.56 ^c	<0.50	<0.50	<0.50	<1.0	520	1.7	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	0.62 ^a	0.17 ^b	ND	ND	ND	ND	ND	890	2.9	ND	ND	7.6	--	--	ND	ND	10/9/2002
MW-4	<0.050	<0.25	5.0 ^{c,d}	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	ND	0.18 ^b	ND	ND	ND	ND	ND	1.0 ^d	ND	ND	ND	ND	--	--	ND	ND	10/9/2002
MW-5	<0.050	<0.050	0.22 ^d	<0.50	<0.50	<0.50	<1.0	2.0	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	ND	ND	ND	ND	ND	ND	ND	0.59	ND	ND	ND	ND	--	--	ND	ND	10/9/2002
MW-6	<0.050	0.053 ^b	<0.10	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	<0.50	0.73	0.16 ^c	110	11	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	ND	ND	10/9/2002
MW-7	<0.050	0.14 ^b	<0.10	<0.50	<0.50	<0.50	<1.0	170	1.7	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2003
	0.34 ^a	0.49	0.13 ^c	ND	ND	ND	ND	480	5.1	ND	ND	ND	--	--	ND	ND	10/9/2002
Regulatory Standard	0.005 ¹	0.1 ²		1.0 ³	42 ²	29 ²	17 ²	5 ⁴							12 ⁵		

- 1 -- Taste and odor threshold (SWRCB)
- 2 -- Taste and odor threshold (U.S. EPA)
- 3 -- California Primary MCL
- 4 -- California Secondary MCL
- 5 -- California Action Level

^a Hydrocarbon pattern does not resemble gasoline.

^b Hydrocarbon pattern does not resemble diesel.

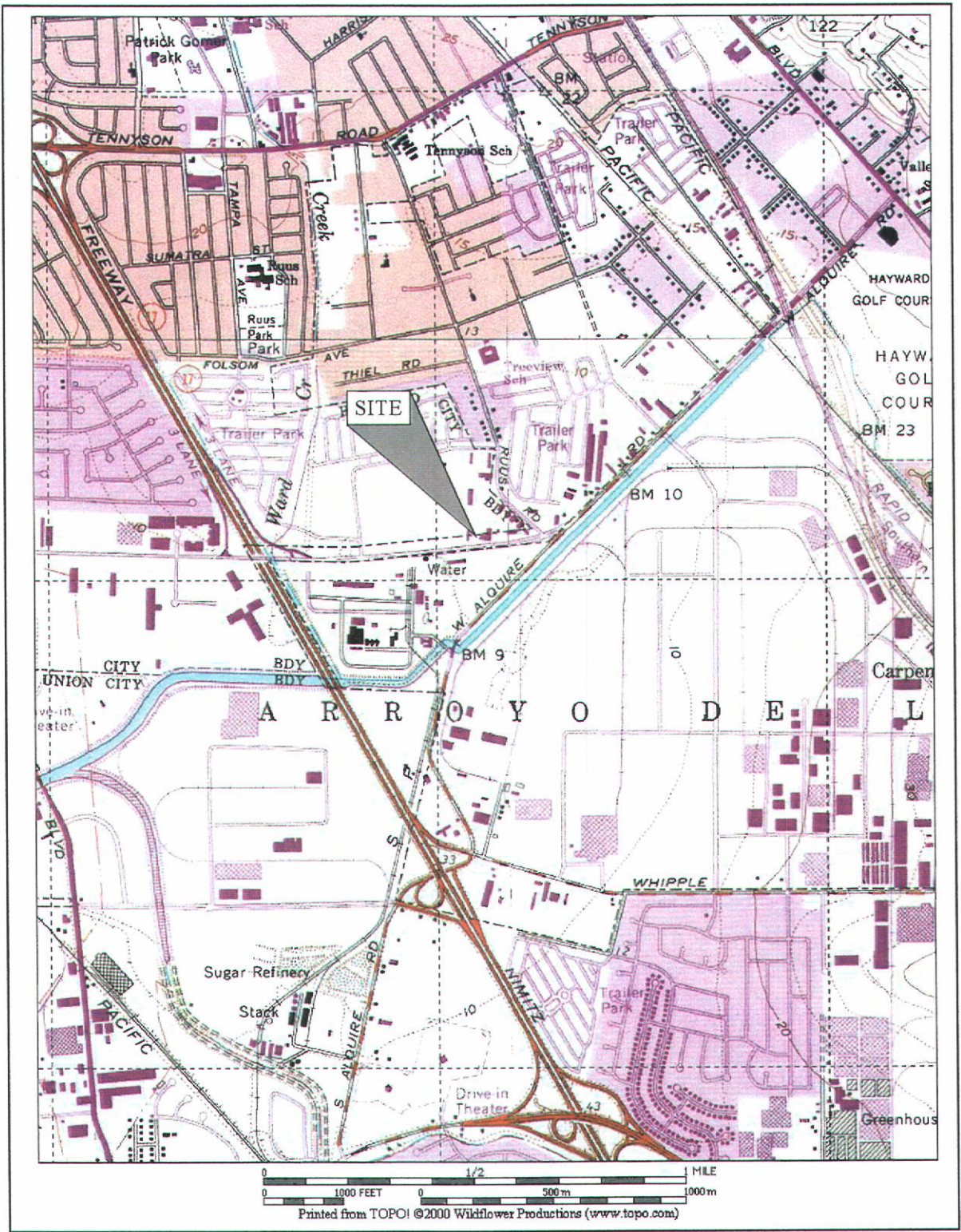
^c Hydrocarbon pattern does not resemble motor oil.

^d Coeluting compounds interfered with surrogate recovery

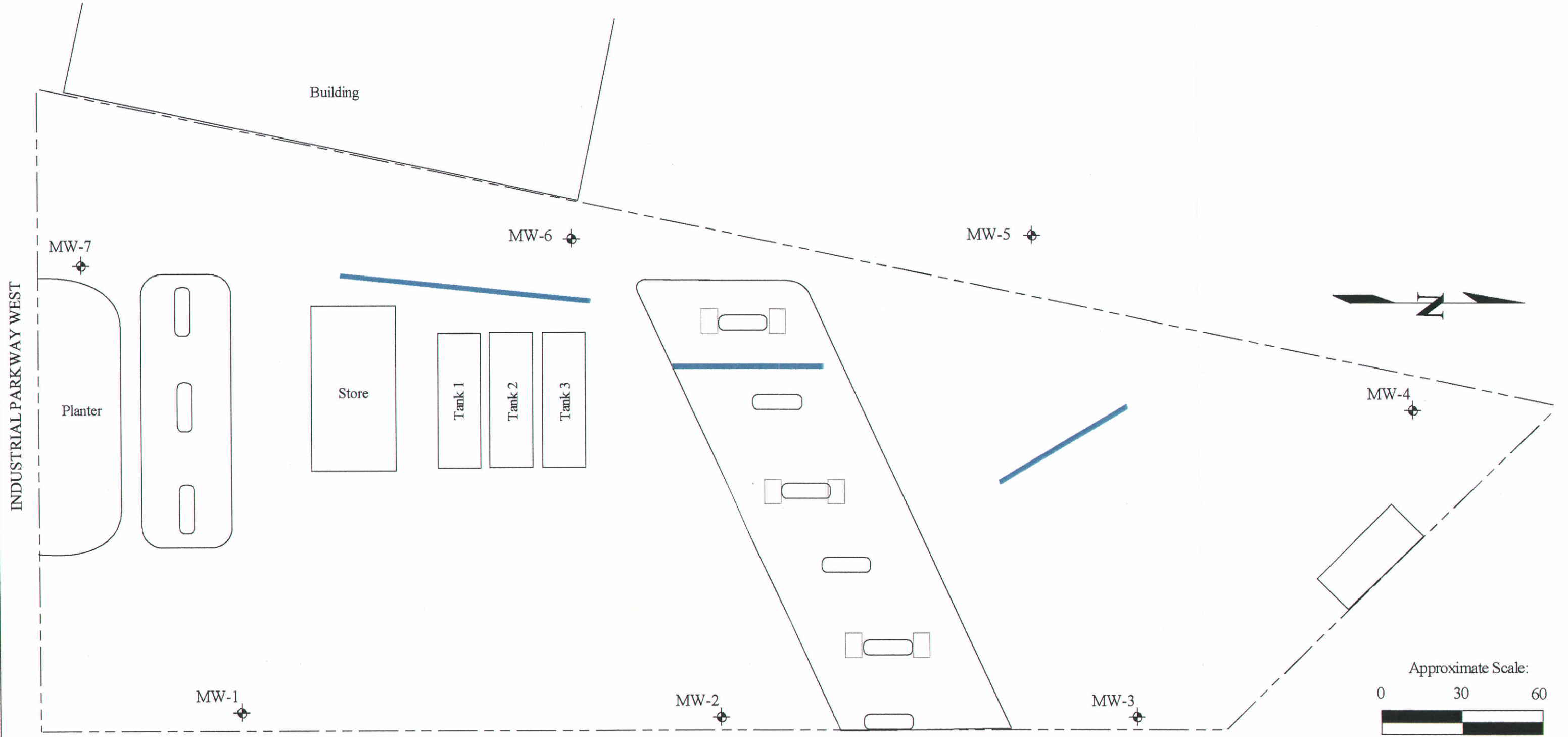
<0.50 -- Not detected above lab reporting limit of 0.50

ND -- Not detected above lab reporting limit


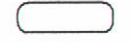


-- Not analyzed



Project No. L98184	Golden Gate Petroleum	SITE LOCATION 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 1
Bonkowski & Associates, Inc.			

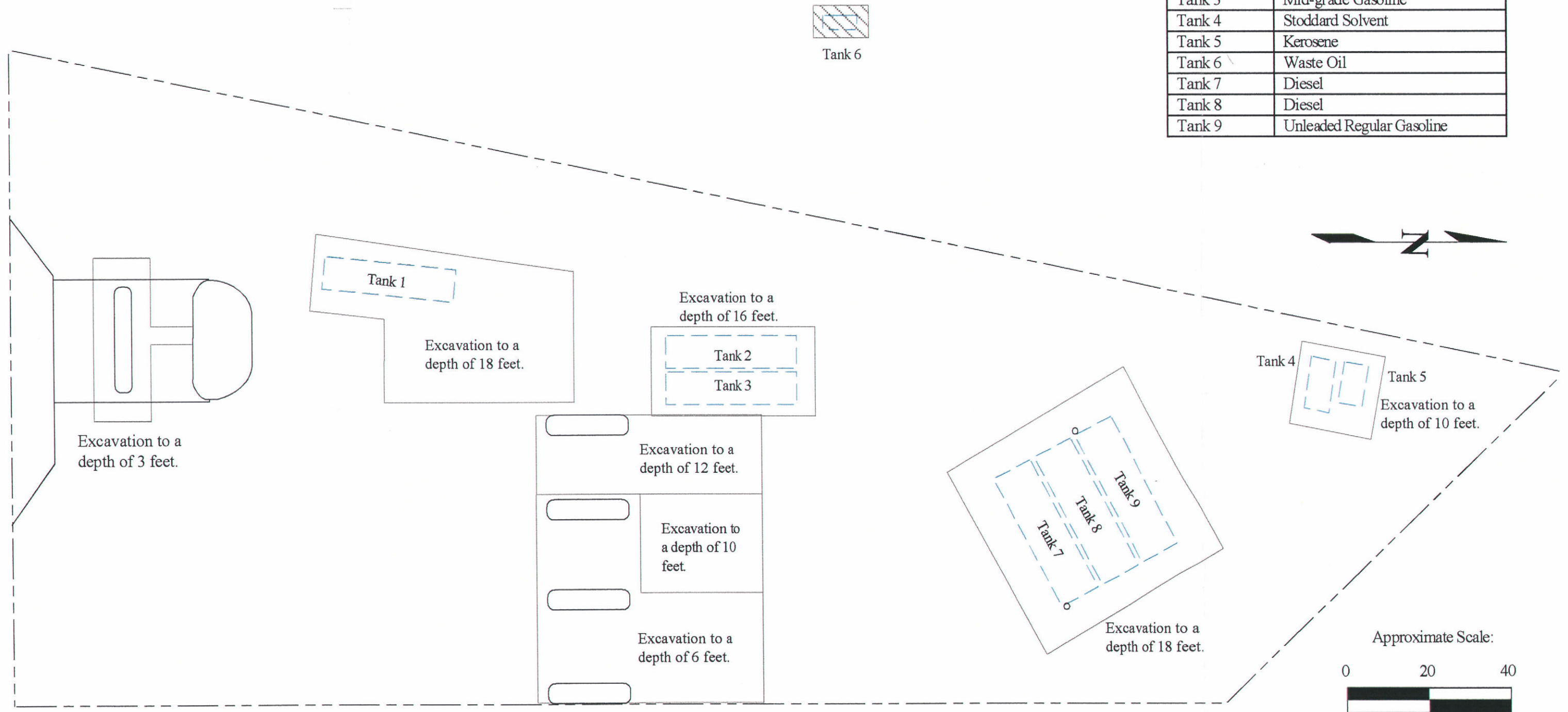


LEGEND

- MW-1  Monitor well
-  Dispenser Island
-  Conopy footing
-  Collector Trench

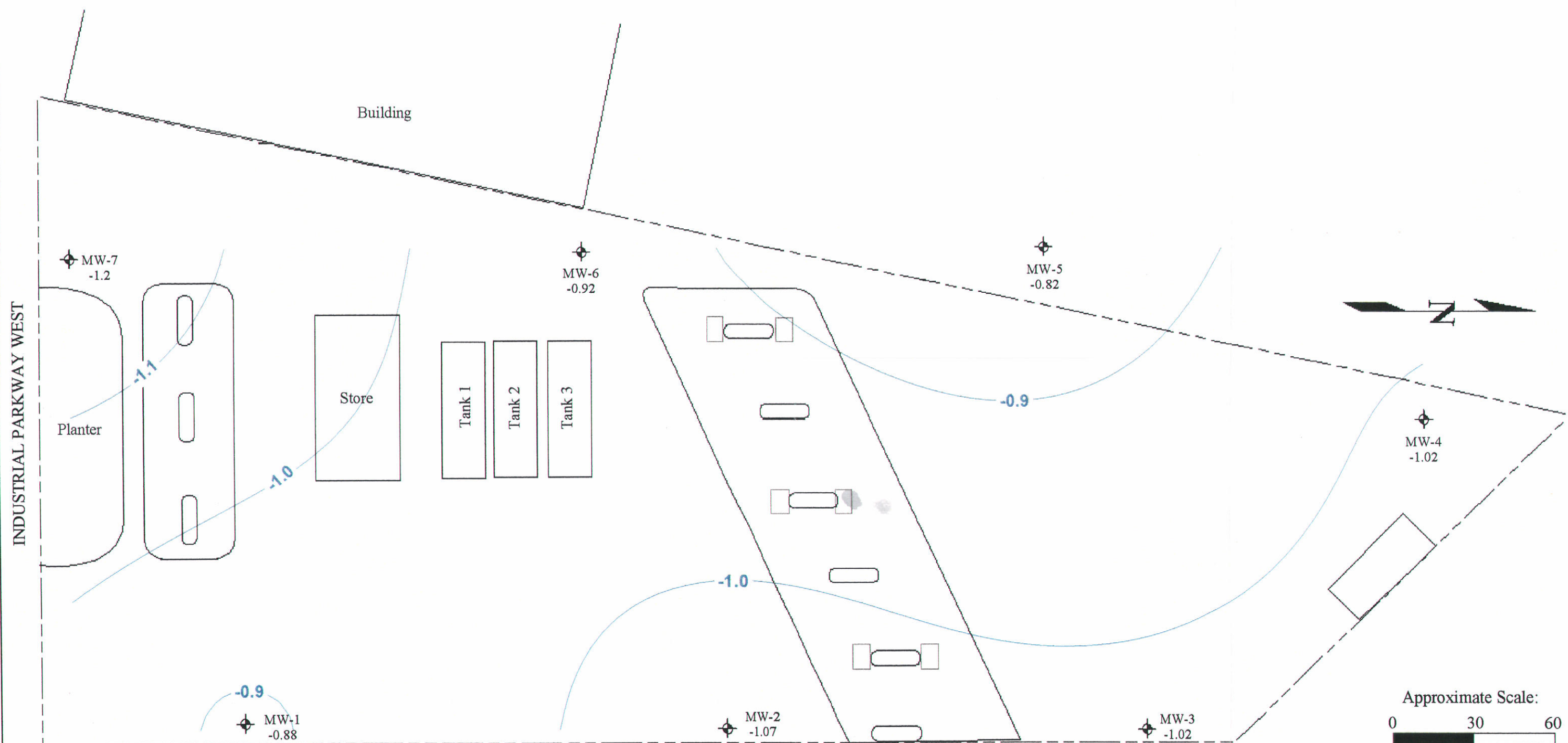
Project No. L98184	Golden Gate Petroleum	SITE PLAN 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 2
Bonkowski & Associates, Inc.			

Tank	Contents
Tank 1	Premium Gasoline
Tank 2	Red Diesel
Tank 3	Mid-grade Gasoline
Tank 4	Stoddard Solvent
Tank 5	Kerosene
Tank 6	Waste Oil
Tank 7	Diesel
Tank 8	Diesel
Tank 9	Unleaded Regular Gasoline



Project No. L98184	Golden Gate Petroleum	LOCATION OF FORMER USTs 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 3
Bonkowski & Associates, Inc.			

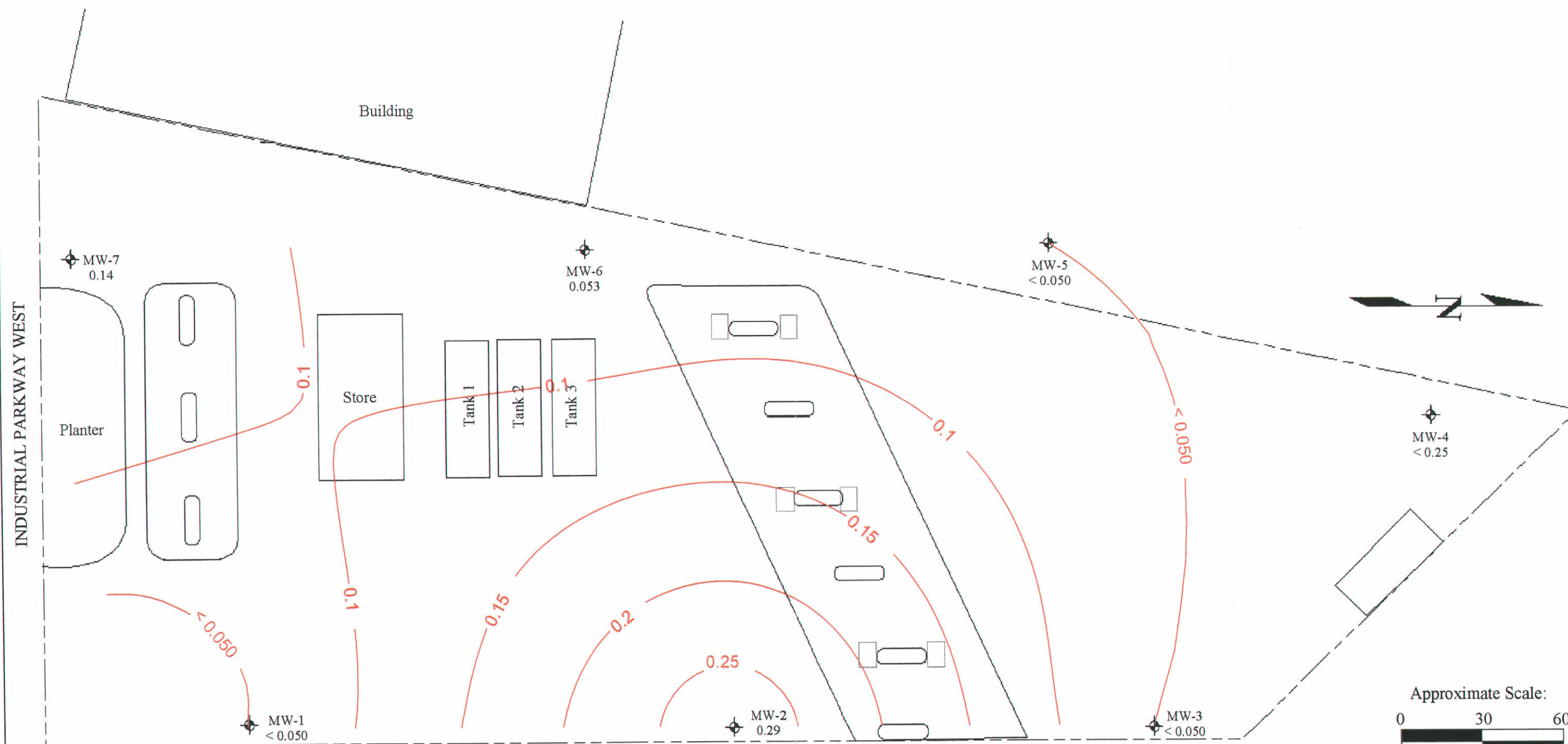
INDUSTRIAL PARKWAY WEST



LEGEND

- MW-1 Monitor well
- 1.07 Potentiometric Surface Elevation Above Mean Sea Level
(National Geodetic Vertical Datum 1929)
- Dispenser Island
- Canopy Footing

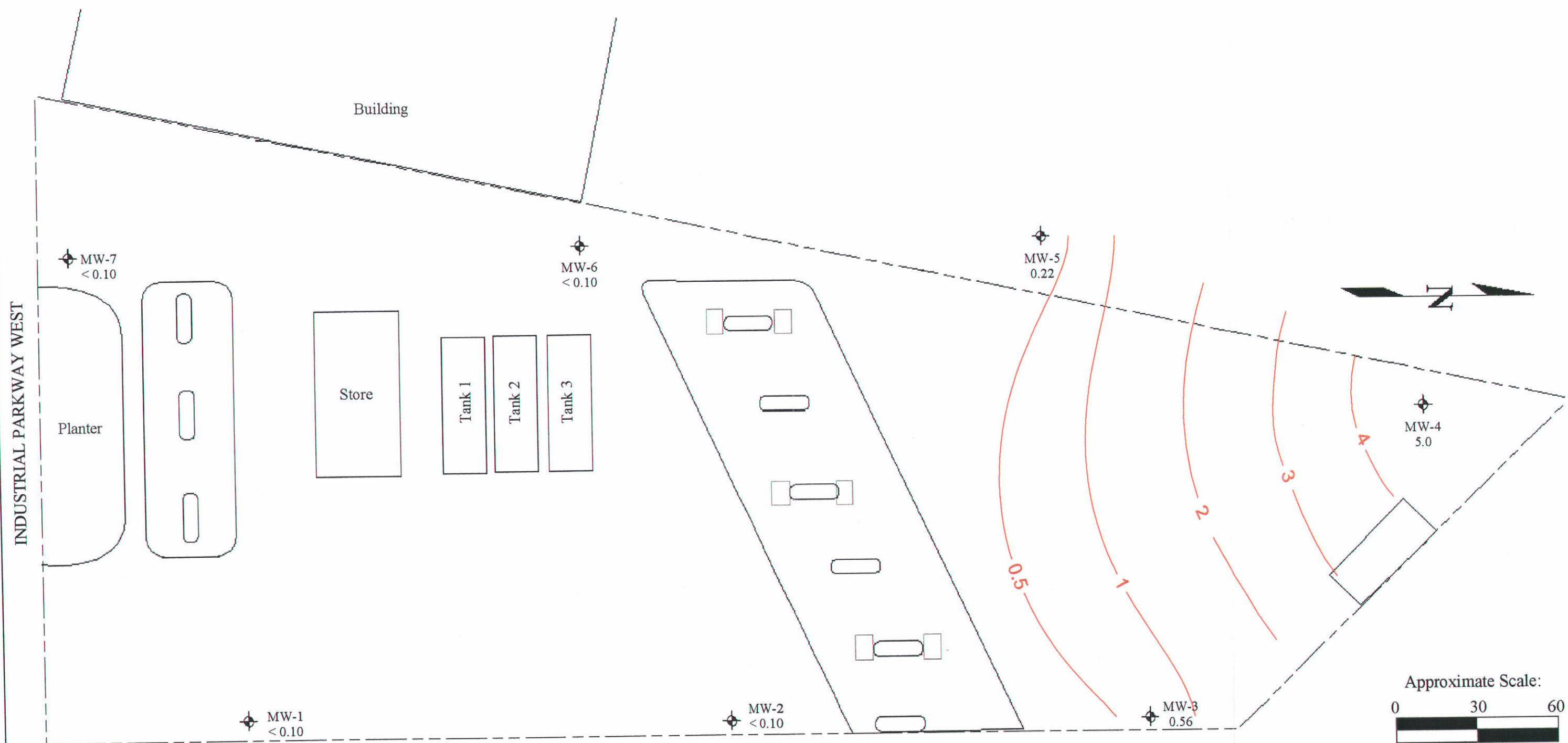
Project No. L98184	Golden Gate Petroleum	POTENTIOMETRIC SURFACE ELEVATION CONTOUR MAP DECEMBER 4, 2003 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 4
Bonkowski & Associates, Inc.			



LEGEND

- MW-1 Monitor well
- 5.5 Groundwater TPHD Concentration (mg/l)
- 5.5 Groundwater TPHD Isoconcentration Contour (mg/l)
- Dispenser Island
- Canopy Footing

Project No. L98184	Golden Gate Petroleum	TPHD ISOCONCENTRATION CONTOURS DECEMBER 4, 2003	Figure 5
Bonkowski & Associates, Inc.		1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	



LEGEND

- MW-1 Monitor well
- 5.5 Groundwater TPHMO Concentration (mg/l)
- 5.5 Groundwater TPHMO Isoconcentration Contour (mg/l)
- Dispenser Island
- Canopy Footing

Project No. L98184	Golden Gate Petroleum	TPHMO ISOCONCENTRATION CONTOURS DEMBER 4, 2003 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 6
Bonkowski & Associates, Inc.			

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-6 MW-1

Field Tech.: T. Choi

Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: 1178 11.31	Linear feet of water: 18.67
After Purging:	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): 0	Volume of water in 1 casing (ft ³): 0.41
Total purging time (min.) 110 ^R 7	1 ft ³ = 7.48 gal.
Begin: 1102	Volume of water in 1 casing (gal): 3.0
End: 1109	

Time	Cumulative Volume Removed	Water Temp (°F)	→ μS/cm Conductivity (μohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1102	0.5	64.9	2220	7.40	CL	
1103	0.8	65.6	2070	7.47	CL	
1106	1.1	65.6	2060	7.48	CL	
1109	1.4	65.3	2050	7.49	CL	
PARAMETERS STABILIZED, 3 CONSEC. ±				15%		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments: MICROPURSE @ ~ 0.4 L/MIN W/ PUMP INTAKE SET @ ~ 20' BTDC

EQUIL. COND.

NO FP OBS.

COLLECT GW SAMPLE #WL98184-MW-1

IN 3x40 MB VOA W/HCL & 1X IL AMBER Top of Casing Elevation:

Time Sampled: 1215

Groundwater Elevation:

R

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-2
 Field Tech.: T. CHOI Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): <u>25.35 ft</u>
Before Purging: <u>12.05</u>	Linear feet of water: <u>22.95</u>
After Purging: <u>—</u>	Area of casing x-sect: <u>0.0218 ft²</u>
Thickness of FP (ft): <u>∅</u>	Volume of water in 1 casing (ft ³): <u>0.5</u>
Total purging time (min.) <u>9</u>	1 ft ³ = 7.48 gal.
Begin: <u>1030</u>	Volume of water in 1 casing (gal): <u>3.7</u>
End: <u>1039</u>	

Time	Cumulative Volume Removed	Water Temp (°F)	→ 45/cm Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1030	0.4	66.3	4420	6.97	CO	
1033	0.3	67.5	4630	6.97	CL	
1036	1.2	67.9	4700	6.96	CL	
1039	1.6	68.7	4730	6.97	CL	
PARAMETERS STABILIZED & CONSEC. ± 15%						

* Appearance

CL = clear
 CO = cloudy
 TU = turbid

** Particle

S = sand
 ML = silt
 CL = clay

Comments: MICROPURGE @ ~50.5L/MIN. SET PUMP INTAKE @ ~20' BTOX. EQUIL. COND.

NO FP OBSERVED

COLLECT GW SAMPLE #WL-98184-MW-2

IN 3x40 ML (DRAIN/HCI) & 1x1 LAMBERT Top of Casing Elevation:

Time Sampled: 1055

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-3

Field Tech.: T. Choi

Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: <u>12.19</u>	Linear feet of water: <u>12.81</u>
After Purging: <u>—</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): <u>0</u>	Volume of water in 1 casing (ft ³): <u>0.28</u>
Total purging time (min.) <u>15</u>	1 ft ³ = 7.48 gal.
Begin: <u>1139</u>	Volume of water in 1 casing (gal): <u>2.1</u>
End: <u>1154</u>	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µS/cm) (µhm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>1139</u>	<u>0.3</u>	<u>64.7</u>	<u>2430</u>	<u>7.36</u>	<u>CO</u>	
<u>1142</u>	<u>0.7</u>	<u>65.4</u>	<u>2510</u>	<u>7.41</u>	<u>CL</u>	
<u>1145</u>	<u>1.1</u>	<u>65.1</u>	<u>2530</u>	<u>7.42</u>	<u>CL</u>	
<u>1148</u>	<u>1.5</u>	<u>64.4</u>	<u>3180</u>	<u>7.30</u>	<u>CL</u>	
<u>1151</u>	<u>1.9</u>	<u>64.9</u>	<u>3450</u>	<u>7.21</u>	<u>CL</u>	

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

1154 2.3 64.8 3620 7.20 CL

PARAMETERS STABILIZED, 3 CONSEC. ± 15%

Comments: MICROPURGE @ 50.5L/MIN, SET PUMP INTAKE @ ~17' BTOC. EQUIL.

(COND. ESTABLISHED)

NO FP OBSERVED

COLLECT GW SAMPLE #WL98184-MW-3

IN 3x40 ML VIAL # 1 & 11 NUMBER

Top of Casing Elevation:

Time Sampled: 1155

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-4
 Field Tech.: T. CHOI Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 12.38	Linear feet of water: 12.62
After Purging: —	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): 0	Volume of water in 1 casing (ft ³): 0.28
Total purging time (min.) 9	1 ft ³ = 7.48 gal.
Begin: 1214	Volume of water in 1 casing (gal): 2.1
End: 1223	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1214	0.5	68.3	1040	6.98	CL	
1217	0.9	68.6	878	7.01	CL	
1220	1.3	68.7	862	7.01	CL	
1223	1.7	68.7	858	6.99	CL	
PARAMETERS STABILIZED, 3 CONSEC. ± 1% ^{215/cm}						

* Appearance

CL = clear
 CO = cloudy
 TU = turbid

** Particle

S = sand
 ML = silt
 CL = clay

Comments: MICROPURGE @ ~0.5 L/MIN W/ PUMP INTAKE @ ~17' BTOC, EQUIL.
COND. STAB.
NO FB OBSERVED

COLLECT GW SAMPLE #WL98184-MW-4
W/ACI
IN 3x40ML VOA, 1x1 LAMBER Top of Casing Elevation:
 Time Sampled: 1230 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184
 Field Tech.: T. Choi

Well No.: MW-5
 Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: <u>12.23</u>	Linear feet of water: <u>17.8</u>
After Purging: <u>—</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): <u>∅</u>	Volume of water in 1 casing (ft ³): <u>0.7</u>
Total purging time (min.)	1 ft ³ = 7.48 gal.
Begin: <u>1246</u>	Volume of water in 1 casing (gal): <u>2.9</u>
End: <u>1255</u>	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1246	0.4	64.5	4350	6.92	CL	
1249	0.7	64.7	4570	6.93	CL	
1252	1.0	64.7	4610	6.96	CL	
1255	1.3	64.5	4600	6.95	CL	
PARAMETERS STABILIZED, 3 CONSEC. ± 15%						

* Appearance

CL = clear
 CO = cloudy
 TU = turbid

** Particle

S = sand
 ML = silt
 CL = clay

Comments: MICROPURGE @ ~ 0.4 L/MIN w/ PUMP INTAKE @ ~ 20' BTOC, ESTAB.

EQUILIBRIUM COND.

NO FP OBSERVED

COLLECT GW SAMPLE # MWL98184-MW-5

IN 3x40ML UGA w/ HCl & 1x1L AMBER Top of Casing Elevation:

Time Sampled: 1305

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-T MW-6 *TC*

Field Tech.: T. CHOI

Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: <u>11:37 11.78</u> <i>TC</i>	Linear feet of water: <u>18.22</u> <i>TC</i>
After Purging: <u>0</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): <u>0</u>	Volume of water in 1 casing (ft ³): <u>0.4</u> <i>TC</i>
Total purging time (min.) <u>9</u>	1 ft ³ = 7.48 gal.
Begin: <u>0958</u>	Volume of water in 1 casing (gal): <u>3.0</u> <i>TC</i>
End: <u>1007</u>	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µmhos/cm)	pH of Water	* Water Appearance	** Primary Particulate
0958	0	63.8	2560	7.32	CL	
1001	0.3	65.0	2460	7.44	CL	
1004	0.6	65.6	2510	7.45	CL	
1007	0.9	66.5	2540	7.43	CL	
PARAMETERS STABILIZED, 3 CONSEC. ± 15%						

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments: MICROPURGE @ ~ 50.4 L/MIN W/ PUMP INTAKE SET @ ~ 20' BTOK. EQUIL COND.

NO FP OBSERVED

COLLECT GW SAMPLE # W98184-MW-6

IN 3x40 ML WA W/HCl + 1x 1 LAMBER Top of Casing Elevation:

Time Sampled: 1015

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-7

Field Tech.: T. Clark

Date: 12/4/2

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: <u>11.98</u>	Linear feet of water: <u>13.02</u>
After Purging: <u>—</u>	Area of casing x-sect: <u>0.0218 ft²</u>
Thickness of FP (ft): <u>∅</u>	Volume of water in 1 casing (ft ³): <u>0.23</u>
Total purging time (min.) <u>9</u>	1 ft ³ = 7.48 gal.
Begin: <u>0923</u>	Volume of water in 1 casing (gal): <u>2.1</u>
End: <u>0932</u>	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>0923</u>	<u>∅</u>	<u>65.7</u>	<u>3410</u>	<u>7.02</u>	<u>CL</u>	
<u>0926</u>	<u>0.4</u>	<u>65.3</u>	<u>3500</u>	<u>7.16</u>	<u>CL</u>	
<u>0929</u>	<u>0.8</u>	<u>65.4</u>	<u>3740</u>	<u>7.14</u>	<u>CL</u>	
<u>0932</u>	<u>1.2</u>	<u>65.3</u>	<u>3710</u>	<u>7.17</u>	<u>CL</u>	
<u>PARAMETERS STABILIZED 3 CONSEC. ± 15%</u>						

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments: MICROPURGE @ ~ 20.5L/MIN W/ PUMP INTAKE @ ~ 17' BTCL

NO FP OBSERVED

COLLECT GW SAMPLE # WLR9184-MW-7

IN 3x40 ML HCL VOA 4x 1L AMBER Top of Casing Elevation:

Time Sampled: 0940

Groundwater Elevation:



13 February, 2003

J. Springer
Bonkowski & Associates
6400 Hollis St., Ste. 4
Emeryville, CA. 94608

RE: Golden Gate Petroleum, Hayward
Sequoia Work Order: S212158

Enclosed are the results of analyses for samples received by the laboratory on 12/05/02 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

CA ELAP Certificate #1624

Bonkowski & Associates
6400 Hollis St., Ste. 4
Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WL98184-MW-1	S212158-01	Water	12/04/02 11:15	12/05/02 16:50
WL98184-MW-2	S212158-02	Water	12/04/02 10:55	12/05/02 16:50
WL98184-MW-3	S212158-03	Water	12/04/02 11:55	12/05/02 16:50
WL98184-MW-4	S212158-04	Water	12/04/02 12:30	12/05/02 16:50
WL98184-MW-5	S212158-05	Water	12/04/02 13:05	12/05/02 16:50
WL98184-MW-6	S212158-06	Water	12/04/02 10:15	12/05/02 16:50
WL98184-MW-7	S212158-07	Water	12/04/02 09:40	12/05/02 16:50



Bonkowski & Associates
6400 Hollis St., Ste. 4
Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

Diesel Hydrocarbons by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WL98184-MW-1 (S212158-01) Water Sampled: 12/04/02 11:15 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	ND	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	
Motor Oil (C16-C36)	ND	0.10	"	"	"	"	"	"	
Surrogate: Octacosane		72 %	50-150		"	"	"	"	
WL98184-MW-2 (S212158-02) Water Sampled: 12/04/02 10:55 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	0.29	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	
Motor Oil (C16-C36)	ND	0.10	"	"	"	"	"	"	
Surrogate: Octacosane		86 %	50-150		"	"	"	"	
WL98184-MW-3 (S212158-03) Water Sampled: 12/04/02 11:55 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	ND	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	
Motor Oil (C16-C36)	0.56	0.10	"	"	"	"	"	"	HC-12
Surrogate: Octacosane		78 %	50-150		"	"	"	"	
WL98184-MW-4 (S212158-04) Water Sampled: 12/04/02 12:30 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	ND	0.25	mg/l	5	2120231	12/13/02	12/19/02	DHS LUFT	
Motor Oil (C16-C36)	5.0	0.50	"	"	"	"	"	"	HC-12
Surrogate: Octacosane		434 %	50-150		"	"	"	"	S-02
WL98184-MW-5 (S212158-05) Water Sampled: 12/04/02 13:05 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	ND	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	
Motor Oil (C16-C36)	0.22	0.10	"	"	"	"	"	"	
Surrogate: Octacosane		330 %	50-150		"	"	"	"	S-02
WL98184-MW-6 (S212158-06) Water Sampled: 12/04/02 10:15 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	0.053	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	HC-12
Motor Oil (C16-C36)	ND	0.10	"	"	"	"	"	"	
Surrogate: Octacosane		71 %	50-150		"	"	"	"	



Bonkowski & Associates
 6400 Hollis St., Ste. 4
 Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
 Project Number: L98184
 Project Manager: J. Springer

S212158
 Reported:
 02/13/03 16:48

Diesel Hydrocarbons by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WL98184-MW-7 (S212158-07) Water. Sampled: 12/04/02 09:40 Received: 12/05/02 16:50									
Diesel Range Hydrocarbons (C10-C28)	0.14	0.050	mg/l	1	2120231	12/13/02	12/19/02	DHS LUFT	HC-12
Motor Oil (C16-C36)	ND	0.10	"	"	"	"	"	"	"
Surrogate: Octacosane		84 %	50-150		"	"	"	"	



Bonkowski & Associates
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Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

**BTEX by EPA Method 8260B
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WL98184-MW-1 (S212158-01) Water Sampled: 12/04/02 11:15 Received: 12/05/02 16:50									
Tert-butyl alcohol	ND	5.0	ug/l	1	2120229	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	0.54	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		110 %	60-140	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>		92 %	60-140	"	"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>		111 %	60-140	"	"	"	"	"	

WL98184-MW-2 (S212158-02) Water Sampled: 12/04/02 10:55 Received: 12/05/02 16:50									
Tert-butyl alcohol	ND	5.0	ug/l	1	2120229	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	7.8	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	1.2	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		114 %	60-140	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>		90 %	60-140	"	"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>		115 %	60-140	"	"	"	"	"	

Sequoia Analytical - Sacramento

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Bonkowski & Associates
 6400 Hollis St., Ste. 4
 Emeryville CA., 94608

 Project: Golden Gate Petroleum, Hayward
 Project Number: L98184
 Project Manager: J. Springer

 S212158
 Reported:
 02/13/03 16:48

BTEX by EPA Method 8260B
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WL98184-MW-3 (S212158-03) Water Sampled: 12/04/02 11:55 Received: 12/05/02 16:50									
Tert-butyl alcohol	ND	5.0	ug/l	1	2120229	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	520	5.0	"	10	"	"	12/16/02	"	
Di-isopropyl ether	ND	0.50	"	1	"	"	12/13/02	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	1.7	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	500	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		110 %		60-140	"	"	"	"	
Surrogate: 4-BFB		88 %		60-140	"	"	"	"	
Surrogate: 1,2-DCA-d4		108 %		60-140	"	"	"	"	

WL98184-MW-4 (S212158-04) Water Sampled: 12/04/02 12:30 Received: 12/05/02 16:50									
Tert-butyl alcohol	ND	5.0	ug/l	1	2120229	12/16/02	12/16/02	EPA 8260B	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		102 %		60-140	"	"	"	"	
Surrogate: 4-BFB		84 %		60-140	"	"	"	"	
Surrogate: 1,2-DCA-d4		104 %		60-140	"	"	"	"	

Sequoia Analytical - Sacramento

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Bonkowski & Associates
6400 Hollis St., Ste. 4
Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

BTEX by EPA Method 8260B
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WL98184-MW-5 (S212158-05) Water Sampled: 12/04/02 13:05 Received: 12/05/02 16:50

Tert-butyl alcohol	ND	5.0	ug/l	1	2120230	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	2.0	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		108 %	60-140	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>		111 %	60-140	"	"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>		138 %	60-140	"	"	"	"	"	

WL98184-MW-6 (S212158-06) Water Sampled: 12/04/02 10:15 Received: 12/05/02 16:50

Tert-butyl alcohol	ND	5.0	ug/l	1	2120230	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	60-140	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>		108 %	60-140	"	"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>		126 %	60-140	"	"	"	"	"	

Sequoia Analytical - Sacramento

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Bonkowski & Associates
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 Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
 Project Number: L98184
 Project Manager: J. Springer

S212158
 Reported:
 02/13/03 16:48

BTEX by EPA Method 8260B
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WL98184-MW-7 (S212158-07) Water Sampled: 12/04/02 09:40 Received: 12/05/02 16:50									
Tert-butyl alcohol	ND	5.0	ug/l	1	2120230	12/13/02	12/13/02	EPA 8260B	
Methyl tert-butyl ether	170	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	1.7	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		108 %	60-140		"	"	"	"	
Surrogate: 4-BFB		109 %	60-140		"	"	"	"	
Surrogate: 1,2-DCA-d4		135 %	60-140		"	"	"	"	



Bonkowski & Associates 6400 Hollis St., Ste. 4 Emeryville CA., 94608	Project: Golden Gate Petroleum, Hayward Project Number: L98184 Project Manager: J. Springer	S212158 Reported: 02/13/03 16:48
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**Diesel Hydrocarbons by DHS LUFT - Quality Control
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120231 - EPA 3510C										
Blank (2120231-BLK1)										
					Prepared: 12/13/02 Analyzed: 12/18/02					
Diesel Range Hydrocarbons (C10-C28)	ND	0.050	mg/l							
Motor Oil (C16-C36)	ND	0.10	"							
<i>Surrogate: Octacosane</i>	0.0165		"	0.0200		82	50-150			
Laboratory Control Sample (2120231-BS1)										
					Prepared: 12/13/02 Analyzed: 12/18/02					
Diesel Range Hydrocarbons (C10-C28)	0.482	0.050	mg/l	0.500		96	60-140			
<i>Surrogate: Octacosane</i>	0.0173		"	0.0200		87	50-150			
Laboratory Control Sample Dup (2120231-BSD1)										
					Prepared: 12/13/02 Analyzed: 12/18/02					
Diesel Range Hydrocarbons (C10-C28)	0.482	0.050	mg/l	0.500		96	60-140	0	50	
<i>Surrogate: Octacosane</i>	0.0180		"	0.0200		90	50-150			

Sequoia Analytical - Sacramento.

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Bonkowski & Associates
 6400 Hollis St., Ste. 4
 Emeryville CA., 94608

 Project: Golden Gate Petroleum, Hayward
 Project Number: L98184
 Project Manager: J. Springer

 S212158
 Reported:
 02/13/03 16:48

BTEX by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
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Batch 2120229 - EPA 5030B [P/T]

Blank (2120229-BLK1)										
Prepared & Analyzed: 12/13/02										
Ethanol	ND	50	ug/l							
Tert-butyl alcohol	ND	5.0	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
Tert-amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	1.0	"							
Gasoline (C6-C10)	ND	50	"							
<hr/>										
Surrogate: Toluene-d8	26.0		"	25.0		104	60-140			
Surrogate: 4-BFB	22.1		"	25.0		88	60-140			
Surrogate: 1,2-DCA-d4	27.5		"	25.0		110	60-140			

Blank (2120229-BLK2)										
Prepared & Analyzed: 12/16/02										
Ethanol	ND	50	ug/l							
Tert-butyl alcohol	ND	5.0	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
Tert-amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	1.0	"							
Gasoline (C6-C10)	ND	50	"							
<hr/>										
Surrogate: Toluene-d8	26.8		"	25.0		107	60-140			
Surrogate: 4-BFB	22.8		"	25.0		91	60-140			
Surrogate: 1,2-DCA-d4	21.9		"	25.0		88	60-140			

Sequoia Analytical - Sacramento

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Bonkowski & Associates
6400 Hollis St., Ste. 4
Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

BTEX by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2120229 - EPA 5030B [P/T]

Blank (2120229-BLK2)

Prepared & Analyzed: 12/16/02

Blank (2120229-BLK3)

Prepared & Analyzed: 12/18/02

Ethanol	ND	50	ug/l							
Tert-butyl alcohol	ND	5.0	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
Tert-amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	1.0	"							
Gasoline (C6-C10)	ND	50	"							
<i>Surrogate: Toluene-d8</i>	23.4		"	25.0		94	60-140			
<i>Surrogate: 4-BFB</i>	22.6		"	25.0		90	60-140			
<i>Surrogate: 1,2-DCA-d4</i>	21.7		"	25.0		87	60-140			

Laboratory Control Sample (2120229-BS1)

Prepared & Analyzed: 12/13/02

Methyl tert-butyl ether	15.4	0.50	ug/l	22.4		69	60-140			
Benzene	11.9	0.50	"	13.6		87	70-130			
Toluene	72.4	0.50	"	83.4		87	70-130			
Gasoline (C6-C10)	1080	50	"	1100		98	70-130			
<i>Surrogate: Toluene-d8</i>	26.6		"	25.0		106	60-140			
<i>Surrogate: 4-BFB</i>	23.4		"	25.0		94	60-140			
<i>Surrogate: 1,2-DCA-d4</i>	23.5		"	25.0		94	60-140			

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BTEX by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2120229 - EPA 5030B [P/T]
Laboratory Control Sample (2120229-BS2)

Prepared & Analyzed: 12/16/02

Methyl tert-butyl ether	20.2	0.50	ug/l	22.4		90	60-140			
Benzene	11.1	0.50	"	13.6		82	70-130			
Toluene	71.3	0.50	"	83.4		85	70-130			
Gasoline (C6-C10)	996	50	"	1100		91	70-130			
Surrogate: Toluene-d8	25.2		"	25.0		101	60-140			
Surrogate: 4-BFB	21.3		"	25.0		83	60-140			
Surrogate: 1,2-DCA-d4	26.9		"	25.0		108	60-140			

Laboratory Control Sample (2120229-BS3)

Prepared & Analyzed: 12/18/02

Methyl tert-butyl ether	18.8	0.50	ug/l	22.4		84	60-140			
Benzene	12.7	0.50	"	13.6		93	70-130			
Toluene	82.7	0.50	"	83.4		99	70-130			
Gasoline (C6-C10)	1040	50	"	1100		95	70-130			
Surrogate: Toluene-d8	23.2		"	25.0		93	60-140			
Surrogate: 4-BFB	22.3		"	25.0		89	60-140			
Surrogate: 1,2-DCA-d4	23.5		"	25.0		94	60-140			

Matrix Spike (2120229-MS1)

Source: S212307-04

Prepared & Analyzed: 12/13/02

Methyl tert-butyl ether	24.2	0.50	ug/l	22.4	0.83	104	60-140			
Benzene	12.8	0.50	"	13.6	ND	94	70-130			
Toluene	88.9	0.50	"	83.4	ND	107	70-130			
Gasoline (C6-C10)	1180	50	"	1100	ND	106	60-140			
Surrogate: Toluene-d8	25.2		"	25.0		101	60-140			
Surrogate: 4-BFB	22.4		"	25.0		90	60-140			
Surrogate: 1,2-DCA-d4	29.0		"	25.0		116	60-140			

Matrix Spike Dup (2120229-MSD1)

Source: S212307-04

Prepared & Analyzed: 12/13/02

Methyl tert-butyl ether	23.2	0.50	ug/l	22.4	0.83	100	60-140	4	25	
Benzene	11.8	0.50	"	13.6	ND	87	70-130	8	25	
Toluene	74.5	0.50	"	83.4	ND	89	70-130	18	25	
Gasoline (C6-C10)	1090	50	"	1100	ND	98	60-140	8	25	

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Emeryville CA., 94608

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BTEX by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2120229 - EPA 5030B [P/T]

Matrix Spike Dup (2120229-MSD1)

Source: S212307-04

Prepared & Analyzed: 12/13/02

Surrogate: Toluene-d8	26.7		ug/l	25.0		107	60-140			
Surrogate: 4-BFB	21.6		"	25.0		86	60-140			
Surrogate: 1,2-DCA-d4	28.8		"	25.0		115	60-140			

Batch 2120230 - EPA 5030B [P/T]

Blank (2120230-BLK1)

Prepared & Analyzed: 12/13/02

Ethanol	ND	50	ug/l							
Tert-butyl alcohol	ND	5.0	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
Tert-amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	1.0	"							
Gasoline (C6-C10)	ND	50	"							

Surrogate: Toluene-d8	27.4		"	25.0		110	60-140			
Surrogate: 4-BFB	26.8		"	25.0		107	60-140			
Surrogate: 1,2-DCA-d4	29.9		"	25.0		120	60-140			

Laboratory Control Sample (2120230-BS1)

Prepared & Analyzed: 12/13/02

Methyl tert-butyl ether	17.9	0.50	ug/l	22.4		80	60-140			
Benzene	13.6	0.50	"	13.6		100	70-130			
Toluene	79.5	0.50	"	83.4		95	70-130			
Gasoline (C6-C10)	973	50	"	1100		88	70-130			

Surrogate: Toluene-d8	27.1		"	25.0		108	60-140			
Surrogate: 4-BFB	27.6		"	25.0		110	60-140			
Surrogate: 1,2-DCA-d4	30.3		"	25.0		121	60-140			

Sequoia Analytical - Sacramento

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Project: Golden Gate Petroleum, Hayward
Project Number: L98184
Project Manager: J. Springer

S212158
Reported:
02/13/03 16:48

BTEX by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2120230 - EPA 5030B [P/T]

Matrix Spike (2120230-MS1)		Source: S212106-15			Prepared & Analyzed: 12/13/02					
Methyl tert-butyl ether	288	0.50	ug/l	22.4	NR	60-140				QM-4X
Benzene	13.0	0.50	"	13.6	ND	96	70-130			
Toluene	74.7	0.50	"	83.4	0.65	89	70-130			
Gasoline (C6-C10)	930	50	"	1100	ND	85	60-140			
Surrogate: Toluene-d8	26.0		"	25.0		104	60-140			
Surrogate: 4-BFB	26.6		"	25.0		106	60-140			
Surrogate: 1,2-DCA-d4	32.7		"	25.0		131	60-140			

Matrix Spike Dup (2120230-MSD1)		Source: S212106-15			Prepared & Analyzed: 12/13/02					
Methyl tert-butyl ether	298	0.50	ug/l	22.4	NR	60-140	3	25		QM-4X
Benzene	14.1	0.50	"	13.6	ND	104	70-130	8	25	
Toluene	81.9	0.50	"	83.4	0.65	97	70-130	9	25	
Gasoline (C6-C10)	1010	50	"	1100	ND	92	60-140	8	25	
Surrogate: Toluene-d8	25.6		"	25.0		102	60-140			
Surrogate: 4-BFB	26.3		"	25.0		105	60-140			
Surrogate: 1,2-DCA-d4	31.5		"	25.0		126	60-140			

Sequoia Analytical - Sacramento

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Emeryville CA., 94608

Project: Golden Gate Petroleum, Hayward
Project Number: L98184
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S212158
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02/13/03 16:48

Notes and Definitions

- HC-12 Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
- QM-4X The spike recovery was outside of control limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



SEQUOIA ANALYTICAL CHAIN OF CUSTODY

- 1455 Meadowell Blvd, Suite 200 • Palmdale, CA 93550 • (805) 495-1007 • FAX (805) 792-0249
- 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 • FAX (916) 921-0100
- 1551 Industrial Road • San Carlos, CA 94070 • (650) 232-9600 • FAX (650) 232-9612
- 404 N. Wiget Lane • Walnut Creek, CA 94598 • (925) 988-9600 • FAX (925) 988-9673

Company Name: BONKOWSKI ASSOCIATES Project: L-98184 GGP HAYWARD
 Mailing Address: 6400 HOLLIS STREET, STE 4 Billing Address (if different):
 City: EMERYVILLE State: CA Zip Code: 94608
 Telephone: 510-450-0770 Fax #: 510-450-0821 P.O. #:
 Report To: JAMES SPRINGER E-mail Address: mail@bonkowski.com QC Data: Level II (standard) Level III Level IV
 Sampler: [Signature] Date / Time Results Required: Sequoia's Work Order #

Turnaround Time: 10-15 Working Days (Standard TAT) 7 Working Days 5 Working Days
 72 Hours 48 Hours 24 Hours 2-8 Hours

- MANDATORY:**
- SDWA (Drinking Water)
 - CWA (Waste Water)
 - RCRA (Hazardous Waste)
 - Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date / Time Sampled	Matrix Desc.	# of Cont.	Container Type	Sequoia's Sample #	ANALYSES REQUESTED (Please provide method)					Comments / Temp. (if required)	
						TPH/G/BTEX 8260B	TPH/D	TPH/MO EPA 8260B	TOX EPA 8260B	ENDS/1,2-DCA 8260B		
W/L98184-MW-1	12/4/2 1115	W	3x40 1X1L	VDA AMBER	5212158-01	X	X	X	X	X		
W/L98184-MW-2	12/4/2 1055	W			-02	X	X	X	X	X		
W/L98184-MW-3	12/4/2 1155	W			-03	X	X	X	X	X		
4.W/L98184-MW-4	12/4/2 1230	W			-04	X	X	X	X	X		
5.W/L98184-MW-5	12/4/2 1305	W			-05	X	X	X	X	X		
6.W/L98184-MW-6	12/4/2 1015	W			-06	X	X	X	X	X		
7.W/L98184-MW-7	12/4/2 0940	W			-07	X	X	X	X	X		
8.												
9.												
10.												

Relinquished By: [Signature] Received By: WHS Date / Time: 12/5/2 1430
 Relinquished By: WHS Received By: Michael Gorin Date / Time: 12/5/2 1650
 Relinquished By: Michael Gorin Received By: Monica Gribben Date / Time: 12/6/02 1500
 Relinquished By: _____ Received By: _____ Date / Time: _____

Were Samples Received in Good Condition? Yes No Samples on Ice? Yes No Method of Shipment: _____ Page 1 of 1

White: Sequoia

Yellow: Sequoia

Pink: Client

Groundwater Monitoring and Sampling Protocols

Prior to purging and sampling a well, the static water level is measured to the nearest 0.01 feet with an electronic water sounder. After measuring the depth to water and checking for floating product, the monitor wells are purged and a sample collected from each well. The pH, temperature, and conductivity of the purge water are measured during well purging. Groundwater is sampled after three consecutive pH, temperature, and conductivity readings have been measured to within 15% of one another or until approximately three casing volumes have been purged. Reading are taken at least three minutes apart. Groundwater samples are then collected using new, disposable polyethylene bailers or by using low flow sampling techniques with new, disposable tubing (flow rates < 0.5 liters per minute). Care is taken to minimize volatilization when transferring groundwater into appropriately preserved sample containers for volatile organic compounds. After labeling, samples are placed in a cooler containing ice and transported using chain-of-custody procedures to a state certified analytical laboratory.