October 19, 2012

Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Quarterly Summary Report, Third Quarter 2012**

Site: **76 Service Station No. 6277**
15803 East 14th Street
San Leandro, California
Fuel Leak Case No. RO0002969

Dear Mr. Nowell;

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call:

Brian Whalen
Platinum Energy
30343 Canwood Street, Suite 200
Agoura Hills, Ca 91301
Tel: (818) 206-5704
Fax: (818) 206-5721
bwhalen@platinum-energy.net

Sincerely,

PLATINUM ENERGY

BRIAN WHALEN

Attachment

Quarterly Summary Report, Third Quarter 2012

76 Service Station No. 6277
15803 East 14th Street
San Leandro, California

Alameda County Health Care Services Agency, Fuel Leak Case No. RO0002969

GeoTracker Global ID No.T0619718179

Antea Group Project No. I40256277

October 19, 2012

Prepared for:
Mr. Keith Nowell
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Prepared by:
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1.0 INTRODUCTION

Antea™Group is pleased to submit this *Quarterly Summary Report, Third Quarter 2012*, for the referenced site in San Leandro, CA (**Figure 1**). The subject site is currently an operating 76 service station located at 15803 East 14th Street in San Leandro, California (**Figure 1**). Station facilities include two, 12,000 gallon fuel underground storage tanks (USTs), a 520-gallon waste-oil UST, two dispenser islands, and a service station building, containing three service bays (**Figure 2**). A total of four groundwater monitoring wells are located at the site (**Figure 2**). Please refer to **Appendix A** for additional site information and for the history of environmental investigations and remedial actions.

This report summarizes the data obtained from the recent groundwater monitoring and sampling event conducted on August 14, 2012. Included herein are site figures and groundwater contaminant data tables and a discussion of trends. This report has received a technical review by Mr. Dennis Dettloff, California Professional Geologist No. 7480.

1.1 Work Performed [Third Quarter 2012]

1. Antea Group prepared and submitted the *Quarterly Summary Report, Second Quarter 2012*, dated July 25, 2012.
2. Antea Group conducted the third quarter 2012 groundwater monitoring and sampling event on August 14, 2012.
3. Antea Group submitted a Case Closure Petition to the State Water Recourses Control Board (SWRCB) for their consideration on August 14, 2012.

1.2 Work Proposed [Fourth Quarter 2012]

1. Antea Group prepared and submitted the *Quarterly Summary Report, Third Quarter 2012* (contained herein) to the ACHCSA.
2. Antea Group will conduct the fourth quarter 2012 monitoring and sampling event.

2.0 CURRENT PROJECT STATUS

Current phase of project:	Quarterly Groundwater Monitoring
Local Oversight Program (LOP) – Lead agency for cleanup oversight:	Alameda County Health Care Services Agency Case No. RO0002969
Secondary agency(s):	None
Monitoring well gauging schedule:	Quarterly: MW-7 through MW-10
Monitoring well sampling schedule:	Quarterly: MW-7 through MW-10

Total number of monitoring/remediation wells:	Four
Range of well depths (total depth below ground surface, bgs):	Wells are set from 19 feet to 24 feet bgs.
Wells with historical measurable LNAPL (light non-aqueous phase liquid):	None
Historical depth to water range, in feet below top of casing (BTOC):	Min: 9.35 (MW-8, Q4 2011) Max: 10.82 (MW-10, Q3 2012)
Historical groundwater elevation range (ft) for wells MW-7 through MW-10:	Min: 25.04 (MW-7, Q3 2012) Max: 25.55 (MW-9, Q4 2011)
Local receptors:	See **Appendix A**
Current remediation technique	None

2.1 Regulatory Correspondence

Antea Group submitted an email to Mr. Keith Nowell/ACHCSA indicating that a *Case Closure Petition* for this site had been uploaded to Geotracker on August 14, 2012.

2.2 Remedial Activities

No remedial activities took place during the third quarter 2012.

2.3 Groundwater Monitoring

During the August 2012 groundwater monitoring and sampling event, four monitoring wells were gauged, purged, and sampled by Antea Group per standard sampling protocol (**Appendix B**). Copies of Antea Group's field data sheets are presented as **Appendix C**. The recent gauging and sampling data are summarized below and in **Table 1**.

Well gauging and sampling date:	August 14, 2012
Wells gauged:	MW-7 through MW-10
Wells sampled:	MW-7 through MW-10
Purge method:	3 well casing volumes via electric, submersible pump
Sample collection method:	Disposable bailers
Groundwater parameters measured (**Appendix C**):	Temperature, pH, Conductivity, Oxidation-reduction potential (ORP), Turbidity, Dissolved Oxygen (DO)
Wells with measurable LNAPL:	None
Current depth to water range (ft below top of casing (BTOC)):	Min: 9.56 (MW-7) Max: 10.82 (MW-10)
Current groundwater elevation range (ft):	Min: 25.04 (MW-7) Max: 25.35 (MW-9)
Change in water depths from previous event (average change for all gauged wells):	0.12 foot decrease

Groundwater flow direction and gradient in foot per foot (ft/ft):	Northwest at 0.003 ft/ft

2.3.1 Groundwater Flow Gradient and Direction

The third quarter 2012 groundwater monitoring and sampling event was performed by Antea Group on August 14, 2012. The average groundwater elevation was 25.20 feet above mean sea level. The average groundwater elevation increased 0.12 feet from the May 2012 event. Depth to groundwater in the site monitoring wells ranged from 9.56 feet (MW-7) to 10.82 feet (MW-10) BTOC during the current event. The groundwater flow direction and gradient were interpreted to be to the northwest at 0.003 ft/ft during the current event. A groundwater elevation contour map is presented on **Figure 3**.

2.3.2 Groundwater Quality Data

Groundwater samples collected during the third quarter 2012 monitoring and sampling event were submitted with chain-of-custody (COC) documentation to Kiff Analytical LLC (Kiff), a State of California National Environmental Laboratory Accreditation Program (NELAP) certified laboratory (Certification No. 08263CA). The complete analytical report and Antea Group's laboratory data validation checklist are presented as **Appendix D**. Groundwater samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPHg) by Environmental Protection Agency (EPA) Method 8260;
- Benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), tertiary-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary amyl-methyl ether (TAME), 1,2-dibromoethane (EDB), 1,2-dichloroethane (1,2-DCA), and ethanol by EPA Method 8260.

Groundwater analytical results are presented in **Tables 1** (current) and **Table 2** (historical samples). The following ranges of contaminant concentrations were reported in the specified site wells groundwater samples collected on August 14, 2012. Only the reported contaminants are listed in the table below.

Constituents	Number of Reported Samples Above LRL of the Samples Collected	Minimum Reported Concentration, in µg/L (Sample ID)	Maximum Reported Concentration, in µg/L (Sample ID)
TPHg	4 of 4	150* (MW-10)	270* (MW-7)
Total Xylenes	1 of 4	0.72 (MW-7)	0.72 (MW-7)
MTBE	4 of 4	2.6 (MW-9)	63 (MW-7)
Ethanol	2 of 4	5.4 (MW-9)	14 (MW-8)

Explanations:
µg/L = Micrograms per liter LRL = Laboratory reporting limit
* TPHg result noted primary compounds not found in typical gasoline. Results are from tetrachloroethene (PCE) and trichloroethene (TCE).

2.3.3 Groundwater Contaminant Trends

During the third quarter 2012, analytical results from the sample collected from monitoring well MW-7 indicated that TPHg, benzene, toluene, ethylbenzene, total xylenes, TBA, and MTBE decreased in concentration. Analytical results from the groundwater sample collected from monitoring well MW-8 indicated a decrease in TPHg and MTBE, benzene, and TBA concentrations. Analytical results from the groundwater sample collected from monitoring well MW-9 indicated an increase in TPHg and MTBE concentrations and a decrease in TBA concentration. Analytical results from the groundwater samples collected from monitoring wells MW-10 indicated an increase in TPHg and MTBE concentrations and a decrease in TBA concentration. Analytical results from the groundwater sample collected from monitoring wells MW-9 and MW-10 indicated the ethanol was present; however, the laboratory's method detection limit decreased from 250 µg/L in previous laboratory reports to 5.0 µg/L in the current laboratory report; therefore, the trend for ethanol is unknown. Isoconcentration maps for TPHg and MTBE are presented on **Figures 4** and **5** and historical flow directions are presented on **Figure 6**.

2.3.4 Waste Disposal Summary

Water generated during well sampling and equipment cleaning was placed into a properly labeled 55-gallon Department of Transportation (DOT) approved steel drum and temporarily stored on-site. The waste was profiled using analytical results for the monitoring wells sampled during this groundwater sampling event. Subsequent to waste profiling, the waste will be transported off-site by Belshire Environmental Services to an approved disposal facility. Field procedures for purge water handling and disposal are included in **Attachment B**.

2.3.5 Quality Assurance / Quality Control

Antea Group's QA/QC measures included a detailed QA/QC data validation check on the Kiff analytical laboratory results for the August 2012 sampling event. Antea Group's laboratory data validation checklist and the Pace laboratory report are presented as **Appendix D**.

Laboratory QA/QC Performed:	Yes (validated by Antea Group)
Laboratory Data Qualifiers:	Yes (One*)
Are the data valid for their intended purpose?	Yes, the data are valid

* TPHg result noted primary compounds not found in typical gasoline. Results are from tetrachloroethene (PCE) and trichloroethene (TCE).

Based on a review of the laboratory's analytical report, including their QA/QC procedures and those implemented by Antea Group, we conclude that the laboratory data obtained during this groundwater sampling event are valid for their intended purpose.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the data obtained during site investigations conducted subsequent to the ATC investigation in 2007, when the environmental case was reopened and quarterly groundwater monitoring activities conducted over the past year, it appears that site conditions have remained consistent with conditions present when the site was granted closure in 2000. This appears to indicate that there has not been a new release since the site was granted closure. Therefore, Antea Group recommends that quarterly groundwater monitoring and sampling of the site monitoring wells be discontinued during SWRCB's review of the *Case Closure Petition* submitted by Antea Group on August 14, 2012.

4.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. For any reports cited that were not generated by Delta or Antea Group, the data from those reports is used "as is" and is assumed to be accurate. Antea Group does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by:

Jonathan Fillingame

Jonathan Fillingame
Staff Geologist

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Licensed Approver:

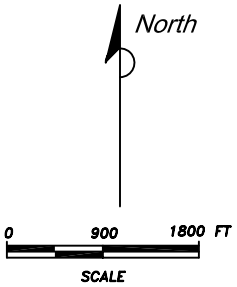
PROFESSIONAL GEOLOGIST
DENNIS SHANNON DETTLOFF
No. 7480
STATE OF CALIFORNIA

Dennis S. Dettloff Date: 10/19/12

Dennis S. Dettloff
Project Manager
California Registered Professional Geologist No. 7480

cc: GeoTracker (upload)

Figures



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, SAN LEANDRO QUADRANGLE (1973)

FIGURE 1

SITE LOCATION MAP

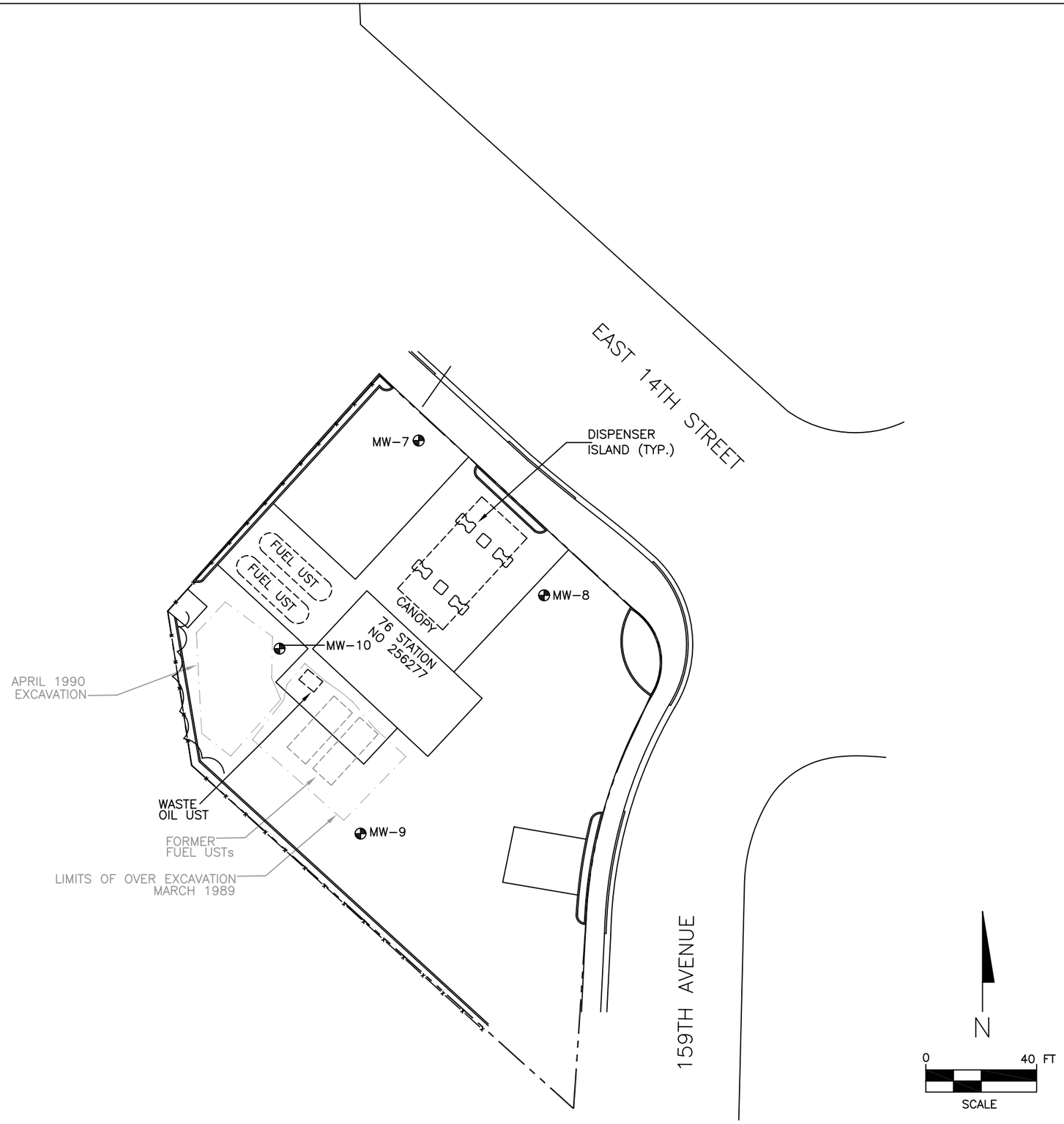
76 SERVICE STATION NO. 6277
15803 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO. I4256277	DRAWN BY JH 05/13/11
FILE NO. 6277-SiteLocator	PREPARED BY EW
REVISION NO.	REVIEWED BY

anteagroup

LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- FORMER EXCAVATION AREA
- MONITORING WELL LOCATION (ANTEA GROUP 2011)



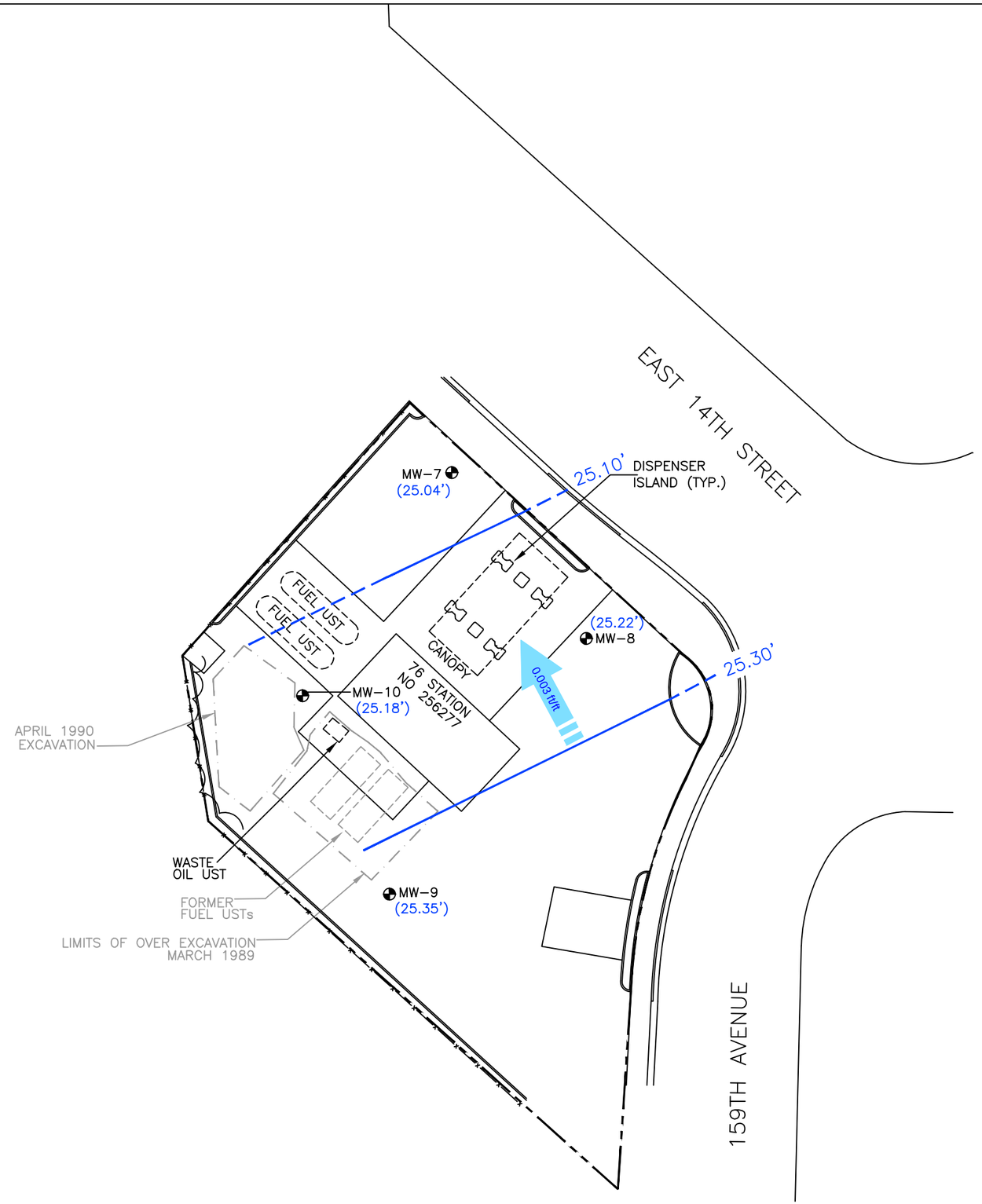
SITE PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING 2011 AND BASE MAPS DATED 1989 AND 2003 BY KEI AND 2007 BY ATC AND ASSOCIATES.

FIGURE 2
SITE PLAN

76 SERVICE STATION NO. 6277
15803 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
14256277	EW	JH
DATE	REVIEWED BY	FILE NAME
04/21/11	DD	6277-SMS

anteagroup



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- FORMER EXCAVATION AREA
- MONITORING WELL LOCATION (ANTEA GROUP 2011)
- (25.22') GROUNDWATER ELEVATON IN FEET ABOVE MEAN SEA LEVEL (ft/msl)
- 25.10' GROUNDWATER ELEVATION CONTOUR LINE (ft/msl) –DASHED WHERE INFERRED (CONTOUR INTERVAL: 0.20 ft)
- 0.003 ft/ft GROUNDWATER FLOW DIRECTION AND HYDRAULIC GRADIENT (ft/ft)

N

0 40 FT

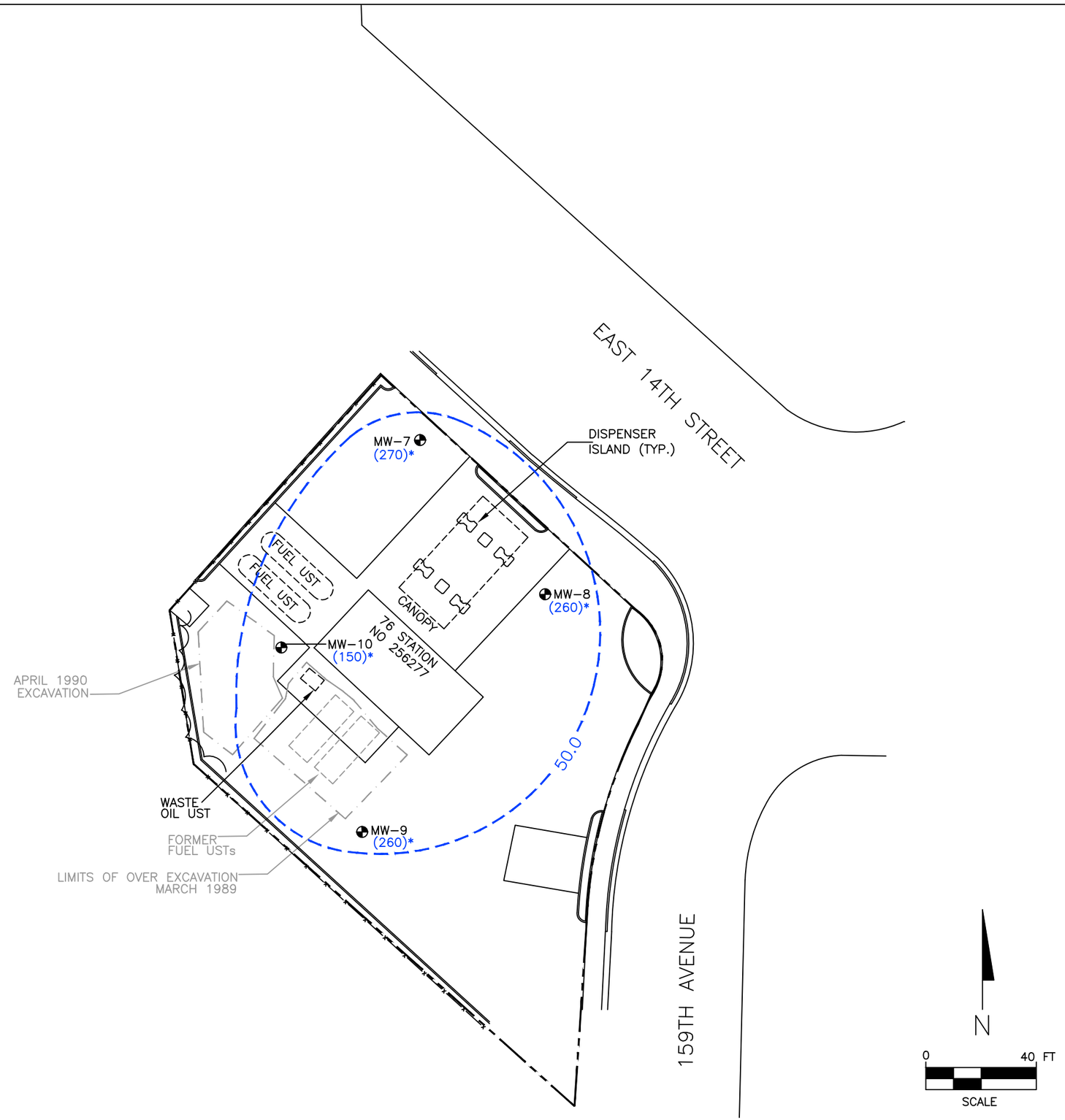
SCALE

SITE PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING 2011 AND BASE MAPS DATED 1989 AND 2003 BY KEI AND 2007 BY ATC AND ASSOCIATES.

FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
AUGUST 14, 2012
76 SERVICE STATION NO. 6277
15803 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
14256277	JF	JH
DATE	REVIEWED BY	FILE NAME
10/19/12	DD	6277-SMS

antea group



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- FORMER EXCAVATION AREA
- MONITORING WELL LOCATION (ANTEA GROUP 2011)
- (270)* DISSOLVED PHASE TPHg ISOCONCENTRATION (µg/L)
- 50 DISSOLVED PHASE TPHg ISOCONTOUR (µg/L) –DASHED WHERE INFERRED

NOTES:

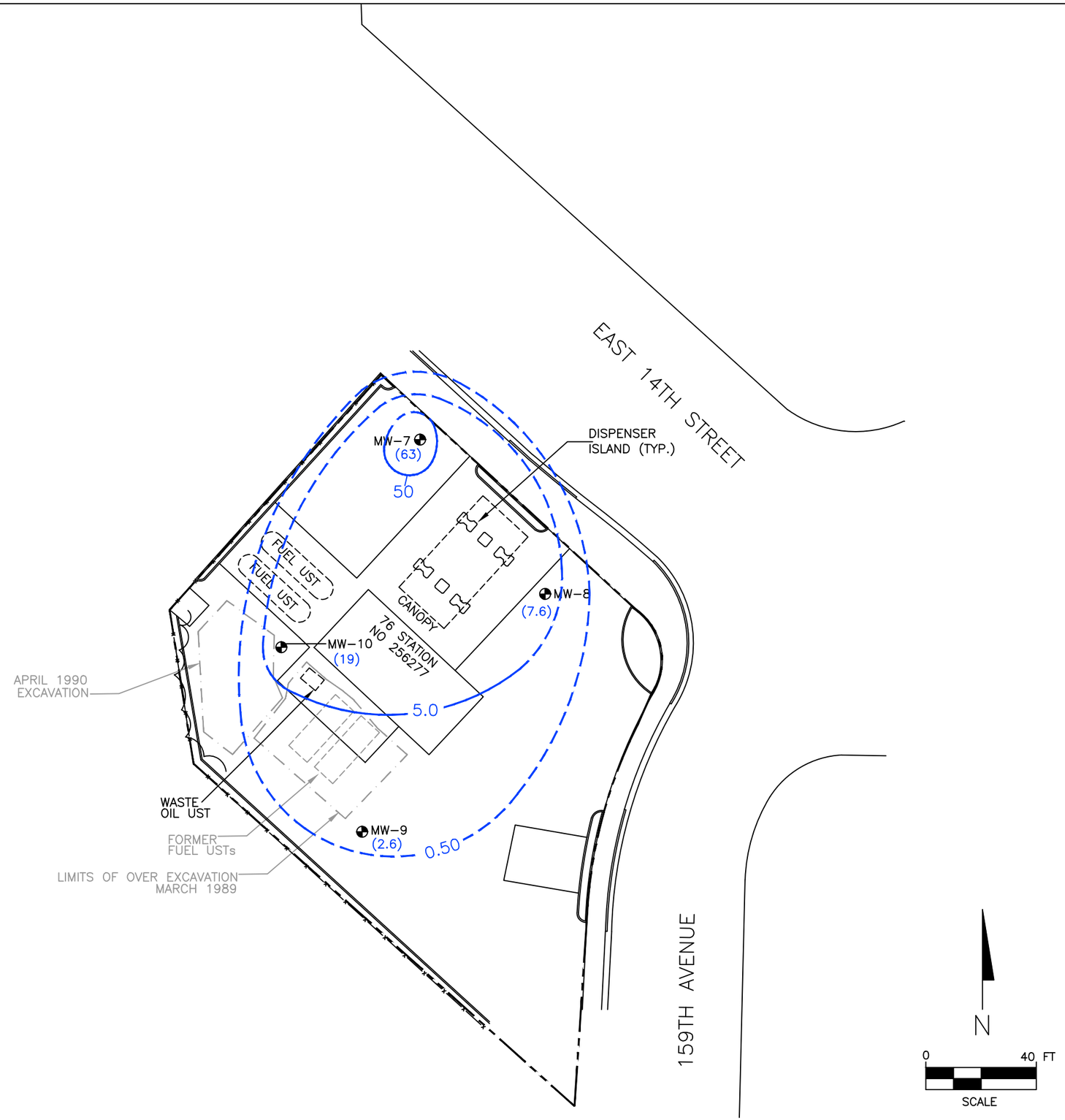
TPHg = TOTAL PETROLEUM HYDROCABONS AS GASOLINE
µg/L = MICROGRAMS PER LITER
* = PRIMARY COMPOUNDS NOT FOUND IN TYPICAL GASOLINE. RESULTS ARE FROM PCE AND TCE.

SITE PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING 2011 AND BASE MAPS DATED 1989 AND 2003 BY KEI AND 2007 BY ATC AND ASSOCIATES.

FIGURE 4
DISSOLVED PHASE TPHg ISOCONCENTRATION MAP
AUGUST 14, 2012
76 SERVICE STATION NO. 6277
15803 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
14256277	JF	JH
DATE	REVIEWED BY	FILE NAME
9/20/12	DD	6277-SMS

antea group



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- FORMER EXCAVATION AREA
- MONITORING WELL LOCATION (ANTEA GROUP 2011)
- (63) DISSOLVED PHASE MTBE ISOCONCENTRATION (µg/L)
- 5.0 DISSOLVED PHASE MTBE ISOCONTOUR (µg/L) –DASHED WHERE INFERRED

NOTES:

MTBE = METHYL TERTIARY BUTYL ETHER
µg/L = MICROGRAMS PER LITER
<0.50 = LESS THAN LABORATORY INDICATED REPORTING LIMITS

N

0 40 FT

SCALE

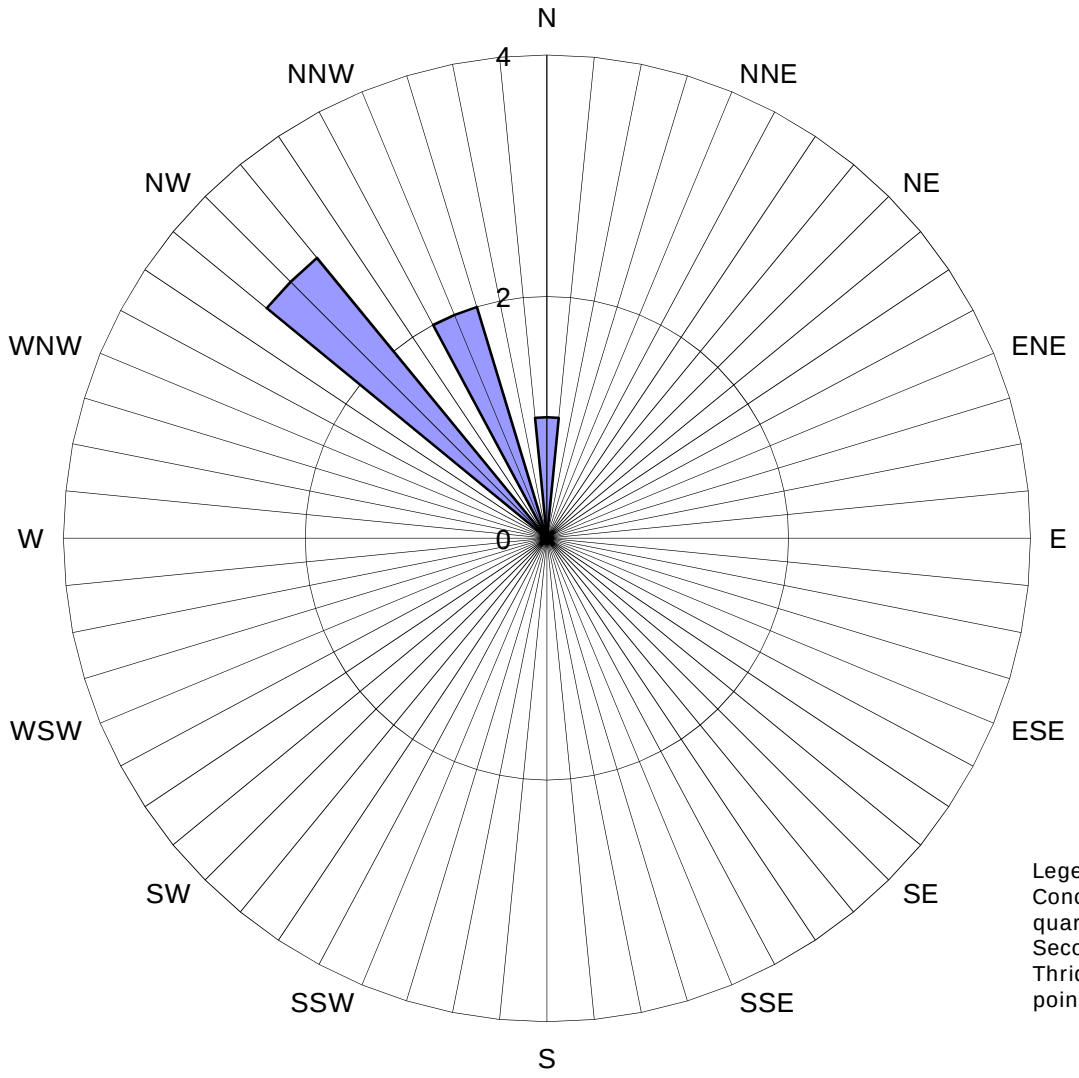
SITE PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING 2011 AND BASE MAPS DATED 1989 AND 2003 BY KEI AND 2007 BY ATC AND ASSOCIATES.

FIGURE 5
DISSOLVED PHASE MTBE ISOCONCENTRATION MAP
AUGUST 14, 2012
76 SERVICE STATION NO. 6277
15803 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
14256277	JF	JH
DATE	REVIEWED BY	FILE NAME
10/19/12	DD	6277-SMS

antea group

Figure 6
Historical Groundwater Flow Directions
76 Service Station No. 6277
15803 East 14th Street
San leandro, California



Legend
Concentric circles represent quarterly montoring events Second Quarter 2011 through Thrid Quarter 2012 6 data points shown

Groundwater Flow Direction

Tables

TABLE 1
CURRENT GROUNDWATER GAUGING AND ANALYTICAL DATA
76 Service Station No. 6277
15803 EAST 14TH ST
SAN LEANDRO, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA												
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-7	8/14/2012	34.60	9.56	NP	25.04	**270 ***	<0.50	<0.50	<0.50	**0.72**	**63**	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50
MW-8	8/14/2012	34.85	9.63	NP	25.22	**260 ***	<0.50	<0.50	<0.50	<0.50	**7.6**	<0.50	<0.50	<0.50	<5.0	**14**	<0.50	<0.50
MW-9	8/14/2012	35.09	9.74	NP	25.35	**260 ***	<0.50	<0.50	<0.50	<0.50	**2.6**	<0.50	<0.50	<0.50	<5.0	**5.4**	<0.50	<0.50
MW-10	8/14/2012	36.00	10.82	NP	25.18	**150 ***	<0.50	<0.50	<0.50	<0.50	**19**	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50

Gauging Notes:
TOC - Top of Casing
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

Analytical Notes:
< - Below the laboratory's indicated reporting limit
Bold - Above the laboratory's indicated reporting limit
ug/L - micrograms/liter
TPHg- Total petroleum hydrocarbons as gasoline
MTBE- Methyl tertiary-butyl ether
DIPE- Di-isopropyl ether
ETBE- Ethyl tertiary-butyl ether
TAME- Tertiary-amyl methyl ether
TBA- Tertiary-butyl alcohol
* - Primarily compounds not found in typical gasoline

TABLE 2
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 Service Station No. 6277
15803 EAST 14TH ST
SAN LEANDRO, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA												
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-7	4/18/2011	34.60	9.40	NP	25.20	**2,420**	**22.4**	**12.4**	**11.3**	**449**	**152**	<0.50	<0.50	<0.50	**5.7**	<250	<1.0	<1.0
	7/26/2011	34.60	9.43	NP	25.17	**1,770**	**27.3**	**18.9**	**66.4**	**341**	**102**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	10/14/2011	34.60	9.37	NP	25.23	**1,480**	**45.0**	**6.6**	**58.2**	**184**	**110**	<0.50	<0.50	<0.50	**23.0**	<250	<1.0	<1.0
	2/22/2012	34.60	9.53	NP	25.07	**655**	**14.9**	**1.7**	**16.3**	**38.8**	**112**	<0.50	<0.50	<0.50	**10.9**	<250	<1.0	<1.0
	5/10/2012	34.60	9.43	NP	25.17	**1,500**	**34.6**	**6.5**	**49.1**	**134**	**98.4**	<0.50	<0.50	<0.50	**14.5**	<250	<1.0	<1.0
	8/14/2012	34.60	9.56	NP	25.04	**270 ***	<0.50	<0.50	<0.50	**0.72**	**63**	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50
MW-8	4/18/2011	34.85	9.40	NP	25.45	**439**	**1.4**	**0.75**	**2.8**	**14.2**	**28.3**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	7/26/2011	34.85	9.42	NP	25.43	**336 1n**	**4.0**	<0.50	<0.50	<1.5	**42.7**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	10/14/2011	34.85	9.35	NP	25.50	**221 1n**	**2.2**	<0.50	<0.50	<1.5	**30.7**	<0.50	<0.50	<0.50	**5.5**	<250	<1.0	<1.0
	2/22/2012	34.85	9.53	NP	25.32	**308**	<0.50	<0.50	<0.50	<1.5	**45.9**	<0.50	<0.50	<0.50	**7.4**	<250	<1.0	<1.0
	5/10/2012	34.85	9.50	NP	25.35	**280 1n**	**1.8**	<0.50	<0.50	<1.5	**27.3**	<0.50	<0.50	<0.50	**11.7**	<250	<1.0	<1.0
	8/14/2012	34.85	9.63	NP	25.22	**260 ***	<0.50	<0.50	<0.50	<0.50	**7.6**	<0.50	<0.50	<0.50	<5.0	**14**	<0.50	<0.50
MW-9	4/18/2011	35.09	9.55	NP	25.54	**208 1n**	<0.50	<0.50	<0.50	<1.5	**1.6**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	7/26/2011	35.09	9.58	NP	25.51	**176**	<0.50	<0.50	<0.50	<1.5	**1.7**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	10/14/2011	35.09	9.54	NP	25.55	**154 1n**	<0.50	<0.50	<0.50	<1.5	**2.2**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	2/22/2012	35.09	9.81	NP	25.28	**248**	<0.50	<0.50	<0.50	<1.5	**2.4**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	5/10/2012	35.09	9.65	NP	25.44	**168 1n**	<0.50	<0.50	<0.50	<1.5	**1.8**	<0.50	<0.50	<0.50	**8.6**	<250	<1.0	<1.0
	8/14/2012	35.09	9.74	NP	25.35	**260 ***	<0.50	<0.50	<0.50	<0.50	**2.6**	<0.50	<0.50	<0.50	<5.0	**5.4**	<0.50	<0.50
MW-10	4/18/2011	36.00	10.55	NP	25.45	**513**	<0.50	<0.50	**6.9**	**40.0**	**14.9**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	7/26/2011	36.00	10.74	NP	25.26	**169 1n**	<0.50	<0.50	**1.4**	<1.5	**22.9**	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	10/14/2011	36.00	10.75	NP	25.25	**141 1n**	<0.50	<0.50	**0.59**	<1.5	**29.7**	<0.50	<0.50	<0.50	**6.1**	<250	<1.0	<1.0
	2/22/2012	36.00	10.78	NP	25.22	**173**	<0.50	<0.50	<0.50	<1.5	**33.6**	<0.50	<0.50	<0.50	**5.3**	<250	<1.0	<1.0
	5/10/2012	36.00	10.70	NP	25.30	**118 1n**	<0.50	<0.50	<0.50	<1.5	**16.4**	<0.50	<0.50	<0.50	**6.4**	<250	<1.0	<1.0
	8/14/2012	36.00	10.82	NP	25.18	**150 ***	<0.50	<0.50	<0.50	<0.50	**19**	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50

Gauging Notes:
TOC - Top of Casing
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

Analytical Notes:
< - Below the laboratory's indicated reporting limit
Bold - Above the laboratory's indicated reporting limit
ug/L - micrograms/liter
TPHg- Total petroleum hydrocarbons as gasoline
MTBE- Methyl tertiary-butyl ether
DIPE- Di-isopropyl ether
ETBE- Ethyl tertiary-butyl ether
TAME- Tertiary-amyl methyl ether
TBA- Tertiary-butyl alcohol
1n - The TPHg result for this sample did not match the pattern of the laboratory standard for gasoline
* - Primarily compounds not found in typical gasoline

TABLE 3

Historical Groundwater Gradient and Flow Direction Data

76 Service Station No. 6277

15803 East 14th Street

San Leandro, California

Site	Monitoring Date	Groundwater Gradient (feet per foot)	Groundwater Flow Direction															
			N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
6277	04/18/11	0.003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
	07/26/11	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
	10/14/11	0.005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
	02/22/12	0.002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
	05/10/12	0.002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
	08/14/12	0.003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
		0.003 Average	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**2**

Explanation

NA = Not available

Number of Events = 6

Appendix A

Previous Investigation and Site History Summary

PREVIOUS INVESTIGATION AND SITE HISTORY SUMMARY

1969 - Reported site history indicates the site was first developed as a gas station from an empty lot in 1969.

March 1989 - Two 10,000-gallon gasoline USTs, one 550-gallon waste-oil UST, and the product piping were removed from the site during UST replacement activities. Kaprealian Engineering Inc. (KEI) advanced two exploratory borings designated as EB-1 and EB-2 at the site. The borings were advanced at the request of Alameda County to assess the possible presence of hydrocarbon impact to the soil in the vicinity of the proposed UST excavation.

The borings were advanced to depths of 10.5 feet below ground surface (bgs) and 13.5 feet bgs. Ground water was encountered in the borings at depths of 11 to 12 feet bgs. The analytical results of the soil samples were as follows:

- At a depth of 5 feet bgs soil samples analyzed for total petroleum hydrocarbons as gasoline (TPHg) ranged from below the laboratory's indicated reporting limit in boring EB-2 to 2.1 parts per million (ppm) in boring EB-1.
- At a depth of 10 feet bgs TPHg concentrations ranged from 200 ppm in boring EB-1 to 620 ppm in boring EB-2.

Based on results of this preliminary investigation, KEI recommended that the contractor excavate the existing UST excavation to a depth of approximately 13 feet bgs. Water was encountered in the fuel UST excavation at a depth of approximately 11 feet bgs, thus prohibiting the collection of any soil samples from immediately beneath the USTs.

Six soil samples, labeled SW1 through SW6, were collected from the sidewalls of the fuel UST pit at depths of approximately 1 foot above the water table; and one soil sample, labeled W0-1, was collected from beneath the waste-oil UST at a depth of about 10 feet bgs. Based on observations in the field, it was decided to excavate additional soil from three of the four excavation sidewalls.

March 14, 1989: Four trenches were installed to assess the limits of additional soil excavation needed. Four soil samples were then collected at depths of approximately 10 feet bgs. The soil analytical results were as follows:

- In the fuel UST excavation, TPHg concentrations ranged from 24 ppm to 150 ppm.
- A sample collected adjacent to the existing station building indicated that TPHg was present at a concentration of 3,500 ppm.
- The soil sample collected after excavating 2 feet of sidewall toward the station building indicated that TPHg was present at a concentration of 100 ppm.
- Soil sample (SW-2) contained TPHg at a concentration of 390 ppm.
- The soil sample collected from the waste-oil UST excavation (WO-1) contained total oil and grease (TOG) at a concentration of 280 ppm. A side wall sample, SW-7 collected after excavating 14 feet of sidewall contained TOG at a concentration of 41 ppm.

The analytical results of the water sample (W1) collected from the waste-oil/fuel UST excavation contained TPHg at a concentration of 19,000 parts per billion (ppb) and benzene at a concentration of 230 ppb.

March 23, 1989: KEI returned to the site for pipe trench soil sampling. Six soil samples, labeled P1 through P6, were collected from beneath the product lines at depths of approximately 3 to 3.5 feet below grade. The analytical results of the soil samples P1 through P6 collected from the pipe trenches indicated concentrations of TPHg ranging from 1.1 ppm to 6.8 ppm.

The fuel UST pit and the waste-oil UST pit were over-excavated in order to remove hydrocarbon-impacted soil. The majority of the hydrocarbon-impacted soil appeared to have been removed from the site, except for the capillary fringe in the vicinity of the former UST pit and the building.

May 24, 1989: Four two-inch diameter monitoring wells, MW-1 through MW-4 were installed at the site. The four wells were installed to depths ranging from 24.5 to 25 feet bgs. Ground water was encountered at depths ranging from 11 to 12 feet bgs during drilling.

July 1989: The monitoring and sampling program was initiated.

February 1990: Monitoring well MW-2 was destroyed on February 1 in preparation for additional soil excavation in the vicinity of this well. Soil was excavated to a depth of approximately 6 to 12 inches below the level of the groundwater, which was encountered at a depth of about 11.5 feet below grade. After additional excavation, four soil samples were collected from the sidewalls of the excavation, each approximately 6 to 12 inches above ground water. Soil excavation activities were terminated due to the close proximity of the former and new UST excavations and the site's property line.

The analytical results of three soil samples indicated that TPHg was present at concentrations ranging from 140 ppm to 1,100 ppm, while concentrations of total petroleum hydrocarbons as diesel (TPHd) ranged from below the laboratory's indicated reporting limits to 280 ppm. The analytical results also indicated Environmental Protection Agency (EPA) Method 8010 constituents and TOG from each of the four samples were below the laboratory's indicated reporting limits, except in sample SW11A which contained TOG at a concentration of 210 ppm.

Over-excavation in the vicinity of monitoring well MW-2 was completed in April of 1990. Monitoring well MW-2 was then replaced with a new monitoring well (MW-2A) in March 1991.

1991: Due to the regular occurrence of tetrachloroethene (PCE), trichloroethene (TCE) and 1,2-dichlorethane (1,2-DCA) in sampled groundwater, a review of records documenting historic site activities was performed in 1991 to assess whether there were any up-gradient sources contributing to the impacted groundwater at the site. The file review was conducted by KEI at the Regional Water Quality Control Board (RWQCB).

The review focused on three sites with monitoring wells located within a half mile of the station. The Okada property, located at 16109 Ashland Avenue, a former USA Petroleum station located at 15120 Hesperian Boulevard, and Kaufman and Broad, located at 1620 162nd Avenue, approximately 1,800 feet east-southeast of the site. The file review is outlined in Delta's *Addendum to Additional Site Assessment Work Plan*, dated April 3, 2009.

December 1992: A file review was conducted at the ACHCSA. Four sites with existing or former USTs were located in the vicinity of the site during the file review. These sites are as follows: 1.) Nayou Properties, 1500 Thrush Avenue; 2.) ABC Auto Repair, 15960 East 14th Street; 3. Petsas Property, 16035 East 14th Street, and; 4.) SpeeDee Oil Change, 15900 East 14th Street.

1991-1993: The California EPA, Department of Toxic Substances Control (DTSC), identified regional chlorinated solvent contamination of the upper aquifer in the San Leandro area.

1993: Based on the results of the site history research, site reconnaissance, and file review, and based upon the fact that no evidence of an on-site solvent source area in the vicinity of monitoring wells MW-3 and MW-4 was found, it was concluded that there was no likely on-site source of the halogenated volatile organic compound (HVOC) impact.

The potential of an off-site HVOC source is further supported by the fact that the highest HVOC concentrations have been reported in samples collected from monitoring wells MW-3 and MW-4, located on the up-gradient side of the site. HVOC concentrations reported in the groundwater samples collected from these monitoring wells are likely coming from a source (E.G. reaching sanitary sewer lines, etc.) up-gradient of the site.

March 1993: Monitoring wells MW-5 and MW-6 were installed on March 9, 1993. These wells were monitored monthly and sampled on a quarterly basis until 1996. Groundwater flow predominantly ranged from southwest to north during the course of the investigation. Chlorinated solvents have consistently been reported in up-gradient wells MW-3 and MW-4, and it appears that the chlorinated solvent impact at the site may be due to an unidentified source (or sources) located up-gradient of the site, or is part of a regional chlorinated solvent plume. The perimeter monitoring wells, MW-5 and MW-6, have historically shown a maximum concentration of 72 micrograms per liter (µg/L) of TPHg and below the laboratory's indicated reporting limits for benzene, toluene, ethylbenzene, and total xylenes (BTEX).

March 1997: An off-site investigation was conducted in March 1997 to assess any impacts in the down-gradient direction from monitoring well MW-1. Monitoring well MW-1 is the most down-gradient of the wells at the site and has historically contained the highest concentrations of petroleum hydrocarbons in groundwater throughout the duration of the site investigation.

Three direct push borings (EB-3, EB-4, and EB-5) were advanced through East 14th Street in a northerly transect from the site. The three borings were each advanced to total depths ranging from 11 to 15 feet below grade. Groundwater was encountered at depths ranging from 10.5 to 15 feet bgs during drilling. No reportable target compounds were identified in either soil or groundwater samples.

1998 – A *Case Closure Summary* was prepared by the Alameda County Environmental Protection Department. This document concluded that drinking water wells are not affected. It also documented the maximum contaminant concentrations – before and after cleanup as follows:

Contaminant	Soil (ppm)			Water (ppb)	
	Before	After		Before	After
TPHg	3,500	1,100		19,000	510
TPHd	ND	6.2		NA	NA
Benzene	40	8		230	72
Toluene	280	43		79	ND
Xylenes	600	230		1,300	17
Ethyl-benzene	100	37		ND	ND
Methyl tert-butyl ether (MTBE)	NA	NA		NA	390
TOG	7,700	1,300		NA	NA
Heavy Metals	NA	NA		NA	NA
Other HVOC TCE	0.063	ND	TCE	4.4	ND
			PCE	110	950
			1,2-DCA	2.8	ND

The *Case Closure Summary* concluded that "there are no known municipal or residential water wells or surface water bodies within 750 feet down-gradient of the subject site that would be impacted by shallow groundwater from this site".

December 2000: The ACHCSA issued a *Case Closure* letter dated December 26, 2000.

2003: Six groundwater monitoring wells (MW-1, MW-2A, and MW-3 through MW-6) destroyed. Groundwater was at 6-11 feet bgs.

September 2007: Six soil borings (ATC-1 through ATC-6) were advanced in the vicinity of the existing fuel and waste-oil USTs and dispensers on September 25 and 26, 2007. The borings were advanced to total depths of

approximately 20 feet bgs (ATC-2, ATC-3, ATC-4, and ATC-5) and 25 feet bgs (ATC-1 and ATC-6). Groundwater was initially encountered at depths ranging from 14 feet bgs to 24 feet bgs during drilling activities.

Groundwater samples were collected from each of the six borings. A duplicate groundwater sample designated as "Duplicate B-1" was collected from boring ATC-1. Photo ionization detector (PID) readings from the screened soil samples ranged from 1.4 ppm to 2,272 ppm. The analytical results from the ATC Investigation are outlined in Delta's *Addendum to Additional Site Assessment Work Plan* dated April 3, 2009.

December 2009: Delta advanced six soil borings (B-1 through B-5, and B-7) to assess the extent of petroleum hydrocarbon impact to the soil and groundwater. The borings were advanced to total depths ranging from 24 to 32 feet bgs. First groundwater was encountered at depths ranging from 21 to 28.5 feet bgs during drilling activities.

Soil and groundwater samples were collected from each of the six borings. PID readings from the screened soil samples ranged from 0.2 ppm to 197 ppm. The analytical results indicated that TPHg was present in the soil at a maximum concentration of 603 mg/kg (B-1 at 12 feet) and in the groundwater at a maximum concentration of 2,110 µg/L (B-1). The analytical results from the December 2009 Investigation are outlined in Delta's *Subsurface Soil and Groundwater Investigation Report* dated March 23, 2010.

January 2011: Delta Consultants rebranded to Antea Group.

April 5, 2011: Antea Group completed a site investigation consisting of the installation of four on-site monitoring wells (MW-7 through MW-10). The results of the investigation are presented in the *Site Investigation Report*, dated July 5, 2011.

SENSITIVE RECEPTORS

1991: The well survey performed by KEI focused on the area within a one-half mile radius of the subject site, and was based upon data obtained from the Alameda County Flood Control and Water Conservation District. The information revealed the presence of 15 producing wells designated as irrigation wells and had depths ranging from 20 to 440 feet bgs.

The Alameda County Flood Control and Water Conservation District records suggested that the status of many of the irrigation wells is unknown. In the 1991 survey, it was stated that "no producing wells that could possibly influence the groundwater flow direction at the subject site were located". The closest irrigation well (148 feet deep) installed in 1949 was noted in the north corner of East 14th Street and 159th Avenue.

2008: This survey entailed a request to the California Department of Water Resources (DWR) office in Sacramento to provide well log records. DWR well log records were reviewed in order to assess the location of any water-supply wells in the vicinity of the subject site. Using the DWR well logs, a total of five wells had verifiable addresses within a half-mile radius of the site.

Stains and spills have been documented at the adjacent site to the east, SpeeDee Oil Change shop, located at 15900 East 14th Street, including staining from leaking automobiles, spills not cleaned up immediately, a spill migrating toward a storm drain inlet, a spill in the driveway not cleaned up, and a spill beneath the waste-oil UST was not appropriately addressed. Moreover, it is documented that solvents were used at this adjacent site in 1993 and based on that site history; it appears that solvents have been used at that site for decades.

2012: Antea Group reviewed well records from the Alameda County Public Works Agency as well as the DWR well log records. Sixteen irrigation wells had identifiable addresses in the search area and five wells has insufficient data to locate, but may be within the search area. In addition Antea Group conducted a web based search for potential receptors and a site reconnaissance to confirm receptor locations and locate additional receptors. Fourteen other receptors (daycares, senior cares, places of worship, schools, and water bodies) were identified in the web based search and the site reconnaissance. Based on the distance from the site and the location with respect to prevailing groundwater flow direction, no wells or other receptors appear to be affected by soil, soil vapor, or groundwater impact due to a release at the site.

Current Consultant: **Antea Group**

Appendix B

Antea Group Groundwater Sampling Procedures

FIELD METHODS AND PROCEDURES

The following section describes field procedures that are to be used by Antea Group personnel in the performance of the tasks involved with this project.

1.0 HEALTH AND SAFETY PLAN

Fieldwork performed by Antea Group and Antea Group's subcontractors at the site will be conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document that describes the hazards that may be encountered in the field and specifies protective equipment, work procedures and emergency information. A copy of the SHSP will be at the site and available for reference by appropriate parties during work at the site.

2.0 GROUNDWATER DEPTH ASSESSMENT

A water/product interface probe is used to assess the liquid-phase hydrocarbons (LPH) thickness, if present, and a water level indicator is used to measure the groundwater depth in monitoring wells that do not contain LPH. Depth to groundwater or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typically a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for LPH sheen.

3.0 SUBJECTIVE ANALYSIS OF GROUNDWATER

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

4.0 MONITORING WELL SAMPLING

Monitoring wells are purged using a pump or bailer until pH, temperature and conductivity of the purge water has stabilized and a minimum of three well volumes of water has been removed. The purge water is placed in 55-gallon drums and temporarily stored onsite pending evaluation of disposal options. If three well volumes cannot be removed in one-half an hour's time, the well is allowed to recharge to 80 percent of original level. After recharging, a groundwater sample is then removed from each of the wells using a pump or disposable bailer. The water sample is collected, labeled and handled according to the Quality Assurance Plan. Water generated during the monitoring event is disposed of according to the accepted regulatory method pertaining to the site.

5.0 QUALITY ASSURANCE PLAN

This section describes the field and analytical procedures to be followed by Antea Group throughout the investigation.

5.1 General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample will be collected in the appropriate container, preserved correctly for the intended analysis and stored, prior to analysis, for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of soil samples from this project can be found in previous sections.

5.2 Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis will have a label affixed to identify the job number, sampler, date and time of sample collection and a sample number unique to that sample. During soil sampling, this information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel and any other pertinent field observations will be recorded on the borehole log or in the field records.

Appendix C

Antea Group Groundwater Sampling Field Data Sheets

Well-Head Inspection & Well Gauging Form

Antea Group Project No: I40256277 **Site Address:** 15803 East 14th Street, San Leandro, CA

Field Technician: Jon Fillingame, Antea Group *(Print Full Name & Company*)* **Date:** 8/14/12 **Weather:** Sunny

Sample Order	Field Point	Well Condition: Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time Gauged	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
1	MW-9	X	X	X	X	X	N	2"	10:22	9.74	23.93	—	—	
2	MW-8	X	X	X	X	X	N	2"	10:25	9.63	19.71	—	—	
3	MW-10	X	X	X	X	X	N	2"	10:29	10.82	19.72	—	—	
4	MW-7	X	X	X	X	X	N	2"	10:33	9.56	18.94	—	—	

Notes: There is one full drum on the west side of the station building

** All well caps opened at least 15 minutes or longer before gauging wells:
CIRCLE ONE: (YES) or NO**

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*Form provided by Antea Group

Note: Use G=good and P=poor for well condition

Groundwater Sampling Form

Site Address:	15803 East 14th Street, San Leandro, CA		
Project No:	I40256277	Field Technician:	Jon Fillingame
Field Point:	MW-7	Date:	
Depth to Water (DTW) (ft bgs):	9.56	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	18.94	Water Column Height (ft):	9.38

Purging Info and Calculations:

Purge Method:

Low-Flow
(3 casing volumes)
Other:_____

Purge Equipment:

Disposable Bailer
(Electric Submersible)
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:

(Disposable Bailer)
Extraction Port
Dedicated Tubing
Disposable Tubing
Other:_____

Water Column Height (ft): 9.38 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 1.59

Casing Volume (gal): 1.59 X Specified Volumes: 3 = Calculated Purge (gal): 4.77

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:**_____ **Stop Time:**_____

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge								
13:53	21.82	7.97	1316	-4.1	275	1.21	0.5	
13:54	20.68	7.81	1307	6.4	647	0.51	1.6	
13:56	20.55	7.75	1301	11.1	103	0.34	3.2	
13:57	20.54	7.69	1299	14.2	26.31	0.28	4.8	
Post-Purge								

Did Well dewater? Yes (No) Total Purge volume (gal): 5.5

Other Comments:

Sample Info:

Sample ID:	MW-7_20120831	Sample Date and Time:	8/14/12 14:10
Selected Analysis:	8260		

This form was provided by Antea Group and completed by: (Print Full Name) Jonathan Fillingame

Signature: Jon Fillingame Date: 8/14/12

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

Groundwater Sampling Form

Site Address:	15803 East 14th Street, San Leandro, CA		
Project No:	I40256277	Field Technician:	Jon Fillingame
Field Point:	MW-8	Date:	8/14/12
Depth to Water (DTW) (ft bgs):	9.63	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	19.71	Water Column Height (ft):	10.08

Purging Info and Calculations:

Purge Method:
Low-Flow
(3 casing volumes)
Other:_____

Purge Equipment:
(Disposable Bailer)
(Electric Submersible)
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:
(Disposable Bailer)
Extraction Port
Dedicated Tubing
Disposable Tubing
Other:_____

Water Column Height (ft): 10.08 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 1.71

Casing Volume (gal): 1.71 X Specified Volumes: 3 = Calculated Purge (gal): 5.13

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:**_____ **Stop Time:**_____

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge								
12:33	24.56	7.97	1245	25.6	366	0.96	0.5	
12:36	22.01	7.77	1233	29.7	702	0.50	1.75	
12:37	21.55	7.74	1229	28.3	259	0.41	3.50	
12:39	21.51	7.69	1227	29.5	70	0.33	5.25	
Post-Purge								

Did Well dewater? Yes (No) Total Purge volume (gal): 6.0

Other Comments:

Sample Info:

Sample ID:	MW-8_20120814	Sample Date and Time:	8/14/12 12:45
Selected Analysis:	8260		

This form was provided by Antea Group and completed by: (Print Full Name) Jonathan Fillingame

Signature: Jonathan Fillingame Date: 8/14/12

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

Groundwater Sampling Form

Site Address:	15803 East 14th Street, San Leandro, CA		
Project No:	I40256277	Field Technician:	Jon Fillingame
Field Point:	MW-9	Date:	8/14/12
Depth to Water (DTW) (ft bgs):	9.74	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):	—	Thickness of LNAPL (ft):	—
Total Depth of Well (ft bgs):	23.93	Water Column Height (ft):	14.19

Purging Info and Calculations:

Purge Method: (Low-Flow, 3 casing volumes) Other:_____

Purge Equipment: (Electric Submersible) Disposable Bailer, Peristaltic Pump, Bladder Pump, Other:_____

Sample Collection Method: (Disposable Bailer) Extraction Port, Dedicated Tubing, Disposable Tubing, Other:_____

Water Column Height (ft): 14.19 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 2.41

Casing Volume (gal): 2.41 X Specified Volumes: 3 = Calculated Purge (gal): 7.23

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:**_____ **Stop Time:**_____

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge								
11:06	21.69	7.27	1260	-24.7	736	3.70	1	
11:07	20.33	7.34	1229	-12.5	735	1.90	3	
11:09	20.22	7.36	1224	-0.3	64	0.69	5	
11:11	20.21	7.37	1224	4.5	28.51	0.43	7.5	
Post-Purge								

Did Well dewater? Yes (No) Total Purge volume (gal): 8.0

Other Comments:

Sample Info:

Sample ID:	MW-9_20120831	Sample Date and Time:	8/14/12 11:20
Selected Analysis:	8260		

This form was provided by Antea Group and completed by: (Print Full Name) Jonathan Fillingame

Signature: Jon Fillingame Date: 8/14/12

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Antea™Group, 1-800-477-7411

LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

Groundwater Sampling Form

Site Address:	15803 East 14th Street, San Leandro, CA		
Project No:	I40256277	Field Technician:	Jon Fillingame
Field Point:	MW-10	Date:	8/14/12
Depth to Water (DTW) (ft bgs):	10.82	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	19.72	Water Column Height (ft):	8.90

Purging Info and Calculations:

Purge Method:
Low-Flow
(3 casing volumes)
Other:_____

Purge Equipment:
Disposable Bailer
(Electric Submersible)
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:
(Disposable Bailer)
Extraction Port
Dedicated Tubing
Disposable Tubing
Other:_____

Water Column Height (ft): 8.9 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 1.51

Casing Volume (gal): 1.51 X Specified Volumes: 3 = Calculated Purge (gal): 4.53

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:**_____ **Stop Time:**_____

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge								
13:14	23.10	7.77	1318	52.0	370	1.02	0.5	
13:16	21.25	7.62	1322	50.8	191	0.58	1.50	
13:17	20.96	7.56	1330	50.1	555	0.53	3.0	
13:18	20.9	7.51	1334	47.4	348	0.47	4.5	
Post-Purge								

Did Well dewater? Yes (No) Total Purge volume (gal): 5.0

Other Comments:

Sample Info:

Sample ID:	MW-10-20120831	Sample Date and Time:	8/14/12 13:25
Selected Analysis:	8260		

This form was provided by Antea Group and completed by: (Print Full Name) Jonathan Fillingame

Signature: Jon Fillingame Date: 8/14/12

anteagroup
Antea™Group, 1-800-477-7411

LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen
gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

anteagroup

COP ELT CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

3Q12 GW Event

Required Lab Information:

Lab Name:	Kiff
Address:	2795 Second Street #300
Davis, CA 95618	
Lab PM:	Scott Forbes
Phone/Fax:	P: 530-297-4800
Lab PM email	sforbes@kiffanalytical.com
Applicable Lab Quote #:	

Required Project Information:

Site ID #:	256277	Task:	WG_Q_201208
AnteaGrp proj#	140256277		
Site Address	15803 East 14th Street		
City	San Leandro	State	CA
AG PM Name:	Dennis Dettloff		
Phone/Fax:	P: 916-503-1261 F: 916-638-8385		
AG PM Email:	Dennis.Dettloff@anteagroup.com		

Required Invoice Information:

Send Invoice to:	Tara Bosch				
Address:	11050 White Rock Road Suite 110				
City/State	Rancho Cordova CA 95670	Phone #:	916-503-1267		
Reimbursement project?		Non-reimbursement project?	Y	Mark one	
Send EDD to	copeltdata@intelligentehs.com				
CC Hardcopy report to					
CC Hardcopy report to					

Turn around time (days)	10				
QC level Required: Standard		Special		Mark one	
NJ Reduced Deliverable Package?					
MA MCP Cert?		CT RCP Cert?		Mark One	
Lab Project ID (lab use)					

Valid Matrix Codes

MATRIX		MATRIX	
DRINKING WATER	WP	WATER	W
GROUND WATER	WG	SURFACE WATER	WS
WASTE WATER	WW	WATER OC	WO
FREE PRODUCT	LF	SLUDGE	SL
SOIL	SO	RINSEATE	WH
OIL	OL	OTHER	OT
WIPE	SW	ANIMAL TISSUE	TA
AMBIENT AIR	AA		
SVE AIR	AE		
SOIL GAS	GS		

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE)	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N)	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analyses: 8260 GCMS GRO	8260Btex/MTBE/7OxyCA	Comments/Lab Sample I.D.	
1	MW-10_20120831	WG	G	8/14/12	13:25						X					X	X	7 Oxy's = DIPE, TBA, TAME, ETBE, 1,2DCA, EDB, and Ethanol	01
2	MW-7_20120831	WG	G	8/14/12	14:10						X					X	X		02
3	MW-8_20120831	WG	G	8/14/12	12:45						X					X	X		03
4	MW-9_20120831	WG	G	8/14/12	11:20						X					X	X		04
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Additional Comments/Special Instructions:

Global ID: T0619718179

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jonathan Fillingame	8/14/12	16:43			
			Kiff Analytical	08/14/12	1643

SHIPPING METHOD (Mark as appropriate) SAMPLER NAME AND SIGNATURE

UPS COURIER FEDEX US MAIL

PRINT Name of SAMPLER: Jonathan Fillingame

SIGNATURE of SAMPLER: Jonathan Fillingame DATE Signed 8/14/12 Time: 16:41

Sample Receipt Conditions

	Temp in °C	Samples on Ice?	Sample Intact?	Trip Blank?
	Y/N	Y/N	Y/N	
	Y/N	Y/N	Y/N	
	Y/N	Y/N	Y/N	
	Y/N	Y/N	Y/N	

Appendix D

Certified Laboratory Analytical Report and Data Validation Form

KIFF Analytical LLC

Report Number : 82282
Date : 08/21/2012

Laboratory Results

Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Subject : 4 Water Samples
Project Name : I40256277
Project Number : I40256277

Dear Mr. Dettloff,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy G. Turpen

Troy Turpen

KIFF Analytical LLC

Analysis Summary

Report Number : 82282
Date : 08/21/12

Attention : Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Project Name :I40256277
Project Number : I40256277

			Sample Name	MW-10_20120831		MW-7_20120831		MW-8_20120831		MW-9_20120831	
			Sample Date	08/14/12		08/14/12		08/14/12		08/14/12	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
Ethylbenzene	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
Toluene	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
Total Xylenes	EPA 8260B	ug/L		0.50	ND	0.50	**0.72**	0.50	ND	0.50	ND
Diisopropyl ether (DIPE)	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
Ethanol	EPA 8260B	ug/L		5.0	ND	5.0	ND	5.0	**14**	5.0	**5.4**
Ethyl-t-butyl ether (ETBE)	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L		0.50	**19**	0.50	**63**	0.50	**7.6**	0.50	**2.6**
Tert-Butanol	EPA 8260B	ug/L		5.0	ND	5.0	ND	5.0	ND	5.0	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
TPH as Gasoline	EPA 8260B	ug/L		50	**150**	50	**270**	50	**260**	50	**260**
1,2-Dibromoethane	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
1,2-Dichloroethane	EPA 8260B	ug/L		0.50	ND	0.50	ND	0.50	ND	0.50	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			104		101		100		99.9
Toluene - d8 (Surr)	EPA 8260B	%			98.4		98.6		98.6		98.0

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 82282
Date : 08/21/12

Project Name : **I40256277**
Project Number : **I40256277**

Sample : **MW-10_20120831** Matrix : Water Lab Number : 82282-01
Sample Date :08/14/12

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Methyl-t-butyl ether (MTBE)	**19**	0.50	ug/L	EPA 8260B	08/20/12 12:39
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 12:39
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 12:39
TPH as Gasoline (Note: Primarily compounds not found in typical Gasoline)	**150**	50	ug/L	EPA 8260B	08/20/12 12:39
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 12:39
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	08/20/12 12:39
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	08/20/12 12:39

KIFF Analytical LLC

Report Number : 82282
Date : 08/21/12

Project Name : **I40256277**
Project Number : **I40256277**

Sample : **MW-7_20120831** Matrix : Water Lab Number : 82282-02
Sample Date :08/14/12

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Total Xylenes	**0.72**	0.50	ug/L	EPA 8260B	08/20/12 13:17
Methyl-t-butyl ether (MTBE)	**63**	0.50	ug/L	EPA 8260B	08/20/12 13:17
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 13:17
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 13:17
TPH as Gasoline (Note: Primarily compounds not found in typical Gasoline)	**270**	50	ug/L	EPA 8260B	08/20/12 13:17
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:17
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	08/20/12 13:17
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	08/20/12 13:17

KIFF Analytical LLC

Report Number : 82282
Date : 08/21/12

Project Name : **I40256277**
Project Number : **I40256277**

Sample : **MW-8_20120831** Matrix : Water Lab Number : 82282-03
Sample Date :08/14/12

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Methyl-t-butyl ether (MTBE)	**7.6**	0.50	ug/L	EPA 8260B	08/20/12 13:51
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 13:51
Ethanol	**14**	5.0	ug/L	EPA 8260B	08/20/12 13:51
TPH as Gasoline	**260**	50	ug/L	EPA 8260B	08/20/12 13:51
(Note: Primarily compounds not found in typical Gasoline)					
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 13:51
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	08/20/12 13:51
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	08/20/12 13:51

KIFF Analytical LLC

Report Number : 82282
Date : 08/21/12

Project Name : **I40256277**
Project Number : **I40256277**

Sample : **MW-9_20120831** Matrix : Water Lab Number : 82282-04
Sample Date :08/14/12

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Methyl-t-butyl ether (MTBE)	**2.6**	0.50	ug/L	EPA 8260B	08/20/12 14:28
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12 14:28
Ethanol	**5.4**	5.0	ug/L	EPA 8260B	08/20/12 14:28
TPH as Gasoline (Note: Primarily compounds not found in typical Gasoline)	**260**	50	ug/L	EPA 8260B	08/20/12 14:28
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12 14:28
1,2-Dichloroethane-d4 (Surr)	99.9		% Recovery	EPA 8260B	08/20/12 14:28
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	08/20/12 14:28

Report Number : 82282

Date : 08/21/12

QC Report : Method Blank Data

Project Name : **I40256277**

Project Number : **I40256277**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/20/12
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/20/12
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/20/12
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	08/20/12
Toluene - d8 (Surr)	100		%	EPA 8260B	08/20/12

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 08/21/12

Project Name : **I40256277**

Project Number : **I40256277**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane														
	82241-01	<0.50	39.9	39.9	39.6	41.3	ug/L	EPA 8260B	8/20/12	99.3	104	4.13	80-120	25
1,2-Dichloroethane														
	82241-01	<0.50	40.0	40.0	38.6	39.5	ug/L	EPA 8260B	8/20/12	96.4	98.7	2.37	75.7-122	25
Benzene														
	82241-01	<0.50	40.0	40.0	39.2	39.2	ug/L	EPA 8260B	8/20/12	97.9	98.0	0.142	80-120	25
Diisopropyl ether														
	82241-01	<0.50	39.5	39.5	40.1	40.3	ug/L	EPA 8260B	8/20/12	101	102	0.614	80-120	25
Ethanol														
	82241-01	<5.0	99.7	99.7	113	113	ug/L	EPA 8260B	8/20/12	113	113	0.190	55.1-159	25
Ethyl-tert-butyl ether														
	82241-01	<0.50	39.8	39.8	39.6	39.2	ug/L	EPA 8260B	8/20/12	99.4	98.5	0.926	76.5-120	25
Ethylbenzene														
	82241-01	<0.50	40.0	40.0	39.0	38.6	ug/L	EPA 8260B	8/20/12	97.4	96.4	1.05	80-120	25
Methyl-t-butyl ether														
	82241-01	<0.50	40.0	40.0	38.4	38.4	ug/L	EPA 8260B	8/20/12	96.1	96.0	0.147	69.7-121	25
P + M Xylene														
	82241-01	<0.50	40.0	40.0	39.8	39.4	ug/L	EPA 8260B	8/20/12	99.6	98.6	0.999	76.8-120	25
Tert-Butanol														
	82241-01	<5.0	202	202	197	198	ug/L	EPA 8260B	8/20/12	97.8	98.4	0.631	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 82282

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 08/21/2012

Project Name : **I40256277**

Project Number : **I40256277**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	82241-01	<0.50	39.9	39.9	38.4	38.8	ug/L	EPA 8260B	8/20/12	96.2	97.0	0.900	78.9-120	25
Toluene														
	82241-01	<0.50	40.0	40.0	39.0	39.4	ug/L	EPA 8260B	8/20/12	97.5	98.5	1.00	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **I40256277**

Project Number : **I40256277**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	8/20/12	103	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	8/20/12	99.2	75.7-122
Benzene	40.0	ug/L	EPA 8260B	8/20/12	97.5	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	8/20/12	102	80-120
Ethanol	99.7	ug/L	EPA 8260B	8/20/12	118	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	8/20/12	100	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	8/20/12	96.9	80-120
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	8/20/12	98.5	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	8/20/12	99.5	76.8-120
Tert-Butanol	202	ug/L	EPA 8260B	8/20/12	98.0	80-120
Tert-amyl-methyl ether	39.9	ug/L	EPA 8260B	8/20/12	100	78.9-120
Toluene	40.0	ug/L	EPA 8260B	8/20/12	98.0	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

anteagroup

COP ELT CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

82282

3Q12 GW Event

Required Lab Information:		**Required** Project Information:				**Required** Invoice Information:					
Lab Name:	Kiff	Site ID #:	256277	Task:	WG_Q_201208	Send Invoice to:	Tara Bosch				
Address:	2795 Second Street #300	AnteaGrp proj#	I40256277			Address:	11050 White Rock Road Suite 110			Turn around time (days)	10
Davis, CA 95618		Site Address	15803 East 14th Street			City/State	Rancho Cordova CA 95670	Phone #:	916-503-1267	QC level Required: Standard	Special / Mark one
Lab PM:	Scott Forbes	City	San Leandro	State	CA	Reimbursement project?		Non-reimbursement project?	Y / Mark one	NJ Reduced Deliverable Package?	
Phone/Fax:	P: 530-297-4800	AG PM Name:	Dennis Dettloff			Send EDD to	copeltdata@intelligentehs.com			MA MCP Cert?	CT RCP Cert? / Mark One
Lab PM email	sforbes@kiffanalytical.com	Phone/Fax:	P: 916-503-1261 F: 916-638-8385			CC Hardcopy report to				Lab Project ID (lab use)	
Applicable Lab Quote #:		AG PM Email:	Dennis.Dettloff@anteagroup.com			CC Hardcopy report to					

Valid Matrix Codes

MATRIX		MATRIX	
DRINKING WATER	WP	WATER	W
GROUND WATER	WG	SURFACE WATER	WS
WASTE WATER	WW	WATER QC	WQ
FREE PRODUCT	LF	SLUDGE	SL
SOIL	SO	RINSEATE	WH
OIL	OL	OTHER	OT
WIPE	SW	ANIMAL TISSUE	TA
AMBIENT AIR	AA		
SVE AIR	AE		
SOIL GAS	GS		

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE)	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N)	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analyses: 8260 GC/MS GRO	8260BtexMTBETOxyCA	Comments/Lab Sample I.D.	
1	MW-10_20120831	WG	G	8/14/12	13:25						X					X	X	7 Oxy's = DIPE, TBA, TAME, ETBE, 1,2DCA, EDB, and Ethanol	01
2	MW-7_20120831	WG	G	8/14/12	14:10						X					X	X		02
3	MW-8_20120831	WG	G	8/14/12	12:45						X					X	X		03
4	MW-9_20120831	WG	G	8/14/12	11:20						X					X	X		04
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Additional Comments/Special Instructions:

Global ID: T0619718179

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jonathan Fillingame	8/14/12	16:43			
			Kiff Analytical	08/14/12	1643

Sample Receipt Conditions

	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SHIPPING METHOD (mark as appropriate)	SAMPLER NAME AND SIGNATURE			
UPS COURIER FEDEX	PRINT Name of SAMPLER:	Jonathan Fillingame		
US MAIL	SIGNATURE of SAMPLER:	DATE Signed: 8/14/12	Time: 16:41	

Temp in °C	Samples on Ice?	Sample intact?	Trip Blank?

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER LJR Initials

SRG#: 82282 Date: 081412

Project ID: I4025627 7

Method of Receipt: ☐ Courier ☒ Over-the-counter ☐ Shipper

Shipping Only: ☐ FedEx * ☐ OnTrac * ☐ Greyhound ☐ Other *Service level if not Priority or Sunrise (M-F): _____

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples?	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☒ Yes	☐ No, Whiteout	☐ No, Cross-outs	

Sample Inspection

Coolant Present: 3.6 ☒ Yes ☐ No (includes water)

Temperature °C 3.6 Therm. ID# IR-3 Initial LJR Date/Time 081412/1643 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☒ Yes, on COC	☐ Not indicated	☐ N/A	
Are preservatives correct for analyses requested?	☒ Yes	☐ No	☐ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?	☐ Yes	☒ No		

Receipt Details

Matrix WA	Container type VOA	# of containers received 12
Matrix _____	Container type _____	# of containers received _____
Matrix _____	Container type _____	# of containers received _____

Date and Time Sample Put into Temp Storage Date: 081412 Time: 1643

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Is the Project ID indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS: COC requests GRO by 8260 - per S. Forbes, SR will log in as Gas by 8260. MAS 081512 1051

O:\old_ed\samprec\Forms\Sample Receipt Checklist rev 072412.doc

Is the Data Valid? (circle) Yes / No	Preservation Temperature (if Known): 3.6 °C

Antea Group Lab Validation Sheet

Project/Client: COP/ELT
Project #: I40256277
Date of Validation: 9/11/12 **Date of Analysis:** 8/20/12 **Sample Date:** 8/14/12
Completed By: Jon F. **Signature:** Jonathan F. Wigmore
Analytical Lab Used and Report # (if any): Kiff Analytical LLC 82282

	Circle or Highlight Yes/No below	
1. Was the analysis the one requested?	(Yes) / No	
2. Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	(Yes) / No	
3. Were samples prepared (extracted, filtered, etc.) within EPA holding times?	(Yes) / No	
4. Once prepared/extracted, were the samples analyzed within the EPA holding times?	(Yes) / No	
5. Were Laboratory blanks performed, if so, were they below non-detect?	(Yes) / No	
6. Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	(Yes) / No	
7. Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	(Yes) / No	
8. In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	Yes / No	(N/a)
9. Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approx 80-120% depending on analyte)?	(Yes) / No	
10. Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	(Yes) / No	
11. Were Relative Percent Difference values within the acceptable range (i.e. ± 25%)?	(Yes) / No	

If any answer is no, explain why and what corrective action was taken: