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August 15, 2014

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RECEIVED

By Alameda County Environmental Health at 9:14 am, Sep 17, 2014

Re: Facility No. 9-9708
5910 MacArthur Boulevard, Oakland, California

Dear Mr. Detterman:

Attached for your review is the *First Semiannual 2014 Groundwater Monitoring Report* for the above-referenced site. This report was prepared by ARCADIS, upon whose assistance and advice I have relied. I declare under penalty of perjury that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge. Should you have any further questions, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in blue ink that reads "Kelly C York".

Kelly C. York
Project Manager

KCY:st
Encl.



Mr. Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:

First Semiannual 2014 Groundwater Monitoring Report
Former Chevron Service Station No. 9-9708
5910 MacArthur Boulevard
Oakland, California
Fuel Leak Case No. RO0000124

Dear Mr. Detterman:

ARCADIS has prepared this *First Semiannual 2014 Groundwater Monitoring Report* on behalf of Chevron Environmental Management Company (Chevron) to document the results of groundwater monitoring and sampling at former Chevron Station No. 9-9708, located at 5910 MacArthur Boulevard in Oakland, California (Figure 1).

Groundwater Monitoring and Sampling

Groundwater monitoring and sampling was performed by Blaine Tech Services, Inc. (BTS) of San Jose, California on June 5 and 25, 2014. The groundwater monitoring and sampling program consists of water level elevation monitoring, sample collection, and chemical analysis of samples for six monitoring wells (MW-1 through MW-6). All wells with the exception of Monitoring well MW-3 were monitored on June 5. MW-3 was monitored in June 25 as it was inaccessible during the June 5 site activities. Monitoring well MW-4 requires a City of Oakland encroachment permit to set up traffic control and access the well. The BTS groundwater monitoring and sample package is presented in Attachment 1. Separate phase hydrocarbons (SPH) were not observed during the first semiannual 2014 monitoring event, nor have they historically been observed at the site.

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ENVIRONMENT

Date:
August 15, 2014

Contact:
Toni DeMayo

Phone:
714.508.2657

Email:
Toni.DeMayo@
arcadis-us.com

Our ref:
B0060901.9708

Groundwater Flow

Depth-to-water measurements were subtracted from surveyed top of casing elevations to calculate the groundwater elevation at each monitoring well. Elevations are based on City of Oakland Benchmark located under a standard casting on the monument line of Camden Street. Depth-to-water measurements and calculated groundwater elevations are presented in Table 1. Calculated groundwater elevation data was used to construct a groundwater elevation contour map of the site, presented as Figure 2. Since monitoring well MW-3 was gauged at a later date, the groundwater elevation data was not used in the development of the potentiometric surface.

Laboratory Analysis

Subsequent to collection, samples were packed on ice, cooled to approximately 4 degrees Celsius (°C) and shipped under appropriate chain-of-custody protocols for analysis to Test America Laboratories, Inc. of Irvine, California, a California Department of Public Health certified analytical laboratory. Groundwater samples were screened for the following analytes per the parameters listed:

- Total petroleum hydrocarbons as motor oil (TPH-MO) [C₂₉-C₄₀] and total petroleum hydrocarbons as diesel (TPH-DRO) [C₁₀-C₂₈] by United States Environmental Protection Agency (USEPA) Method 8015B, with silica gel clean-up
- Total petroleum hydrocarbons as gasoline (TPH-GRO) [C₄-C₁₂] by USEPA Method 8015B
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) by USEPA Method 8260B
- Methyl tertiary butyl ether (MTBE) and ethanol by USEPA Method 8260B

A quality assurance/quality control (QA/QC) sample, inclusive of a trip blank, was submitted for laboratory analysis. The trip blank sample was analyzed for TPH-GRO, BTEX, MTBE and ethanol.

The analytical results of the groundwater samples collected during the first semiannual 2014 sampling event are generally consistent with the results of recent

semiannual groundwater sampling events. Concentrations of TPH-MO and TPH-DRO observed in the groundwater samples collected from monitoring wells MW-3 and MW-4 increased since the December 2013 groundwater monitoring event. The analytical sample concentrations are summarized in Table 1. A concentration map of TPH-MO, TPH-DRO and TPH-GRO is presented as Figure 3. The laboratory analytical report and chain-of-custody record for the semiannual groundwater sampling event are included in Attachment 2. The historical waste oil groundwater sampling data is included in Table 2.

Summary and Conclusions

- Groundwater flowed to the west-northwest across the site, at an approximate horizontal hydraulic gradient of 0.018 feet per foot (ft/ft). Groundwater elevation data from monitoring well MW-3 was not included in contouring since data was collected on a separate day from when the other wells were gauged.
- Arcadis will continue monitoring groundwater concentration trends on a semi-annual basis.

Sincerely,

ARCADIS U.S., Inc.

Toni DeMayo
Project Geologist

Melissa Blanchette, PG
Principal Geologist



Enclosures:

- Figure 1 Site Plan
- Figure 2 Groundwater Elevation Contour Map - First Semiannual 2014
- Figure 3 Concentration Map – First Semiannual 2014
- Table 1 Groundwater Monitoring Data and Analytical Results
- Attachment 1 Groundwater Monitoring and Sampling Field Data Sheets

Attachment 2 Laboratory Analytical Report and Chain-of-Custody Record

Copies:

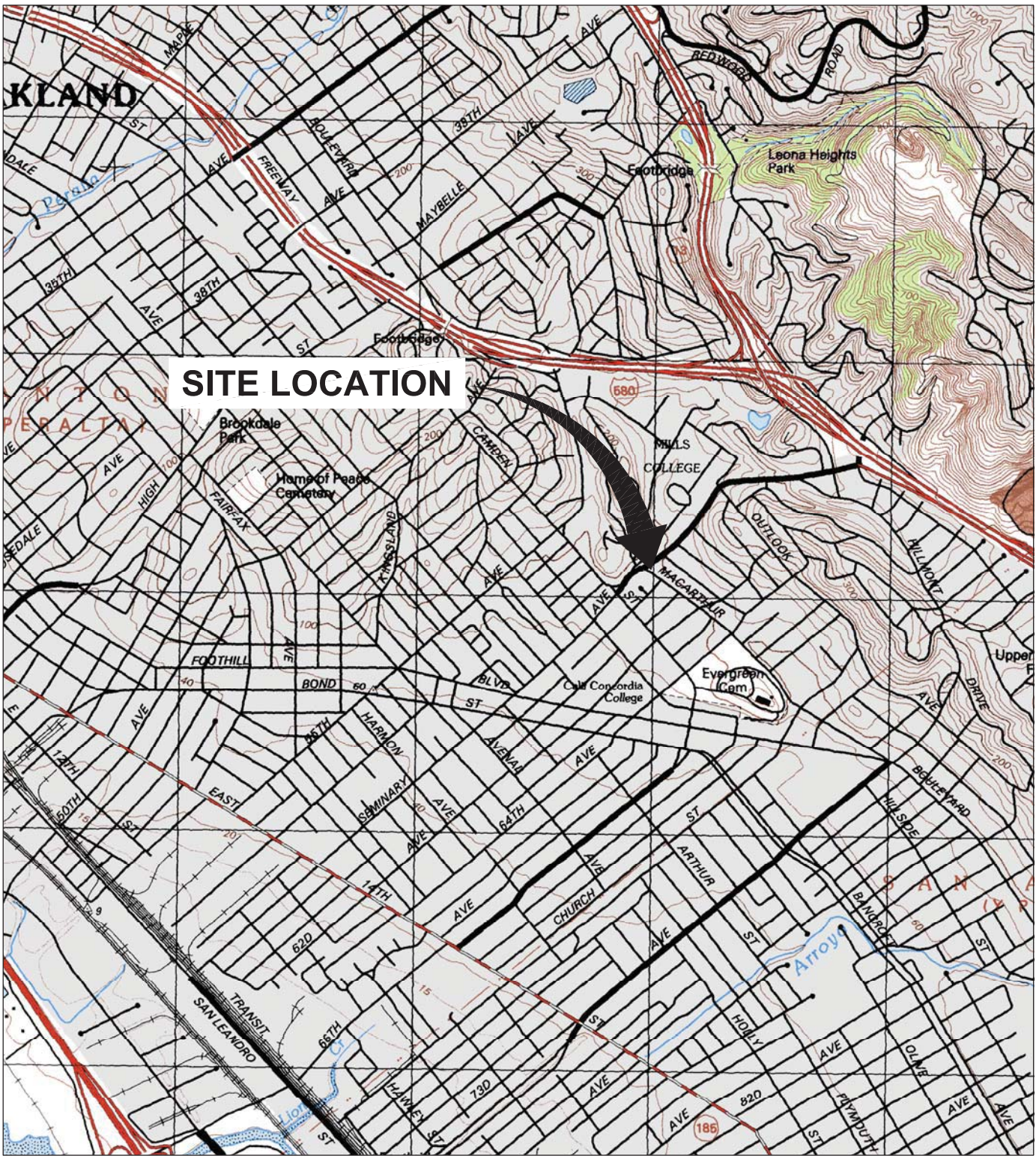
Ms. Kelly York – Chevron, electronic copy

Mr. Nisson Saidon, Property Owner

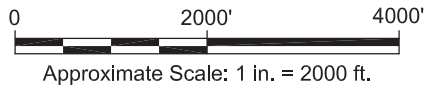
ARCADIS

Figures

CITY:(SYRACUSE) DIV:(GROUP:ENV/IN4-DV) DB:(HOWES) LD:(Opt) PIC:(NA) PM:(B/WALL) TM:(Opt) LY:(Opt) OFF=REF
 G:\ENV\CAD\STRACUSE\ACT\B00609019708\0000\INDWG\60901\IND1.dwg LAYOUT: 1 SAVED: 1/12/2012 8:12 AM ACADVER: 18.15 (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 1/12/2012 8:13 AM BY: HOWES, DAVID
 XREFS: IMAGES: PROJECTNAME: CA_Oakland_East.tif CA_Oakland_East.tif



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND EAST, CA, 1997.



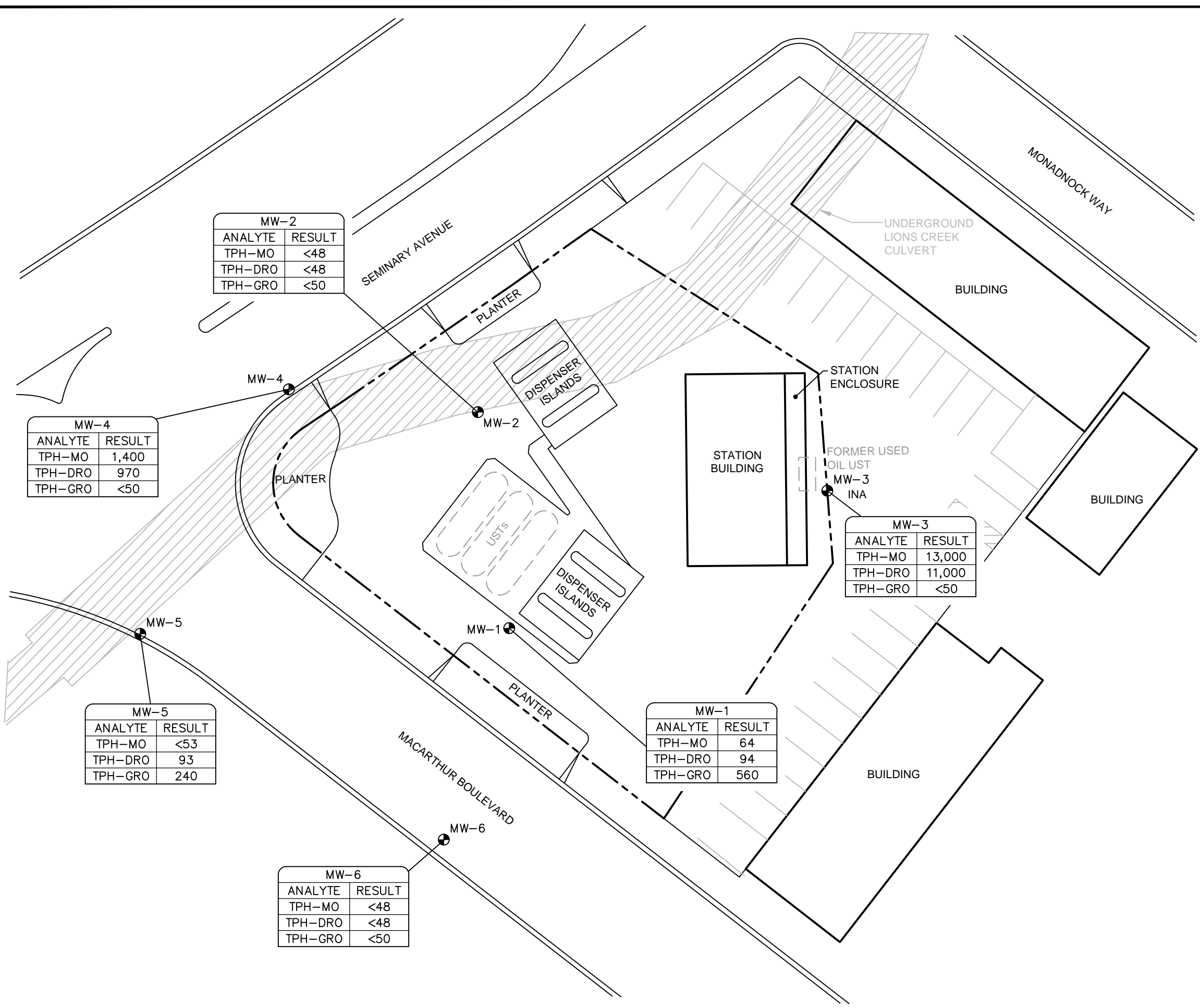
FORMER CHEVRON SERVICE STATION NO. 9-9708
 5910 MACARTHUR BOULEVARD, OAKLAND, CA

SITE LOCATION MAP



FIGURE
1

CITY: SYRACUSE, NY DIV/GROUP: ENV/MDV DB: R. BASSETT PM: R. ANDRESEN TM: B. WALL TR: M. AL-JOHAR LTR: ONM OFF-REF
 G:\ENV\CAD\SYRACUSE\SELECT\19708\00001\DWG\66901C01.dwg LAYOUT: 3 SAVED: 7/10/2014 5:00 PM ACADVER: 18.15 (LMS TECH) PAGES: 3
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LEGEND:

- PROPERTY LINE
- MONITORING WELL
- UST UNDERGROUND STORAGE TANK
- TPH-MO TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
- TPH-DRO TOTAL PETROLEUM HYDROCARBONS AS DIESEL
- TPH-GRO TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- <= NOT DETECTED ABOVE DETECTION LIMIT INDICATED
- INA INACCESSIBLE

- NOTES:**
1. BASE MAP DIGITIZED FROM A PHOTOCOPY OF A DRAWING BY CONESTOGA-ROVER ASSOCIATES (CRA) TITLED "GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP", DATED JUNE 13, 2011, @ A SCALE OF 1" = 30'.
 2. ALL LOCATIONS ARE APPROXIMATE.
 3. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER.



FORMER CHEVRON SERVICE STATION 9-9708
 5910 MACARTHUR BOULEVARD, OAKLAND, CA

CONCENTRATION MAP -
 FIRST SEMIANNUAL 2014

FIGURE
3

Tables

TABLE 1

**GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-9708
5910 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA**

Location	Date	TOC	DTW	GWE	TPH-MO C29-C40	TPH-DRO C10-C28	TPH-GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Ethanol
	Units	(ft amsl)	(ft)	(ft amsl)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
MW-1	06/13/11	97.52	11.25	86.27	<41	75	<50	<0.5	<0.5	<0.5	<0.5	13	<50
MW-1	12/02/11	97.52	12.82	84.70	<520	<520	140	1.7	<0.50	<0.50	<1.5	14	<150
MW-1	06/21/12	97.52	13.27	84.25	<470	<470	130	<0.50	<0.50	<0.50	<1.0	11	<150
MW-1	12/18/12	97.52	10.62	86.90	<48	94	70	0.79	<0.50	<0.50	<1.0	10	<150
MW-1	06/11/13	97.52	12.26	85.26	<48	120	820	17	0.87	0.67	<1.0	22	<150
MW-1	12/12/13	97.52	12.10	85.42	<49	120	480	2.9	<0.50	<0.50	<1.0	12	<150
MW-1	06/05/14	97.52	12.02	85.50	64	94	560	4.2	<0.50	0.62	<1.0	18	<150
MW-2	06/13/11	97.81	14.06	83.75	<41	<50	<50	<0.5	<0.5	<0.5	<0.5	1	<50
MW-2	12/02/11	97.81	13.42	84.39	<520	<520	<50	<0.50	<0.50	<0.50	<1.5	3.8	<150
MW-2	06/21/12	97.81	13.90	83.91	<480	<480	<50	<0.50	<0.50	<0.50	<1.0	15	<150
MW-2	12/18/12	97.81	12.97	84.84	<48	130	<50	2.4	<0.50	<0.50	<1.0	2.9	<150
MW-2	06/11/13	97.81	14.88	82.93	<51	<51	<50	<0.50	<0.50	<0.50	<1.0	18	<150
MW-2	12/12/13	97.81	13.50	84.31	<49	<49	<50	<0.50	<0.50	<0.50	<1.0	2.7	<150
MW-2	06/05/14	97.81	13.62	84.19	<48	<48	<50	<0.50	<0.50	<0.50	<1.0	11	<150
MW-3	06/13/11	98.78	11.69	87.09	38,000	19,000	<50	<0.5	2	<0.5	<0.5	<0.5	<50
MW-3	12/02/11	98.78	11.44	87.34	4,100	2,000	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<150
MW-3	06/21/12	98.78	11.80	86.98	1,500	6,800	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-3	12/18/12	98.78	10.21	88.57	570	1,800	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-3	06/11/13	98.78	12.20	86.58	860	4,100	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-3	12/12/13	98.78	INACCESSIBLE		--	--	--	--	--	--	--	--	--
MW-3	06/25/14	98.78	12.21	86.57	13,000	11,000	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150

TABLE 1

GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-9708
5910 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Location	Date	TOC	DTW	GWE	TPH-MO C29-C40	TPH-DRO C10-C28	TPH-GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Ethanol
	Units	(ft amsl)	(ft)	(ft amsl)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
MW-4	06/13/11	97.14	13.07	84.07	1,900	2,000	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50
MW-4	12/02/11	97.14	INACCESSIBLE		--	--	--	--	--	--	--	--	--
MW-4	06/21/12	97.14	14.43	82.71	620	1,900	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-4	12/18/12	97.14	12.68	84.46	1,400	3,100	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-4	06/11/13	97.14	14.20	82.94	120	590	<50	<0.50	1.8	<0.50	<1.0	<0.50	<150
MW-4	12/12/13	97.14	12.89	84.25	100	180	<50	<0.50	21	<0.50	<1.0	<0.50	<150
MW-4	06/05/14	97.14	13.41	83.73	1,400	970	<50	<0.50	8.6	<0.50	<1.0	<0.50	<150
MW-5	06/13/11	95.71	11.58	84.13	<42	240	240	<0.5	<0.5	<0.5	<0.5	0.9	<50
MW-5	12/02/11	95.71	11.68	84.03	<500	<500	180	<0.50	<0.50	<0.50	<1.5	1.4	<150
MW-5	06/21/12	95.71	12.22	83.49	<510	<510	200	<0.50	<0.50	<0.50	<1.0	0.68	<150
MW-5	12/18/12	95.71	10.32	85.39	<47	290	280	<0.50	<0.50	<0.50	<1.0	0.98	<150
MW-5	06/11/13	95.71	12.13	83.58	<47	190	170	<0.50	<0.50	<0.50	<1.0	0.64	<150
MW-5	12/12/13	95.71	10.94	84.77	<47	160	290	<0.50	<0.50	<0.50	<1.0	1.2	<150
MW-5	06/05/14	95.71	12.01	83.70	<53	93	240	<0.50	<0.50	<0.50	<1.0	1.1	<150
MW-6	06/13/11	95.84	10.59	85.25	<40	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50
MW-6	12/02/11	95.84	INACCESSIBLE		--	--	--	--	--	--	--	--	--
MW-6	06/21/12	95.84	INACCESSIBLE		--	--	--	--	--	--	--	--	--
MW-6	12/18/12	95.84	9.17	86.67	<47	<47	<50	<0.50	<0.50	<0.50	<1.0	2.2	<150
MW-6	06/11/13	95.84	10.90	84.94	<47	<47	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-6	12/12/13	95.84	10.73	85.11	<51	<51	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
MW-6	06/05/14	95.84	10.78	85.06	<48	<48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
QA	06/13/11	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

TABLE 1

**GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-9708
5910 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA**

Location	Date	TOC	DTW	GWE	TPH-MO C29-C40	TPH-DRO C10-C28	TPH-GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Ethanol
	Units	(ft amsl)	(ft)	(ft amsl)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
QA	12/02/11	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<150
QA	06/21/12	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
QA	12/18/12	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
QA	06/11/13	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
QA	12/12/13	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150
QA	06/05/14	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<150

Abbreviations and Notes:

TOC = Top of casing

DTW = Depth to Water (measured from top of casing)

GWE = Groundwater elevation

TPH-MO = Total petroleum hydrocarbons as motor oil range organics

TPH-DRO = Total petroleum hydrocarbons as diesel range organics

TPH-GRO = Total petroleum hydrocarbons as gasoline range organics

MTBE = Methyl tertiary butyl ether

Ft amsl = Feet above mean sea level

Ft = Feet

µg/l = micrograms per liter

< = Not detected above detection limit indicated

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

<u>Submittal Type:</u>	GEO_REPORT
<u>Report Title:</u>	99708 1SA14 GWMR 07292014
<u>Report Type:</u>	Monitoring Report - Semi-Annually
<u>Report Date:</u>	7/29/2014
<u>Facility Global ID:</u>	T0600102093
<u>Facility Name:</u>	CHEVRON #9-9708
<u>File Name:</u>	99708 1SA14 GWMR 07292014.pdf
<u>Organization Name:</u>	ARCADIS
<u>Username:</u>	ARCADISMT
<u>IP Address:</u>	108.171.130.188
<u>Submittal Date/Time:</u>	9/16/2014 1:36:33 PM
<u>Confirmation Number:</u>	8173601269

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STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

<u>Submittal Type:</u>	GEO_REPORT
<u>Report Title:</u>	Perjury Letter-GWMR 1SA 99708 08042014
<u>Report Type:</u>	Monitoring Report - Semi-Annually
<u>Report Date:</u>	8/4/2014
<u>Facility Global ID:</u>	T0600102093
<u>Facility Name:</u>	CHEVRON #9-9708
<u>File Name:</u>	Perjury Letter-GWMR 1SA 99708 08042014.pdf
<u>Organization Name:</u>	ARCADIS
<u>Username:</u>	ARCADISMT
<u>IP Address:</u>	108.171.130.188
<u>Submittal Date/Time:</u>	9/16/2014 1:42:33 PM
<u>Confirmation Number:</u>	2628801465

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