November 30, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Kerry & Associates – Palace Garage
14336 Washington Avenue
San Leandro, California
ACEH Case No. RO0000208

Dear Mr. Detterman,

I declare, under penalty of perjury, that the information and/or recommendations contained in the **Fourth Quarter 2012 Groundwater Monitoring Report** are true and correct to the best of my knowledge.

Sincerely,

Mr. Jeffrey Kerry

November 30, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1000 San Leandro Boulevard, Suite 300
San Leandro, CA 94577

Subject: **Fourth Quarter 2012 Groundwater Monitoring Report**
Palace Garage
14336 Washington Avenue
San Leandro, California
ACEH Case No. RO0000208
SFRWQCB LUFT Case No. 01-1133

Dear Mr. Detterman:

On behalf of Kerry & Associates, Closure Solutions, Incorporated (Closure Solutions) has prepared this *Fourth Quarter 2012 Groundwater Monitoring Report* (Report) for the Palace Garage facility (the Site), located at 14336 Washington Avenue, in San Leandro, California (Figure 1).

1.0 SITE BACKGROUND SUMMARY

A 550-gallon gasoline underground storage tank (UST) was removed from the Site in 1991. Subsequent investigations included the installation of three monitoring wells (MW-1 through MW-3) and the drilling of 15 borings (B-1 through B-15). Based on data obtained from the wells and borings, impacted unsaturated-zone soil is confined to the area of the former dispenser pad and UST. The primary groundwater flow direction is toward the southwest.

In December 2002, Professional Service Industries, Inc. (PSI) conducted a soil and groundwater investigation to evaluate the lateral extent of petroleum hydrocarbons in the soil and groundwater at the Site. Borings B-16 and B-17 were advanced to between 20 and 24 feet below ground surface (bgs). Boring B-16 was converted into monitoring well MW-4. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and gasoline related contaminants were detected only in soil from boring B-17 and groundwater from wells MW-1 and MW-2. The locations of the monitoring wells and soil borings are presented on Figure 2.

Closure Solutions conducted a Sensitive Receptor Survey to identify all water supply wells and sensitive receptors within a 2,000-foot radius of the Site. The closest water supply wells are two industrial wells approximately 450 feet northwest (cross-gradient) of the Site. The closest domestic well is approximately 1,500 feet southeast (cross-gradient) of the Site. The closest

down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No surface water bodies were identified within a 2,000 foot radius of the Site. Results of the Sensitive Receptor Survey are presented in the *Sensitive Receptor Survey* report dated August 27, 2008.

Closure Solutions prepared and submitted a *Site Conceptual Model* (SCM) dated September 30, 2008 for the Site. The preparation of the SCM was requested by Alameda County Environmental Health (ACEH) in their letter dated September 2, 2008.

In an email dated June 12, 2009, Mr. Steve Plunkett with the ACEH approved the reduction of groundwater monitoring to a Semi-annual basis conducted in second and fourth quarters. Mr. Plunkett also approved the recommendation to eliminate the fuel oxygenates from the suite of laboratory analytes.

On October 15, 2009, Closure Solutions discussed the Site status with ACEH. Data gaps presented in the SCM and other information that ACEH would require for site closure werre identified. Closure Solutions submitted the *Soil Vapor Probe and Additional Assessment Work Plan* on November 13, 2009 to address the work necessary to move the Site toward closure.

On May 14, 2010, Closure Solutions submitted a letter to the ACEH stating that Closure Solutions intended to proceed with the proposed scope of work pursuant to CCR Title 23, Division 3, Chapter 16, Section 2722 (e) which states "Implementation of the proposed workplan may begin sixty (60) calendar days after submittal, unless the responsible party is otherwise directed in writing by the regulatory agency". On May 21, 2010, the ACEH responded to Closure Solutions' letter of intent via email explaining that the ACEH has been largely precluded from generating letters on cases due to the work load imposed by SWRCB Resolution 2009-0042 and they will attempt to raise the review interval for the Site.

On July 26, 2010, a representative from Closure Solutions was on site to oversee the installation and sampling of three temporary soil vapor probes (SV-1 through SV-3) and advancement of one down-gradient soil boring (SB-18). A *Soil Vapor Testing and Additional Assessment Report* describing field activities and discussing analytical soil and soil vapor results was submitted to the ACEH on August 30, 2010.

On January 24, 2012, Closure Solutions supervised the advancement of two soil borings, collection of additional soil and groundwater data, and installation of wells MW-5 and MW-6. The work was completed in order undertake further corrective actions at the site. Collected soil and groundwater samples were analyzed for gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). Additionally, bio-attenuation parameters were

analyzed for groundwater collected from well MW-5. A discussion of analytical results is presented in the *Groundwater Monitoring Well Installation Report* submitted on March 30, 2012

After completing the monitoring well installation a dual-phase extraction (DPE) pilot test was performed from February 21 through 25, 2012. The pilot test was conducted to evaluate whether DPE would be a viable technology to remediate soil and groundwater beneath the Site. High groundwater extraction rates were encountered during pilot testing conducted from MW-1. As a result subsurface soils could not be effectively dewatered to allow remediation via vapor extraction. Pilot testing from well MW-6, produced average groundwater extraction rates that were roughly two-thirds less than those observed during testing from MW-1. Subsequently, the technology was successful in lowering the groundwater table in the vicinity of well MW-6 and exposing the capillary fringe or "smear" zone. Based on the results of testing performed from MW-6, DPE appears to be a viable option for Site remediation.

On October 9, 2012 the well boxes for monitoring wells MW-1, MW-2, MW-5 and MW-6 were adjusted as part of repaving activities conducted in the alley between the site building and adjacent building. Boxes MW-1, MW-2, and MW-6 were elevated an average of 1.5 inches to assure the boxes were above the new grade elevations. Well box MW-5 had to lowered approximately 3 inches. Because of the elevation drop, the well casing had to be cut down 3 inches as well in order for it to fit inside the repositioned well box. The top-of-casing was re-surveyed on October 11, 2012 to assure future measured groundwater elevations are consistent with historical data.

Closure Solutions continues to conduct groundwater monitoring and sampling on a semi-annual basis during second and fourth quarters.

2.0 WORK PERFORMED AND WORK PROPOSED

Following is a summary of work performed this quarter and work proposed for next quarter:

WORK PERFORMED THIS QUARTER:

1. Conducted well box repositioning on October 9, 2012.
2. Re-surveyed top-of-casing for well MW-5 on October 11, 2012.
3. Performed semi-annual groundwater monitoring event on November 8, 2012.

WORK PROPOSED FOR NEXT QUARTER:

1. The next groundwater monitoring event will be performed in second quarter 2013.

3.0 DISCUSSION OF RECENT ACTIVITIES

Closure Solutions performed this quarter's groundwater monitoring and sampling event at the Site on November 8, 2012. Gauging, purging and sampling were conducted in accordance with Closure Solution's Standard Operating Procedures (included in Attachment A). The collected groundwater samples were submitted to SunStar Laboratories for laboratory analysis under Chain-of-Custody protocols. The samples were analyzed for gasoline range organics (GRO) and benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8260B. Additionally, samples MW-1, MW-2 and MW-5 were analyzed for the following bio-attenuation parameters: ferrous iron by EPA Method 6010, total alkalinity by EPA Method 310.1, and sulfate and nitrate by EPA Method 300.0.

Following is a summary of the current status of the environmental program at the site:

Current Phase of Project:	Monitoring
Groundwater Monitoring & Sampling:	Semi-Annual: MW-1 through MW-6
Is Free Product (FP) Present On-Site:	No
Current Remediation Techniques:	Natural Attenuation

Following is a summary of this quarter's field and analytical data:

Average Depth to Groundwater (in feet bgs):	15.55
Groundwater Elevation (in feet above mean sea level)	21.34 (MW-5) to 21.98 (MW-6)
Groundwater Gradient (direction):	Southwest
Groundwater Gradient (magnitude):	0.004 feet per foot
GRO detected concentration range:	630µg/L (MW-1) to 9,700 µg/L (MW-6)
Benzene detected concentration range:	2.8 µg/L (MW-1) to 210 µg/L (MW-6)
Toluene detected concentrations:	1.4 µg/L (MW-1) and 270 µg/L (MW-6)
Ethylbenzene detected concentration range:	30 µg/L (MW-2) to 2,800 µg/L (MW-6)
Xylenes detected concentration range:	14.4 µg/L (MW-2) to 3,320 µg/L (MW-6)

Laboratory procedures, chain of custody records, and the certified analytical reports are included as Attachment B. Groundwater elevation and analytical data are summarized in Tables 1 and 2. Bio-attenuation parameters are summarized in Table 3.

Purge water generated during the monitoring and sampling event was stored onsite pending characterization and disposal.

4.0 DISCUSSION OF BIO-PARAMETER ANALYSISS

As part of the *Additional Investigation and Remediation Pilot Test Work Plan* submitted on July 22, 2011, Closure Solutions collected bio-attenuation parameters from wells MW-1, MW-2 MW-3, and MW-5. The wells were selected to compare parameter changes and evaluate if microbial activity is occurring and if enhancing it would assist in remediating the contaminant plume.

On December 15, 2011 and November 8, 2012, Closure Solutions measured dissolved concentrations of various electron acceptors in groundwater (oxygen, nitrate, and sulfate) and metabolic byproducts (ferrous iron and alkalinity) in monitoring wells MW-1, MW-2 MW-3, and MW-5. Well MW-1 is considered to be located up-gradient of the plume, well MW-2 is located inside the limits of the source area and MW-3 and MW-5 are located down-gradient of the hydrocarbon plume. Based on the data collected, Closure Solutions prepared the following analysis to demonstrate the character of ongoing biological activity in groundwater at the Site. Results of the sampling are tabulated and presented graphically relative to GRO concentrations in Figures A through E in Attachment C. Bioparameter laboratory analytical data is presented in Table 3.

It is widely understood that microbial populations present in groundwater systems have the ability to degrade petroleum hydrocarbons over time (biodegradation). Microbial metabolism is based on cycling electrons from electron donors, such as petroleum hydrocarbons, to electron acceptors, such as oxygen, nitrate, and ferric iron. Identifying the availability of electron acceptors or measuring the distribution of final products of metabolizing these electron acceptors can give insight into the progress and character of biodegradation within the petroleum plume[1].

Dissolved Oxygen (DO): DO concentrations are reduced when oxygen is used as an electron acceptor during the initial phase of biodegradation. DO concentrations at the up-gradient of and within the source area were less than in groundwater at MW-3 and MW-5, suggesting that oxygen is being utilized for microbial metabolism at a higher rate where more petroleum contaminants are present.

Nitrate: After DO has been depleted by biodegradation, nitrate may be used as an electron acceptor for anaerobic biodegradation. In this dendrification process, nitrate is reduced to nitrite. Lower nitrate concentrations in the source area suggest that available nitrate is being processed by microorganisms and anaerobic biodegradation is occurring.

[1] Chapelle, F.H, Landmeyer, J.E., Bradley, P.M. 2000. Identifying the Distribution of Terminal Electron-accepting Processes (TEAPS) in Ground-water Systems. In *Workshop on Monitoring Oxidation-Reduction Processes for Ground-water Restoration*, U.S. Environmental Protection Agency, eds. R. Wilkin, R. Ludwig, R. Ford

Sulfate: After DO and nitrate have been depleted, sulfate may be used as an electron acceptor for anaerobic biodegradation. Sulfate concentrations up-gradient of the plume and within the source area are slightly lower than in wells MW-3 and MW-5, suggesting that anaerobic biodegradation of hydrocarbons may be occurring. However, sulfate concentrations reported in the plume core for November 2012 are higher than that reported in December 2011, suggesting DO and nitrate may not be depleted far enough for Sulfate to take over as the successive electron acceptor.

Ferrous Iron: Ferric iron may be used as an electron acceptor during anaerobic biodegradation of petroleum hydrocarbons. In this process, ferric iron is reduced to ferrous iron (which is water soluble and can be measured in groundwater samples). Higher ferrous iron concentrations in wells MW-1 and MW-2 in comparison to MW-3 and MW-5 indicate that ferric iron is being reduced to ferrous iron inside the hydrocarbon plume and anaerobic biodegradation is taking place.

Alkalinity: Measured alkalinity is typically due to dissolved carbonate and bicarbonate. A zone of increased alkalinity indicates biodegradation is either producing organic acids, which lower pH and solubilize carbonate from the soil, or producing CO_2. No discernable trend is obvious from the alkalinity results.

Concentrations of DO, nitrate and sulfate were relatively lower in MW-1 and MW-2 located up-gradient and inside the source area than in wells MW-3 and MW-5 located down-gradient of the source area. Conversely, ferrous iron concentrations are higher inside the source area than outside suggesting ferric iron is being used as an electron acceptor. Although the alkalinity data is inconclusive, concentrations of DO, nitrate, sulfate and ferrous iron demonstrate that anaerobic biological degradation is occurring within the plume and aerobic biodegradation is likely occurring at the plume fringes.

5.0 CONCLUSIONS AND RECOMMENDATIONS

As noted in previous reports, periods of high groundwater elevation appear to be loading dissolved petroleum hydrocarbons to groundwater. Approximately six months following a period of high groundwater elevation, concentrations down-gradient (MW-2) undergo an increase; however the concentrations attenuate by an order of magnitude. Concentrations in recently installed well MW-5, located down-gradient from well MW-2, remain below laboratory reporting limits indicating dissolved hydrocarbons concentrations continue to attenuate before MW-5 and do not extend off-site.

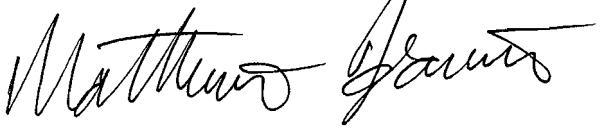
An evaluation of bio-attenuation parameter data indicates anaerobic biological degradation is occurring within the plume and aerobic biodegradation is likely occurring at the plume fringes. Although bio-attenuation does appear to be occurring it is unlikely that enhancing microbial activity will have a significant impact on reducing hydrocarbon concentrations within the plume. Given the success of the DPE pilot test conducted in February 2012, Closure Solutions continues to recommend implementing a DPE operation at the Site using a temporary system.

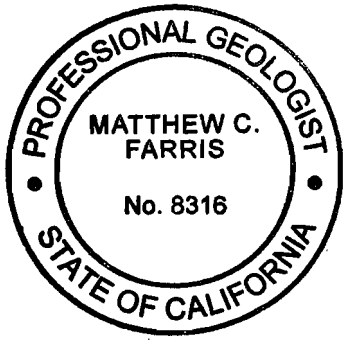
Closure Solutions will continue the Site groundwater monitoring and sampling on a semi-annual basis during the second and fourth quarters.

We appreciate the opportunity to present this document and trust that it meets with your approval. If you have any questions or concerns, please contact the undersigned at (916) 760-7579 or at mfarris@closuresolutions.com.

Sincerely,

Closure Solutions, Inc.



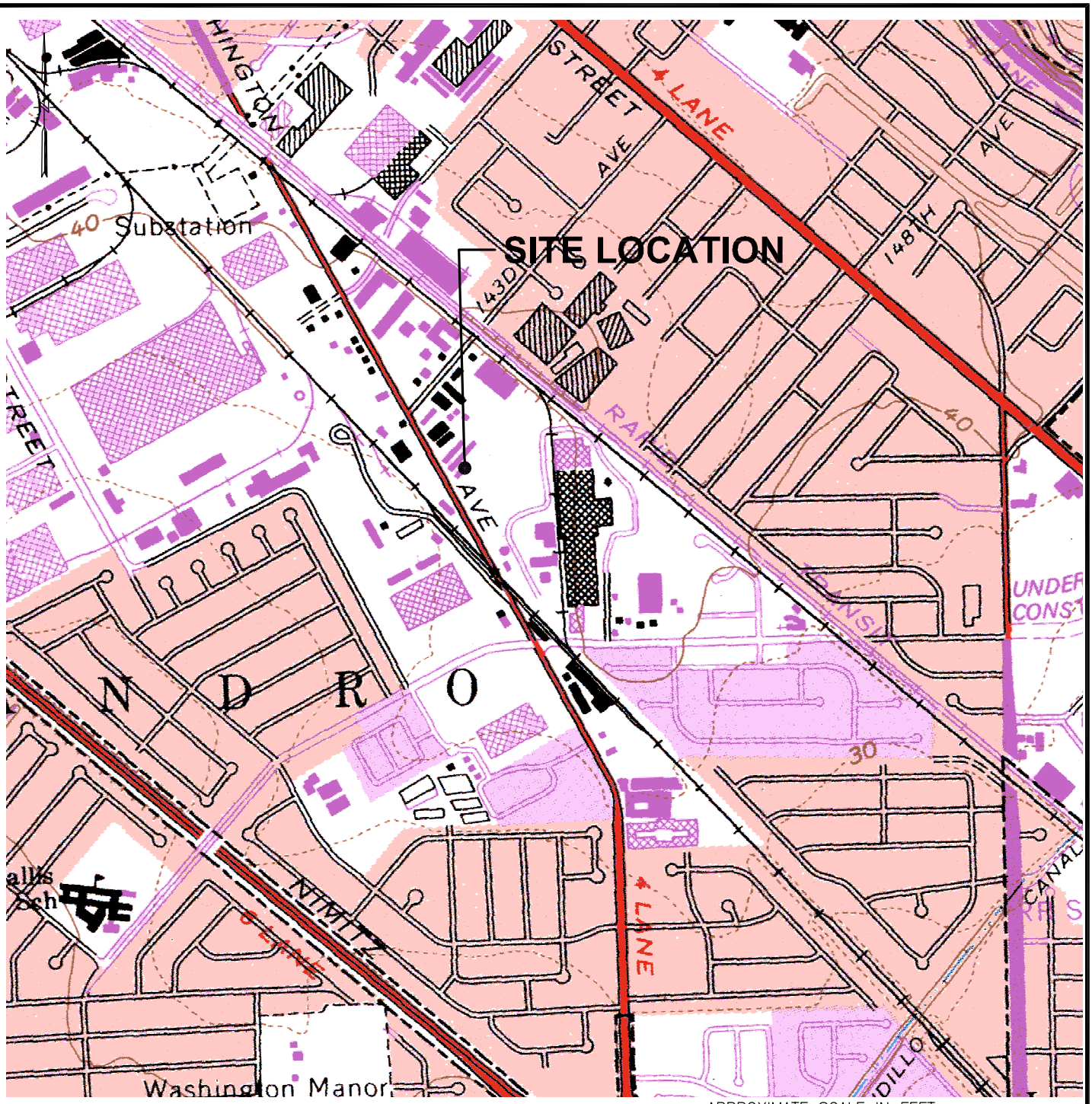


Matthew Farris, P.G.
Project Geologist

ATTACHMENTS:

Figure 1	Site Location Map
Figure 2	Fourth Quarter 2012 Groundwater Monitoring & Sampling Results – Groundwater Contour Map – November 8, 2012
Table 1	Groundwater Elevation and Analytical Data
Table 2	Fuel Oxygenate & Lead Scavenger Analytical Data
Table 3	Bio-Attenuation Parameters
Attachment A	Field Procedures and Field Data Sheets
Attachment B	Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
Attachment C	Bio-attenuation Graphs

cc: Mr. Jeff Kerry, Kerry & Associates
Mr. Gerald Donnelly



REFERENCE:
USGS 7.5 MIN QUAD MAP TITLED:SAN LEANDRO, CALIFORNIA DATED: 1959 REV: 1980

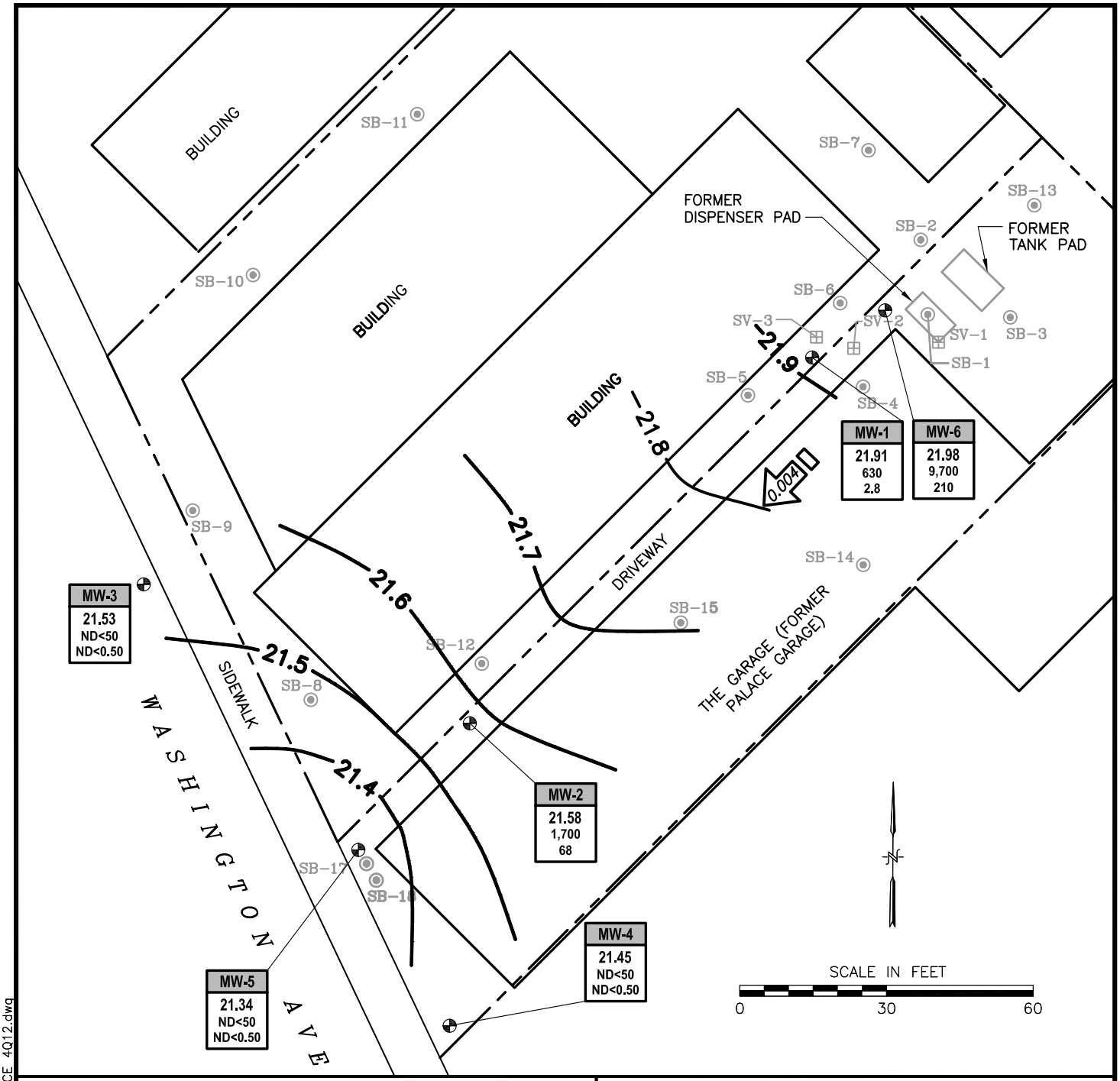
FIGURE 1

SITE LOCATION MAP

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

20101130.14161396 D:\Client Drawings\Closure\palace garage\PALACE GARAGE VICINITY MAP.dwg



LEGEND:

- GROUNDWATER MONITORING WELL LOCATION
- SOIL VAPOR PROBE
- SOIL BORING LOCATION LOCATION
- PROPERTY LINE
- WELL DESIGNATION (WELL / ELEV / GRO / BENZENE)
- GROUNDWATER ELEVATION (FT ABOVE MSL)
- GRO and BENZENE CONCENTRATIONS (µg/L)
- GROUNDWATER ELEVATION CONTOURS (FEET ABOVE MEAN SEA LEVEL– NAVD 88)
- GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

NOTES:

1. BASEMAP SOURCE: MORROW SURVEYING, 2/05/03

FIGURE 2

FOURTH QUARTER 2012 GROUNDWATER MONITORING & SAMPLING RESULTS

GROUNDWATER CONTOUR MAP NOVEMBER 8, 2012

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

Table 1
Groundwater Elevation and Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-1	12/31/2002	37.59	13.62	23.97	48,000	1,030	2,380	1,690	9,220
	9/22/2006		13.33	24.26	44,000	870	2,200	720	9,700
	12/21/2006		13.94	23.65	17,000	240	980	180	5,000
	3/29/2007		13.71	23.88	2,000	30	85	23	550
	9/27/2007		15.53	22.06	540	14	3.9	44	87
	12/20/2007		15.69	21.90	280	4.3	1.3	15	37
	2/21/2008		13.72	23.87	19,000	300	150	1,100	4,900
	5/15/2008		14.60	22.99	7,200	140	50	370	2,040
	8/7/2008		15.62	21.97	820	13	3.1	44	100
	11/13/2008		16.14	21.45	670	10	2.1	31	110
	6/19/2009		15.15	22.44	1,490	85.8	13.4	164	310
	11/3/2009		15.98	21.61	75	6.0	0.70	12	40.5
	5/4/2010		13.40	24.19	18,000	300	61	880	4,070
	11/8/2010		15.83	21.76	170	4.9	ND<0.50	7.7	24
	4/22/2011		12.34	25.25	3,800	250	48	810	3,260
	12/15/2011		14.77	22.82	1,500	21	0.88	29	4.6
	5/9/2012		13.56	24.03	20,000	190	27	810	3,150
	11/8/2012		**15.68**	**21.91**	**630**	**2.8**	**1.4**	**30**	**51.9**

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Groundwater Elevation and Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-2	12/31/2002	37.12	13.38	23.74	1,670	1,030	11.00	23	16.4
	9/22/2006		13.25	23.87	1,800	53	1.40	14	7.5
	12/21/2006		13.89	23.23	--	--	--		--
	3/29/2007		13.57	23.55	2,100	51	1.30	--	4.5
	9/27/2007		15.37	21.75	1,600	58	0.99	12	3.7
	12/20/2007		15.40	21.72	1,500	63	1.1	16	4.9
	2/21/2008		13.60	23.52	710	23	ND<0.50	6.2	1.1
	5/15/2008		14.47	22.65	1,600	84	1.4	28	9.8
	8/7/2008		15.48	21.64	2,100	86	1.6	22	9.0
	11/13/2008		15.99	21.13	2,300	46	1.1	15	4.5
	6/19/2009		15.03	22.09	931	60.1	ND<2.0	30	3.1
	11/3/2009		15.87	21.25	220	22	0.55	9.4	5.05
	5/4/2010		12.92	24.20	950	14	0.57	9.1	13.2
	11/8/2010		15.71	21.41	1,900	45	1.6	44	9.28
	4/22/2011		12.27	24.85	1,400	30	1.2	29	5.78
	12/15/2011		14.86	22.26	4,300	160	26	480	790
	5/9/2012		13.44	23.68	4,300	21	0.65	23	7.77
	11/8/2012		**15.54**	**21.58**	**1,700**	**68**	**2.6**	**63**	**14.4**

Table 1
Groundwater Elevation and Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-3	12/31/2002	37.01	13.29	23.72	<50	<0.5	<0.5	<0.5	<1.0
	9/22/2006		13.14	23.87	<50	<0.5	<0.5	<0.5	<1.5
	12/21/2006		--	--	--	--	--	--	--
	3/29/2007		13.47	23.54	<50	<0.5	<0.5	<0.5	<1.5
	9/27/2007		15.29	21.72	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/20/2007		15.30	21.71	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008		---	---	---	---	---	---	---
	5/15/2008		14.35	22.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	8/7/2008		15.39	21.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	11/13/2008		15.90	21.11	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	6/19/2009		14.94	22.07	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0
	11/3/2009		15.76	21.25	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/4/2010		13.20	23.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	11/8/2010		15.62	21.39	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	4/22/2011		12.17	24.84	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	12/15/2011		14.63	22.38	150	1.5	ND<0.50	3.0	12.2
	5/9/2012		13.36	23.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	11/8/2012		**15.48**	**21.53**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<1.5**

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MW-4	12/31/2002	37.09	13.45	23.64	<50	<0.5	<0.5	<0.5	<1.0
	9/22/2006		13.40	23.69	<50	<0.5	<0.5	<0.5	<1.5
	12/21/2006		13.86	23.23	<50	<0.5	<0.5	<0.5	<1.5
	3/29/2007		13.69	23.40	<50	<0.5	<0.5	<0.5	<1.5
	9/27/2007		15.48	21.61	ND<50	1.5	ND<0.50	0.71	0.74
	12/20/2007		15.28	21.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008		13.56	23.53	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/15/2008		14.58	22.51	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	8/7/2008		15.57	21.52	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	11/13/2008		16.09	21.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	6/19/2009		15.15	21.94	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0
	11/3/2009		16.03	21.06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/4/2010		13.11	23.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	11/8/2010		15.89	21.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	4/22/2011		12.40	24.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	12/15/2011		15.03	22.06	86	ND<0.50	ND<0.50	ND<0.50	1.3
	5/9/2012		13.51	23.58	ND<50	ND<0.50	0.84	ND<0.50	ND<1.5
	11/8/2012		**15.64**	**21.45**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<1.5**

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Palace Garage
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Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-5	2/2/2012	37.27	15.06	22.21	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50
	5/9/2012		13.68	23.59	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50
	resurvey 10/11/12	36.96							
	11/8/2012		**15.62**	**21.34**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<1.50**
MW-6	2/2/2012	37.34	14.63	22.71	17,000	340	57	1,900	2,100
	5/9/2012		13.26	24.08	34,000	170	310	1,700	3,920
	11/8/2012		**15.36**	**21.98**	**9,700**	**210**	**270**	**2,800**	**3,320**

Table 1
Groundwater Elevation and Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)

ABBREVIATIONS:

TPHg/ GRO	total petroleum hydrocarbons as gasoline. Gasoline range organics
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
µg/L	Micrograms per liter (parts per billion [ppb])
---	Not analyzed/measured/applicable
ND<	Not detected at or above specified laboratory reporting limit
Bold	Current sampling event
MSL	mean sea level

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

Table 2
Fuel Oxygenate & Lead Scavenger Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1	12/31/2002	<0.5	--	--	--	--	--	--
	9/22/2006	<1.0	--	--	--	--	--	--
	12/21/2006	3.9	--	--	--	--	--	--
	3/29/2007	<1.0	--	--	--	--	--	--
	9/27/2007	1.6	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/21/2007	1.5	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008	ND<7.0	ND<40	ND<7.0	ND<7.0	ND<7.0	ND<7.0	ND<7.0
	5/15/2008	ND<2.5	ND<15	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5
	8/7/2008	1.0	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--
	11/13/2008	1.1	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--
MW-2	12/31/2002	<0.5	--	--	--	--	--	--
	9/22/2006	<1.0	--	--	--	--	--	--
	12/21/2006	--	--	--	--	--	--	--
	3/29/2007	1.10	--	--	--	--	--	--
	9/27/2007	0.89	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/20/2007	0.95	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	5/15/2008	ND<0.90	ND<5.0	ND<0.90	ND<0.90	ND<0.90	ND<0.90	ND<0.90
	8/7/2008	0.59	ND<5.0	ND<0.90	ND<0.90	ND<0.90	--	--
	11/13/2008	0.53	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--

Table 2
Fuel Oxygenate & Lead Scavenger Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-3	12/31/2002	<0.5	--	--	--	--	--	--
	9/22/2006	<1.0	--	--	--	--	--	--
	12/21/2006	--	--	--	--	--	--	--
	3/29/2007	<1.0	--	--	--	--	--	--
	9/27/2007	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/20/2007	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008	--	--	--	--	--	--	--
	5/15/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	8/7/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--
	11/13/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--
MW-4	12/31/2002	<0.5	--	--	--	--	--	--
	9/22/2006	<1.0	--	--	--	--	--	--
	12/21/2006	<1.0	--	--	--	--	--	--
	3/29/2007	<1.0	--	--	--	--	--	--
	9/27/2007	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/20/2007	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	5/15/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	8/7/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--
	11/13/2008	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	--	--

Table 2
Fuel Oxygenate & Lead Scavenger Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)

ABBREVIATIONS:

MTBE	Methyl Tertiary Butyl Ether
TBA	Tertiary Butyl Alcohol
DIPE	Diisopropyl Ether
ETBE	Ethyl Tertiary Butyl ether
TAME	Tertiary Amyl Methyl Ether
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
µg/L	Micrograms per liter (parts per billion [ppb])
---	Not analyzed/measured/applicable
ND<	Not detected at or above specified laboratory reporting limit

LIMITATIONS

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

Attachment A

Field Procedures and Field Data Sheets

FIELD DATA SHEET-DEPTH TO WATER DATA

SITE INFORMATION

Site Information

Project Name	Date	Project Number
Palace Garage	11/8/12	

Address	City	State
14336 Washington Ave.	San Leandro	CA

Water Level Equipment — Kevin Dolan

[x] Electronic Indicator

[ ] Oil Water Interface Probe

[ ] Other (specify) ___

Event: 4Q 2012 QMS

DEPTH TO WATER DATA

DTW Order	Well ID	Time (24:00)	DTW (toc)	Total Depth (toc)	Depth to SPH / Thickness	Notes:
o 5	MW-1	1056	15.68	23.25	—	
o 4	MW-2	1053	15.54	23.64	—	
2	MW-3	1046	15.48	23.06	—	
1	MW-4	1042	15.64	21.85	—	3/4" well
o 3	MW-5	1050	15.62	17.60	—	
6	MW-6	1100	15.36	19.60	—	
						(1) 1/4 Full drum onsite
						o = Sample For BIO parameters

Closure Solutions INC.

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** *November 8, 2012*

Sample No.: MW-1

Samplers Name: *Kevin Dolan*

Purge Equipment:

_____ Bailer: Disposable or Acrylic
__X__ 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

Sample Equipment:

__X__ Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

Analyses Requested (circle all that apply): **Number and Types of Bottle Used:**

TPH-G / BTEX (nitrate, sulfate, ferrous iron,	
and alkalinity in 2" wells)	

Well Number: MW-1

Depth to Water: 15.68 TOC

Well Depth: 23.25 BGS or TOC

Height W-Column: 7.57 feet (well depth - depth to water)

Volume in Well: 1.21 gallons (casing volume X height)

Gallons to purge: 3.63 gallons (volume X 3)

Well Diameter: 2" **with Casing Volume of:**

2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
3/4" = (.0625 G/Ft)

Lab: *SunStar*

Transportation:

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	TDS (ppm)	Turbidity: Color - Fines	Micropurge Parameters Stabilized
1245	Start					ORP		
1247	1.5	14.29	1.07	3.29	6.67	-110	435. Hazy Brown, mod	
1249	3	14.27	1.08	1.84	6.53	-91	493: ↓ ↓	
1251	4.50	14.27	1.08	1.26	6.50	-83	Sol: ↓ ↓	
Stop.	Purge	Complete						
		15						

Wait for 80% well volume recovery prior to sampling.

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 7.57 x 0.8 = 6.06 - (Well Depth) 23.25 = Depth to water 17.19

Time: 1300 1st measured depth to water, 15.73 feet below TOC. Is well within 80% of original well casing volume: Yes X No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1301 Sample ID: MW-1 Depth: 15.73

Comments: * Slight Odor - no Sheen

Well Condition: Good

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** November 8, 2012

Sample No.: MW-2

Samplers Name: Kevin Dolan

Purge Equipment:

_____ Bailer: Disposable or Acrylic
X 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

Sample Equipment:

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

Analyses Requested (circle all that apply):

TPH-G / BTEX (nitrate, sulfate, ferrous iron, and alkalinity in 2" wells)	

Number and Types of Bottle Used:

Well Number: MW-2
Depth to Water: 15.54 TOC
Well Depth: 23.64 BGS or TOC
Height W-Column: 8.10 feet (well depth - depth to water)
Volume in Well: 1.29 gallons (casing volume X height)
Gallons to purge: 3.88 gallons (volume X 3)

Well Diameter: 2" with Casing Volume of:
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
3/4" = (.0625 G/Ft)

Lab: SunStar **Transportation:**

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	~~TDS (ppm)~~ ORP mV	Turbidity: Color - Fines	Micropurge Parameters Stabilized
1221	Start							
1223	1.5	14.85	1.16	3.40	5.92	110	800: Hvy Brown, many	
1225	3	14.84	1.14	3.71	6.67	-57	540: ↓ ↓	
1227	4.5	14.78	1.13	1.98	6.78	-110	499: Clear	
Stop.	Purge	Complete						
		KD						

Wait for 80% well volume recovery prior to sampling.

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 8.10 x 0.8 = 6.48 - (Well Depth) 23.64 = Depth to water 17.16

Time: 1237 1st measured depth to water, _____ feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.

Is well within 80% of original well casing volume: Yes X No ____
Is well within 80% of original well casing volume: Yes ____ No ____
Is well within 80% of original well casing volume: Yes ____ No ____

Sample Well

Time: 1238 Sample ID: MW-2 Depth: _____

Comments: No odor - No sheen

Well Condition: Good

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** November 8, 2012

Sample No.: MW-3

Samplers Name: Kevin Dolan

Purge Equipment:

- ____ Bailer: Disposable or Acrylic
- X 12 v. Pump -
- ____ Bladder Pump
- ____ SS Monsoon #

Sample Equipment:

- X Disposable Bailer
- ____ Whaler # ____
- ____ Bladder Pump
- ____ Submersible Pump

Analyses Requested (circle all that apply):

TPH-G / BTEX (nitrate, sulfate, ferrous iron, and alkalinity in 2" wells)	**Number and Types of Bottle Used:**

Well Number: MW-3

Depth to Water: 15.48 TOC

Well Depth: 23.06 BGS or TOC

Height W-Column: 7.58 feet (well depth - depth to water)

Volume in Well: 1.21 gallons (casing volume X height)

Gallons to purge: 3.63 gallons (volume X 3)

Well Diameter: 2" with Casing Volume of:

- 2" = (0.16 Gallon/Feet)
- 4" = (0.65 Gallon/Feet)
- 5" = (1.02 Gallon/Feet)
- 6" = (1.47 Gallon/Feet)
- 3/4" = (.0625 G/Ft)

Lab: SunStar

Transportation:

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	~~ORP~~ ~~TDS~~ (ppm)	Turbidity: Color - Fines	Micropurge Parameters Stabilized
1123	START			3.63		ORP MV		
1125	1.5	17.52	0.698	3.1	5.48	201	High: Brown, many	
1127	3	16.81	0.761	3.03	5.46	196	High: Brown, many	
1129	4.5	16.52	0.766	2.96	5.45	188	Medium: HAZY Brown, mod.	
FINISH								

Wait for 80% well volume recovery prior to sampling.

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 7.58 x 0.8 = 6.06 - (Well Depth) 23.06 = Depth to water 17.00

Time: 1138 1st measured depth to water, 15.56 feet below TOC. Is well within 80% of original well casing volume: Yes X No____

Time: ____ 1st measured depth to water, ____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Time: ____ 1st measured depth to water, ____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1138 Sample ID: MW-3 Depth: 15.56

Comments: NO odor - NO Sheen

Well Condition: Good

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** November 8, 2012

Sample No.: MW-4

Samplers Name: Kevin Dolan

Purge Equipment:

_____ Bailer: Disposable or Acrylic
_____ 12 v. Pump - ✓ Foot valve
_____ Bladder Pump
_____ SS Monsoon #

Sample Equipment:

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

Analyses Requested (circle all that apply):

TPH-G / BTEX (nitrate, sulfate, ferrous iron, and alkalinity in 2" wells)	**Number and Types of Bottle Used:** 3 VOAs w/ HCl

Well Number: MW-4
Depth to Water: 15.64 TOC
Well Depth: 21.85 BGS or TOC
Height W-Column: 6.21 feet (well depth - depth to water)
Volume in Well: 0.38 gallons (casing volume X height)
Gallons to purge: 1.16 gallons (volume X 3)
Lab: *SunStar*

Well Diameter: 3/4" **with Casing Volume of:**
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
(3/4" = (.0625 G/Ft)

Transportation:

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	TDS (ppm)	Turbidity: Color - Fines	Micropurge Paramaters Stabilized
1058	Start					ORP		
1101	0.40	21.9	0.798	4.11	7.51	189	N/A : Brown, mod	
1103	0.80	21.6	0.753	3.73	7.46	180	↓ : Brown, mod	
1105	1.20	21.5	0.751	3.12	7.43	176	↓ : clear, min	
Stop:	Purge	Complete						

Wait for 80% well volume recovery prior to sampling.
Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 6.21 x 0.8 = 4.97 - (Well Depth) 21.85 = Depth to water 16.88

Time: 1114 1st measured depth to water, 16.12 feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.

Is well within 80% of original well casing volume: Yes X No____
Is well within 80% of original well casing volume: Yes ____ No____
Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1114 Sample ID: MW-4 Depth: 16.12

Comments: No odor - No sheen

Well Condition: Good

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** November 8, 2012

Sample No.: MW-5

Samplers Name: Kevin Dolan

Purge Equipment:

- X Bailer: Disposable or Acrylic
- ____ 12 v. Pump -
- ____ Bladder Pump
- ____ SS Monsoon #

Sample Equipment:

- X Disposable Bailer
- ____ Whaler # ____
- ____ Bladder Pump
- ____ Submersible Pump

Analyses Requested (circle all that apply):	Number and Types of Bottle Used:
TPH-G / BTEX (nitrate, sulfate, ferrous iron, and alkalinity in 2" wells) *	3 VOAs w/ HCl 1 500 ml Plastic (un)

Well Number: MW-5

Depth to Water: 15.62 TOC

Well Depth: 17.60 BGS or TOC

Height W-Column: 1.98 feet (well depth - depth to water)

Volume in Well: 0.31 gallons (casing volume X height)

Gallons to purge: 0.95 gallons (volume X 3)

Well Diameter: 2" with Casing Volume of:

- 2" = (0.16 Gallon/Feet)
- 4" = (0.65 Gallon/Feet)
- 5" = (1.02 Gallon/Feet)
- 6" = (1.47 Gallon/Feet)
- 3/4" = (.0625 G/Ft)

Lab: SunStar **Transportation:**

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	~~TDS~~ (ppm)	Turbidity: Color - Fines	Micropurge Parameters Stabilized
1155	Start					ORP MV		
1157	1.50	15.81	0.838	5.20	5.48	188	793; clear, min	
1159	1.00	15.58	0.833	4.41	5.50	186	712; ↓	
1201	1.50	15.48	0.833	4.12	5.50	184	693; ↓ ↓	
Stop;	Purge	complete						
	V.O.							

Wait for 80% well volume recovery prior to sampling.

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 1.98 x 0.8 = 1.58 - (Well Depth) 17.60 = Depth to water 16.01

Time: 1210 1st measured depth to water, 15.64 feet below TOC.
Time: ____ 1st measured depth to water, ____ feet below TOC.
Time: ____ 1st measured depth to water, ____ feet below TOC.

Is well within 80% of original well casing volume: Yes ____ No ____
Is well within 80% of original well casing volume: Yes ____ No ____
Is well within 80% of original well casing volume: Yes ____ No ____

Sample Well

Time: 1210 Sample ID: MW-5 Depth: 15.64

Comments: No odor - no sheen

Well Condition: Good.

GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Project Name: Palace Garage **Date:** November 8, 2012

Sample No.: MW-6

Samplers Name: Kevin Dolan

Purge Equipment:

- X Bailer: Disposable or Acrylic
- ____ 12 v. Pump -
- ____ Bladder Pump
- ____ SS Monsoon #

Sample Equipment:

- X Disposable Bailer
- ____ Whaler # ____
- ____ Bladder Pump
- ____ Submersible Pump

Analyses Requested (circle all that apply):	Number and Types of Bottle Used:
TPH-G / BTEX (nitrate, sulfate, ferrous iron, and alkalinity in 2" wells)	3 VOAs

Well Number: MW-6

Depth to Water: 15.36 TOC

Well Depth: 19.60 BGS or TOC

Height W-Column: 4.24 feet (well depth - depth to water)

Volume in Well: 0.67 gallons (casing volume X height)

Gallons to purge: 2.01 gallons (volume X 3)

Well Diameter: 2" with Casing Volume of:

- 2" = (0.16 Gallon/Feet)
- 4" = (0.65 Gallon/Feet)
- 5" = (1.02 Gallon/Feet)
- 6" = (1.47 Gallon/Feet)
- 3/4" = (.0625 G/Ft)

Lab: SunStar **Transportation:**

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	TDS (ppm)	Turbidity: Color - Fines	Micropurge Parameters Stabilized
1309	Start					ORP		
1311	0.75	14.46	1.02	2.57	6.69	-141	986: Black, many	
1313	1.50	14.48	1.02	0.93	6.71	-159	976	
1315	2.25	14.49	1.02	0.20	6.73	-160	912	
Stop!	Purge	Complete						
		125						

Wait for 80% well volume recovery prior to sampling.

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 4.24 x 0.8 = 3.39 - (Well Depth) 19.60 = Depth to water 16.20

Time: 1326 1st measured depth to water, 15.48 feet below TOC. Is well within 80% of original well casing volume: Yes X No____

Time: ____ 1st measured depth to water, ____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Time: ____ 1st measured depth to water, ____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1325 Sample ID: MW-6 Depth: 15.48

Comments: Moderate HC odor - slight sheen

Well Condition: Good

Attachment B

Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

19 November 2012

Brian Busch
Closure Solutions
2300 Clayton Rd. Suite 1435
Concord, CA 94520

RE: Palace Garage

Enclosed are the results of analyses for samples received by the laboratory on 11/09/12 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Chavez
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	T122053-01	Water	11/08/12 13:01	11/09/12 09:30
MW-2	T122053-02	Water	11/08/12 12:38	11/09/12 09:30
MW-3	T122053-03	Water	11/08/12 11:38	11/09/12 09:30
MW-4	T122053-04	Water	11/08/12 11:14	11/09/12 09:30
MW-5	T122053-05	Water	11/08/12 12:10	11/09/12 09:30
MW-6	T122053-06	Water	11/08/12 13:28	11/09/12 09:30

SunStar Laboratories, Inc.

Daniel J Chávez

Daniel Chavez, Project Manager

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Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-1
T122053-01 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by SM 3500 Series Methods									
Ferrous Iron	**0.478**	0.100	mg/l	1	2111316	11/13/12	11/13/12	EPA6010/SM 3500	
Volatile Organic Compounds by EPA Method 8260B									
Benzene	**2.8**	0.50	ug/l	1	2110927	11/14/12	11/14/12	EPA 8260B	
Toluene	**1.4**	0.50	"	"	"	"	"	"	
Ethylbenzene	**30**	0.50	"	"	"	"	"	"	
m,p-Xylene	**42**	1.0	"	"	"	"	"	"	
o-Xylene	**9.9**	0.50	"	"	"	"	"	"	
C6-C12 (GRO)	**630**	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*121 %*	*88.8-117*		"	"	"	"	*S-GC*
Surrogate: 4-Bromofluorobenzene		*105 %*	*83.5-119*		"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*81.1-136*		"	"	"	"	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Total Alkalinity	**370**	20	mg/l	1	2110919	11/09/12	11/09/12	EPA 310.1	
Anions by EPA Method 300.0									
Sulfate as SO4	**61.1**	0.500	mg/l	1	2110912	11/09/12	11/09/12	EPA 300.0	
Nitrate as NO3	**43.4**	0.500	"	"	"	"	"	"	

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-2

T122053-02 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by SM 3500 Series Methods									
Ferrous Iron	ND	0.100	mg/l	1	2111316	11/13/12	11/13/12	EPA6010/SM 3500	
Volatile Organic Compounds by EPA Method 8260B									
Benzene	**68**	0.50	ug/l	1	2110927	11/14/12	11/14/12	EPA 8260B	
Toluene	**2.6**	0.50	"	"	"	"	"	"	
Ethylbenzene	**63**	0.50	"	"	"	"	"	"	
m,p-Xylene	**12**	1.0	"	"	"	"	"	"	
o-Xylene	**2.4**	0.50	"	"	"	"	"	"	
C6-C12 (GRO)	**1700**	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*125 %*		*88.8-117*	"	"	"	"	*S-GC*
Surrogate: 4-Bromofluorobenzene		*110 %*		*83.5-119*	"	"	"	"	
Surrogate: Dibromofluoromethane		*94.1 %*		*81.1-136*	"	"	"	"	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Total Alkalinity	**420**	20	mg/l	1	2110919	11/09/12	11/09/12	EPA 310.1	
Anions by EPA Method 300.0									
Sulfate as SO4	**38.0**	0.500	mg/l	1	2110912	11/09/12	11/09/12	EPA 300.0	
Nitrate as NO3	**28.5**	0.500	"	"	"	"	"	"	

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Daniel Chavez, Project Manager

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Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-3

T122053-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Benzene	ND	0.50	ug/l	1	2110927	11/14/12	11/14/12	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*117 %*		*88.8-117*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.4 %*		*83.5-119*	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*81.1-136*	"	"	"	"	

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

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Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-4

T122053-04 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.50	ug/l	1	2110927	11/14/12	11/15/12	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*116 %*	*88.8-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.6 %*	*83.5-119*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*81.1-136*		"	"	"	"	

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Daniel Chavez, Project Manager

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949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-5

T122053-05 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by SM 3500 Series Methods									
Ferrous Iron	ND	0.100	mg/l	1	2111316	11/13/12	11/13/12	EPA6010/SM 3500	
Volatile Organic Compounds by EPA Method 8260B									
Benzene	ND	0.50	ug/l	1	2110927	11/14/12	11/15/12	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*118 %*		*88.8-117*	"	"	"	"	*S-GC*
Surrogate: 4-Bromofluorobenzene		*96.5 %*		*83.5-119*	"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*		*81.1-136*	"	"	"	"	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Total Alkalinity	**250**	20	mg/l	1	2110919	11/09/12	11/09/12	EPA 310.1	
Anions by EPA Method 300.0									
Sulfate as SO4	**54.7**	0.500	mg/l	1	2110912	11/09/12	11/09/12	EPA 300.0	
Nitrate as NO3	**50.3**	0.500	"	"	"	"	"	"	

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Daniel Chavez, Project Manager

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Lake Forest, California 92630
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949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

MW-6

T122053-06 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**210**	25	ug/l	50	2110927	11/14/12	11/15/12	EPA 8260B	
Toluene	**270**	25	"	"	"	"	"	"	
Ethylbenzene	**2800**	25	"	"	"	"	"	"	
m,p-Xylene	**2800**	50	"	"	"	"	"	"	
o-Xylene	**520**	25	"	"	"	"	"	"	
C6-C12 (GRO)	**9700**	2500	"	"	"	"	"	"	
Surrogate: Toluene-d8		*93.4 %*	*88.8-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*83.5-119*		"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*	*81.1-136*		"	"	"	"	

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Daniel Chavez, Project Manager

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Lake Forest, California 92630
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Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

Metals by SM 3500 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2111316 - EPA 3010A										
Blank (2111316-BLK1)				Prepared & Analyzed: 11/13/12						
Ferrous Iron	ND	0.100	mg/l							
LCS (2111316-BS1)				Prepared & Analyzed: 11/13/12						
Ferrous Iron	0.444	0.100	mg/l	0.500		88.8	80-120			
Matrix Spike (2111316-MS1)		**Source: T122053-02**		Prepared & Analyzed: 11/13/12						
Ferrous Iron	0.427	0.100	mg/l	0.500	0.0832	68.8	75-125			QM-05
Matrix Spike Dup (2111316-MSD1)		**Source: T122053-02**		Prepared & Analyzed: 11/13/12						
Ferrous Iron	0.351	0.100	mg/l	0.500	0.0832	53.6	75-125	19.5	20	QM-05

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949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110927 - EPA 5030 GCMS										
Blank (2110927-BLK1)				Prepared & Analyzed: 11/14/12						
Benzene	ND	0.50	ug/l							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
m,p-Xylene	ND	1.0	"							
o-Xylene	ND	0.50	"							
C6-C12 (GRO)	ND	50	"							
Surrogate: Toluene-d8	*9.48*		*"*	*8.00*		*118*	*88.8-117*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*7.70*		*"*	*8.00*		*96.2*	*83.5-119*			
Surrogate: Dibromofluoromethane	*7.99*		*"*	*8.00*		*99.9*	*81.1-136*			

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Daniel J Chavez

Daniel Chavez, Project Manager

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Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110919 - General Preparation										
Duplicate (2110919-DUP1)		**Source: T122053-01**		Prepared & Analyzed: 11/09/12						
Total Alkalinity	375	20	mg/l		370			1.34	25	

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Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110912 - General Preparation										
Blank (2110912-BLK1)				Prepared & Analyzed: 11/09/12						
Sulfate as SO4	ND	0.500	mg/l							
Nitrate as NO3	ND	0.500	"							
LCS (2110912-BS1)				Prepared & Analyzed: 11/09/12						
Sulfate as SO4	11.5	0.500	mg/l	10.0		115	75-125			
Nitrate as NO3	0.487	0.500	"	0.500		97.4	75-125			
Matrix Spike (2110912-MS1)		**Source: T122053-01**		Prepared & Analyzed: 11/09/12						
Sulfate as SO4	73.1	0.500	mg/l	10.0	61.1	120	75-125			
Nitrate as NO3	43.5	0.500	"	0.500	43.4	24.2	75-125			QM-4X
Matrix Spike Dup (2110912-MSD1)		**Source: T122053-01**		Prepared & Analyzed: 11/09/12						
Sulfate as SO4	71.8	0.500	mg/l	10.0	61.1	107	75-125	1.74	20	
Nitrate as NO3	43.5	0.500	"	0.500	43.4	28.4	75-125	0.0483	20	QM-4X

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949.297.5020 Phone
949.297.5027 Fax

Closure Solutions	Project: Palace Garage	
2300 Clayton Rd. Suite 1435	Project Number: [none]	**Reported:**
Concord CA, 94520	Project Manager: Brian Busch	11/19/12 14:00

Notes and Definitions

S-GC	Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
QM-4X	The spike recovery was outside of QC acceptance 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.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
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

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Daniel Chavez, Project Manager

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

T122053

Client: CLOSURE SOLUTIONS
Address: 2300 Clayton Rd., St. 1435, Concord, CA
Phone: 925-566-8403 Fax:
Project Manager: BRIAN BUSCH

Date: 11/8/12 Page: 1 Of 1
Project Name: PALACE GARAGE
Collector: K. Dolan Client Project #:
Batch #: 48 2012 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 (TPHg/BTEX)	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	Nitrate, Sulfate	Ferrous Iron	Alkalinity		Laboratory ID #	Comments/Preservative	Total # of containers
MW-1	11/8/12	1301	GW	3 VOAs (HCl)	X									X	X	X		01	STD. TAT 2.0 days OM 11-9-12	4
MW-2		1235		w/ HCl										X	X	X		02		4
MW-3		1138																03		3
MW-4		1114																04		3
MW-5		1210		poly										X	X	X		05		4
MW-6		1300																06		3

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	11/8/12		11-8-12
G50	11/9/12 930		11/9/12 930

Total # of containers: 21
Chain of Custody seals Y/N/NA: Y
Seals intact? Y/N/NA: Y
Received good condition/cold: Y

Turn around time: STD

Notes
results to:
BBusch@closuresolutions.com
kdolan@ " "

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

COC 110474

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SAMPLE RECEIVING REVIEW SHEET

BATCH # T122053

Client Name: Closure Solutions Project: Palace Garage

Received by: Dan M Date/Time Received: 11/9/12 930

Delivered by : ☐ Client ☐ SunStar Courier ☒ GSO ☐ FedEx ☐ Other _____

Total number of coolers received 1 **Temp criteria = 6°C > 0°C (no frozen containers)**

Temperature: cooler #1 2.2 °C +/- the CF (- 0.2°C) = 2.0 °C corrected temperature

cooler #2 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.	☒Yes	☐No*	☐N/A
Custody Seals Intact on Cooler/Sample	☒Yes	☐No*	☐N/A
Sample Containers Intact	☒Yes	☐No*	
Sample labels match COC ID's	☒Yes	☐No*	
Total number of containers received match COC	☒Yes	☐No*	
Proper containers received for analyses requested on COC	☒Yes	☐No*	
Proper preservative indicated on COC/containers for analyses requested	☒Yes	☐No*	☐N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☒ **Yes** ☐ **No***

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date DM 11/9/12

Comments:

_____

_____

_____

_____

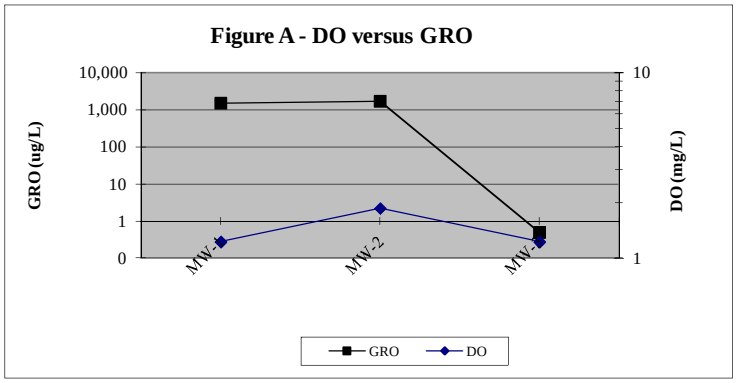
Attachment C

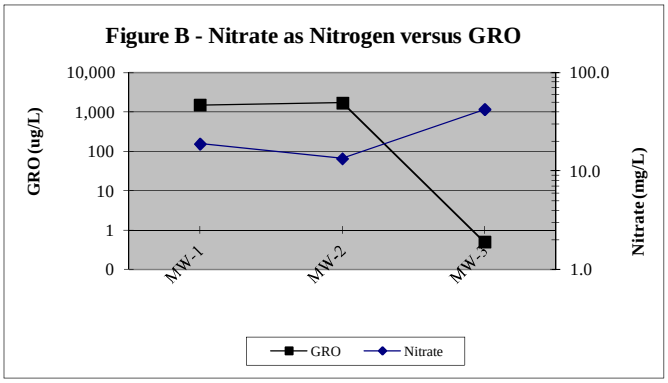
Bio-attenuation Graphs

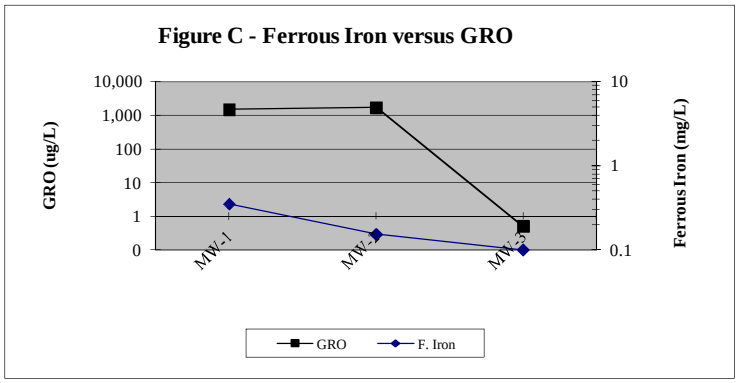
Palace Garage, 14336 Washington Avenue, San Leandro, CA
Bioparameter Data and Analysis

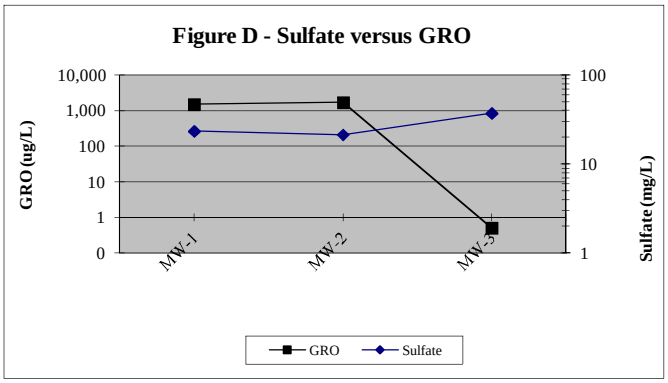
Well	GRO (ug/L)	DO (mg/L)	Alkalinity (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	F. Iron (mg/L)
MW-1	1,500	1.23	420	23	19	0.4
MW-2	1,700	1.86	440	21	13	0.2
MW-3	0.5	1.23	200	37	42	0.1
(Date)	12/15/2011	12/15/2011	12/15/2011	12/15/2011	12/15/2011	12/15/2011

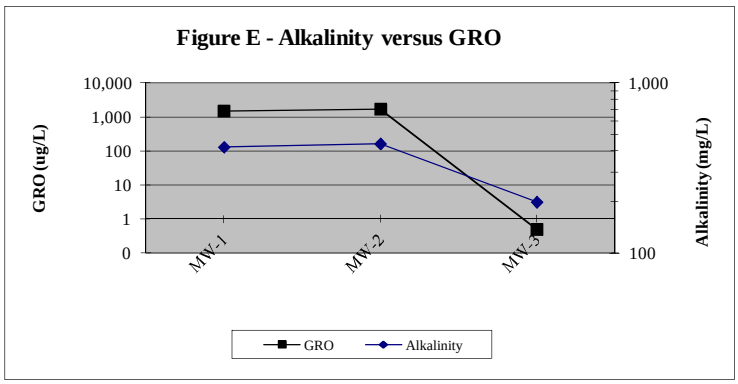
mg/L = Milligrams per liter
ug/L = Micrograms per liter
* - Actual GRO concentration was <50 ug/L
** - GRO samples were not collected with bioparameter samlps; GRO data from the following sample event was used for the comparison.











Palace Garage, 14336 Washington Avenue, San Leandro, CA
Bioparameter Data and Analysis

Well	GRO (ug/L)	DO (mg/L)	Alkalinity (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	F. Iron (mg/L)
MW-1	630	1.26	370	61	43	0.5
MW-2	68	1.98	420	38	29	0.1
MW-5	1	4.12	250	55	50	0.1
(Date)	11/8/2012	11/8/2012	11/8/2012	11/8/2012	11/8/2012	11/8/2012

mg/L = Milligrams per liter
ug/L = Micrograms per liter
* - Actual GRO concentration was <50 ug/L
** - GRO samples were not collected with bioparameter samlps; GRO data from the following sample event was used for the comparison.

Figure A - DO versus GRO

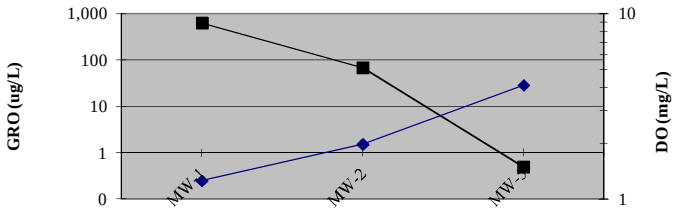


Figure B - Nitrate as Nitrogen versus GRO

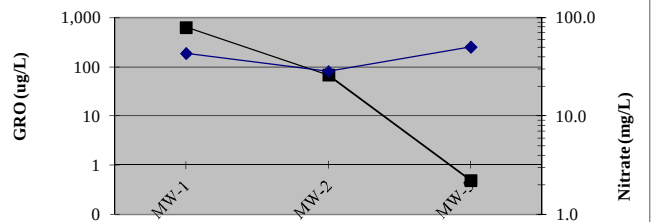


Figure C - Ferrous Iron versus GRO

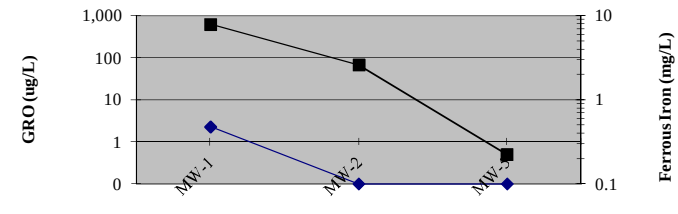


Figure D - Sulfate versus GRO

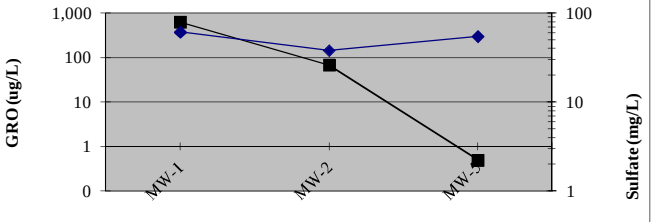


Figure E - Alkalinity versus GRO