Health Care Services

Alameda County Department of Environmental Health
Meeting Sign-In Sheet

Paramount UST
811 Paramount Road, Oakland, CA
RO0003143

Thursday, February 02, 2017
10:00 AM

NAME	COMPANY	MAILING ADDRESS	PHONE	Signature	E-MAIL
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STELLAR
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GEOSCIENCE & ENGINEERING CONSULTING

MEETING

Meeting Date: February 2, 2017, 10:00 AM

Attending: Mark Detterman & Dilan Roe – Alameda County Health Care Services (ACHCS)
Mark Jacobsen & Ilona Frieden – Property Owners
Amitai Schwartz – Property Owner's Counsel
Richard Makdisi & Henry Pietropaoli – Stellar Environmental

Subject: UST CASE: RO3143: 811 PARAMOUNT RD,
ACHCS letter, dated Nov 22, 2016

ACHCS is requesting a Feasibility Study and Corrective Action Plan (FS/CAP) because vapor intrusion into the site residence is occurring and contaminants in soil-gas and indoor air have not shown an entirely stable and decreasing trend since removal of the UST in December 2013.

Although the original UST excavation soil samples showed 25.2 mg/kg naphthalene and 3,960 mg/kg TPH-diesel at 12 feet deep, subsequent boring and soil sampling investigation indicate residual contamination in the vicinity of the former UST exists primarily in shallow (5 feet deep) soil gas. The concentration of contaminants of concern detected over the ESLs in the shallow soil-gas and basement room indoor air was summarized in the September 2016 Stellar Environmental report.

REMEDIAL/CORRECTIVE OPTIONS

The remedial options at this site are limited and we would like to potentially eliminate the FS/CAP step requested by ACHCS and agree on a plan of action at the meeting. The remedial/mitigation alternatives for this site are discussed below.

1) Propose to do no active remediation on property with acknowledgement that property owners accept the condition and health risk of the vapor intrusion and understand they are required by law to disclose the issue upon a change of property ownership.

2) In the alternative, propose to do no active remediation on property but agree to test indoor air monitoring on a biennial (every 2 years) to monitor contaminants diminish to below the regulatory ESLs of concern. The property owners acknowledge the monitoring time frame and eventual case closure date is unknown.

3) The remedial options of sub-slab venting or implementing a soil vapor extraction (SVE) system are costly. SVE is noisy and generally not well suited for a residential neighborhood. These options are not desired by the owners nor recommended by Stellar Environmental.

4) The remedial option of excavating residual contaminated soil is not considered practical as the contaminants are too close (<2 feet) from the building and possibly extend beneath the building. This option is not desired by the owners nor recommended by Stellar Environmental.

Key data Summarized (UST Removed 12/2013)

Soil-gas:	TPHg	880,000 (6/15) - 2,000,000 (9/15)	- 690,000 (3/16)	- 1,200,000 (8/16)
	TPHd	NA (6/15) - 240,000 (9/15)	- 680,000 (3/16)	- 580,000 (8/16)
	Benzene	< 250 (6/15) - 600 (9/15)	- 140 (3/16)	- 470 (8/16)
Soil-gas: Oxygen:		3.0 % (6/15) - NA (9/15)	- 1.2 % (3/16)	- 4% (8/16)
Indoor-air basement room:	TPHg	260 (4/16) - <65 (8/16)		
	TPHd	NA (6/15) - 180 (8/16)		
Persistent detections of: benzene; 0.36-0.2 and naphthalene; 0.33-1.0 slightly				

Results shown are in micrograms per cubic meter.

Table 1
Current and Historical Analytical Results of Detected Compounds in Soil-Gas Well SG-5.5
811 Paramount Road, Oakland, California

Sample I.D.	Contaminants (µg/m³)								Gases (%)		Leak Check (%)
	TPHd	TVHg	Benzene	Ethyl-benzene	Toluene	Xylenes	MTBE	Naphthalene	O_2	Methane	Helium
June 4, 2015											
SG6	NA	**880,000**	*<250*	*<250*	*<250*	*<250*	*<250*	*<250*	3.0	0.21	*<0.050*
SG6s	NA	NA	NA	NA	NA	NA	NA	*<2.7*	NA	NA	*<0.068**
September 23, 2015											
SG6SA	NA	**2,000,000**	**600**	340	94	410 j	*<33*	*<43*	NA	NA	NA
SG6s	**240,000**	NA	NA	NA	NA	NA	NA	*<3.0*	NA	NA	*<0.050**
SG6Sd	**230,000**	NA	NA	NA	NA	NA	NA	*<3.0*	NA	NA	*<0.050**
March 31, 2016											
SG5.5	NA	**690,000**	**140**	*<110*	7,500	390	<92	**67**	1.2	0.19	*<0.050*
SG5.5s	**460,000**	NA	NA	NA	NA	NA	NA	*<17.0*	NA	NA	0.13*
SG5.5sd	**680,000**	NA	NA	NA	NA	NA	NA	*<17.0*	NA	NA	0.13*
August 25, 2016											
SG5.5	NA	**1,200,000**	**470**	*<110*	*<82*	140	*<78*	*<190*	4.0	0.28	*<0.11*
SG5.5s	**410,000**	NA	NA	NA	NA	NA	NA	*<5.0*	NA	NA	*<0.050**
SG5.5sd	**580,000**	NA	NA	NA	NA	NA	NA	*<5.0*	NA	NA	*<0.050**
ESL	68,000	300,000	48	560	160,000	52,000	5,400	41	NR	NR	NR

*Notes: 's' indicates sorbent tube TO17 analysis; d = indicates duplicate sample; * = helium leak check during TO17 sorbent tube collection analyzed from in-line Summa*
ESL = Environmental Screening Level applicable to both shallow (<3 meters) and deep (>3 meters) soil-gas in residential areas where groundwater is considered a potential drinking water resource, above which additional investigation is recommended (Water Board 2016); Analytical results in **bold-face** type equal or exceed the applicable ESL;
Analytical results shown as < and italicized indicate a non-detection or less than the laboratory detection limit; µg/m³ = micrograms per cubic meter
TVHg = total petroleum hydrocarbons as gasoline; TPHd = total petroleum hydrocarbons as diesel; NA = not analyzed or not applicable; NR = not relevant

Table 2
Current and Historical Analytical TO15 Results of Detected Compounds in Soil-Gas Well SG5.5
811 Paramount Road, Oakland, California

Analyte	Sample Collection Date			ESL
	September 23, 2015	March 31, 2016	August 25, 2016	
Acetone	*<1,300*	4,300	*<210*	15,000,000
Benzene	**600**	**140**	**470**	48
2-butanone (MEK)	1,800 j	*<3,800*	*<260*	2,600,000
t-butyl alcohol	*<1,700*	2,700	*<260*	NLP
Cumene (isopropylbenzene)	ND	ND	280	NLP
Cyclohexane	24,000	5,400	8,500	NLP
Dichlorodiflouromethane	*<44*	1,100	*<110*	NLP
trans-1,3-dichloropropene	*<1.4*	180	*<98*	NLP
Ethanol	*<580*	13,000	*<160*	NLP
Ethyl acetate	*<29*	96	ND	NLP
Ethylbenzene	340	*<110*	250	560
4-Ethyltoluene	130 j	*<120*	140	NLP
Heptane	11,000	2,100	7,600	NLP
Hexane	4,600	1,200	2,200	NLP
4-methyl-2-pentanone	170 j	*<100*	*<89*	NLP
Methylene chloride	110	**650**	*<300*	510
Naphthalene *	*<43*	**67**	***<190***	41
Propylbenzene	ND	ND	310	NLP
Styrene	*<25*	150	<92	470,000
Tetrachloroethene	*<55*	**7,500**	*<150*	240
Toluene	94	7,500	<82	160,000
1,1,2-Trichloroethane	*<12*	*<0.70*	*<31*	88
1,2,4-Trimethylbenzene	130	130	130	NLP
1,3,5-Trimethylbenzene	150 j	*<120*	120	NLP
Xylenes	410 j	390	94	52,000
Helium (leak check)**	*<0.050*	*<0.050*	*<0.11*	NR

Notes:
ESL= Environmental Screening Level for shallow soil-gas at residential sites (Water Board 2016).
*NLP= no level published; Results in **bold-face** type exceed regulatory ESLs.*
Analytical results shown as "<" and italicized indicate a non-detection (ND) or less than the laboratory detection limit.
All results are reported in micrograms per cubic meter ($\mu g/m^3$)
j = indicates compound was detected below quantification limit and is a statistical estimated value.
** = Refer to Table 1 for naphthalene analysis results by by method TO17*
*** Helium tracer analyzed by Method ASTM194*

Table 3
Current and Historical Analytical Results of Detected Compounds in Indoor and Outdoor Air
811 Paramount Road, Oakland, California

Analyte	Indoor Air (Crawl Space) (IA-1)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Indoor Air (Living Room) (IA-3)	Outdoor Air (OA-1)	ESL
	October 30, 2015		April 1, 2016			August 26, 2016				
Method TO17 Analysis*										
TPH-diesel	*<31*	NA	NA	NA	NA	NA	**180**	NA	75	140
Naphthalene **	**0.51 j**	NA	NA	NA	NA	NA	**0.60**	NA	*<0.085*	0.083
Method TO15 Analysis										
TPH-gasoline	*<36*	*<36*	*<36*	**260**	*<36*	*<71*	*<65*	*<54*	*<57*	100
Acetone	*<6.0*	6.2	*<6.0*	62	*<6.0*	14	48	25	6.8	31,000
Acrolein	*ND*	*ND*	*<0.58*	5.3	*<0.58*	NA	NA	NA	NA	NLP
2-propanol	*ND*	*ND*	*ND*	*ND*	*ND*	2.3	7.7	1.6	*<2.0*	NLP
Acrylonitrile	*<0.22*	0.36	*<0.22*	*<0.22*	*<0.22*	NA	NA	NA	NA	NLP
Benzene	**0.20**	**1.0**	**0.28**	**0.36**	**0.36**	**0.17j**	**0.21j**	**0.20j**	**0.18j**	0.097
Bromodichloromethane	*ND*	*ND*	0.0074	0.022	*<0.0070*	*<0.14*	*<0.16*	*<0.14*	*<0.17*	0.076
2-Butanone (MEK)	*ND*	*ND*	<7.5	7.5	<7.5	2.4j	4.7	2.0	0.65j	5,200
Carbon Tetrachloride	0.062	**0.41**	**0.43**	**0.50**	**0.42**	0.49	0.62	0.53	0.48	0.067
Chloroform	0.034	**0.17**	**0.18**	**0.35**	0.11	0.22	0.22	0.54	0.096j	0.12
Chloromethane	*<0.21*	0.52	0.49	1.1	0.79	1.1	0.85	1.0	1.0	19
Cyclohexane	*ND*	*ND*	*<1.8*	2.8	*<1.8*	0.12j	2.1	0.22j	*<0.57*	NLP
1,3-Dichlorobenzene	*ND*	*ND*	1.8	8.7	0.063	*<0.14*	*<0.14*	*<0.042*	*<0.13*	NLP
1,4-Dichlorobenzene	*<0.030*	**0.49**	**1.8**	**8.7**	*<0.030*	0.048j	0.21	0.34	*<0.20*	0.26
Dichlorodifluoromethane	*<0.50*	2.4	2.2	2.2	2.2	2.6	2.4	2.7	2.6	NLP
Methylene chloride	*ND*	*ND*	*ND*	*ND*	*ND*	0.55j	0.49j	0.52j	0.52j	1.0
1,2-Dichloroethane	*<0.0041*	0.037	0.048	0.067	0.050	0.0141j	0.044j	0.047j	0.047j	0.11

Table 3 continued

Analyte	Indoor Air (Crawl Space) (IA-1)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Indoor Air (Living Room) (IA-3)	Outdoor Air (OA-1)	ESL
	October 30, 2015		April 1, 2016			August 26, 2016				
Method TO15 Analysis - continued										
1,2,Dichloropropane	*<0.0047*	0.017	0.022	0.039	0.024	*<0.18*	*<0.16*	*<0.13*	*<0.17*	0.28
1,4-Dioxane	0.021	*<0.018*	0.041	*<0.018*	*<0.018*	*<0.19*	*<0.17*	*<0.14*	*<0.18*	0.36
Ethanol	*ND*	*ND*	*ND*	*ND*	*ND*	1.8	19	320	2.6	NLP
Ethylbenzene	*<0.44*	0.82	*<0.44*	*<0.44*	*<0.44*	0.079j	0.23	0.15	0.066 j	1.1
4-Ethyltoluene	*ND*	*ND*	*ND*	*ND*	*ND*	*<0.17*	*<0.17*	0.34j	*<0.17*	NLP
Heptane	*ND*	*ND*	*ND*	*ND*	*ND*	*<0.16*	1.2	0.20j	0.57j	NLP
Hexane	*ND*	*ND*	*ND*	*ND*	*ND*	0.14j	1.0	0.13j	*<0.58*	NLP
2-Hexanone	*ND*	*ND*	*<0.42*	0.67	*<0.42*	*<0.18*	*<0.34*	<0.28	*<0.61*	NLP
4-Methyl-2-Pentanone	*ND*	*ND*	*<0.42*	0.70	*<0.42*	*<0.13*	0.48j	0.018j	*<0.68*	NLP
Naphthalene	*<0.050*	**0.21**	**0.14**	**1.0**	**0.14**	0.074j	**0.72**	0.33j	0.093j	0.083
Styrene	*ND*	*ND*	*<0.43*	1.9	*<0.43*	*<0.075*	0.88	0.26j	*<0.70*	940
1,1,1,2-Tetrachlorethane	*ND*	*ND*	*<0.0070*	0.0091	0.0077	*<0.0078*	*<0.0071*	*<0.0059*	*<0.0073*	0.048
Tetrachloroethene	*ND*	*ND*	0.075	0.074	*<0.069*	0.061j	0.054j	0.037j	0.049j	0.48
Tetrahydrofuran	*ND*	*ND*	*<0.60*	12	*<0.60*	*<0.44*	0.49j	*<0.33*	*<2.4*	NLP
Toluene	0.56	3.9	0.92	3.0	0.65	0.44	2.8	13	0.58	310
1,1,1-Trichloroethane	*ND*	*ND*	*ND*	*ND*	*ND*	0.016j	0.014j	0.026j	0.016j	1,000
Trichloroethene	*ND*	*ND*	*ND*	*ND*	*ND*	0.028j	0.066j	0.028j	0.021j	0.48
Trichloroflouromethane	*<0.57*	1.3	1.1	1.2	1.2	1.4	9.0	2.1	1.5	NLP
1,2,4-Trimethylbenzene	*<0.50*	1.0	*<0.50*	*<0.50*	*<050*	*<0.17*	0.44j	<0.20	*<0.81*	2.1
Xylenes	*<1.3*	3.6	*<1.3*	1.5	*<1.3*	0.3j	0.88	0.57	0.262j	100

Notes:

ESL= Environmental Screening Level for residential Indoor-Air (Water Board 2016, Tier 1). Results in ***bold*** *type exceed regulatory ESLs;*

NLP= no level published ; NA = not analyzed

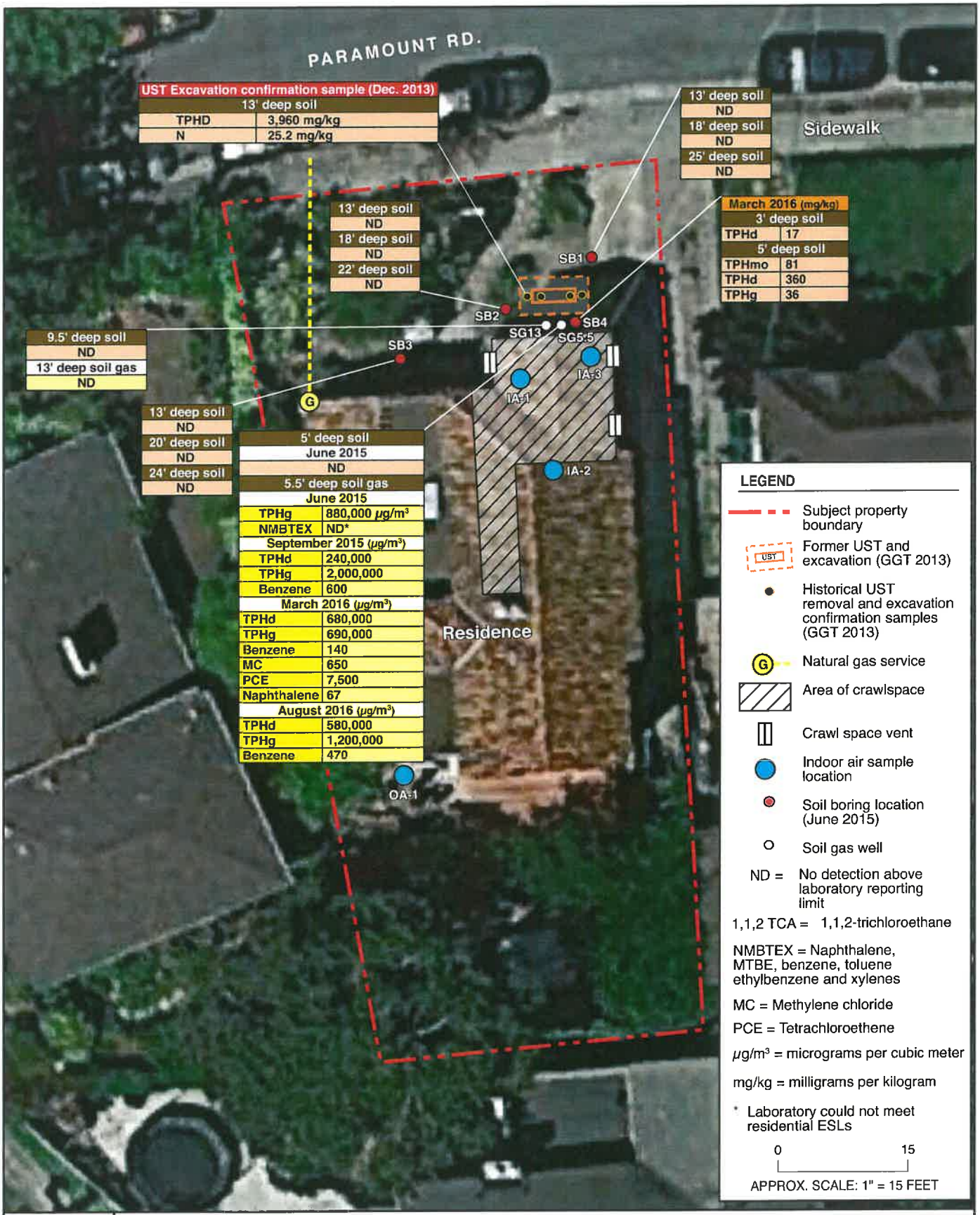
** = TO17 analysis reported to method dection limit, however method could not meet ESL for naphthalene; ** = refer to TO15 results for method TO17naphthalene analysis (Table 1).*

j = indicates compound was detected below quantification limit and is a statistical estimated value; All results are reported in micrograms per cubic meter (µg/m³)

Table 4
Historical Soil Sample Analytical Results
811 Paramount Road, Oakland, California

Sample ID	Depth (feet bgs)	TPHmo/ho	TPHd	TPHg	benzene	toluene	ethylbenzene	xylenes	MTBE	Naphthalene
June 2, 2015 Soil Samples (mg/kg)										
SG5.5-5	5	*<1.2*	*<6.0*	*NA*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*
SG13-9.5	9.5	*<1.2*	*<5.8*	*NA*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*
SB1-13	13	*<1.2*	*<6.0*	*NA*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*
SB1-18	18	*<1.2*	*<6.0*	*NA*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*
SB1-25	25	*<1.2*	*<6.0*	*NA*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*
SB2-13	13	*<1.2*	*<5.7*	*NA*	*<0.0057*	*<0.0057*	*<0.0057*	*<0.0057*	*<0.0057*	*<0.0057*
SB2-18	18	*<1.2*	*<5.8*	*NA*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*
SB2-22	22	*<1.2*	*<5.6*	*NA*	*<0.0056*	*<0.0056*	*<0.0056*	*<0.0056*	*<0.0056*	*<0.0056*
SB3-13	13	*<1.2*	*<6.0*	*NA*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*	*<0.0060*
SB3-20	20	*<1.2*	*<5.8*	*NA*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*	*<0.0058*
SB3-24	24	*<1.2*	*<5.9*	*NA*	*<0.0059*	*<0.0059*	*<0.0059*	*<0.0059*	*<0.0059*	*<0.0059*
March 31, 2016 Soil Samples (mg/kg)										
SB4-3.5	3	*<5.9*	17	*<1.2*	*<0.0019*	*<0.0026*	*<0.0024*	*<0.0029*	*<0.0015*	*<0.00071*
SB4-5.5	5	81	**360**	36	*<0.0020*	*<0.0027*	*<0.0024*	*<0.0031*	*<0.0016*	*<0.00073*
ESL	--	5,100	230	100	0.044	2.9	1.4	2.3	0.023	0.023

Notes:
TPHmo= total petroleum hydrocarbons as motor oil/hydraulic oil
TPHd = total petroleum hydrocarbons as diesel
TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary-butyl ether
ESL = Environmental Screening Levels for residential sites where groundwater is considerd a potential drinking water resource (Water Board, 2016).
Analytical results shown as < italicized indicate a non-detection or less than the laboratory reporting limit.
All concentrations are expressed in milligrams per kilogram (mg/kg). Analytical results in bold type exceed the ESLs.
Sample concentrations reported on a dry weight basis. Moisture content in the soils ranged from 10.5 to 18.1 %. .Moisture analyses included in Appendix D
bgs = below ground surface



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DISTRIBUTION OF ANALYTICAL RESULTS OF SOIL AND SOIL GAS

811 Paramount Road
Oakland, CA

By: MJC | SEPTEMBER 2016

Figure 3

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2015-16-17

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ANALYTICAL RESULT OF CONTAMINANT >ESLs IN INDOOR AND OUTDOOR AIR

811 Paramount Road
Oakland, CA

By: MJC | SEPTEMBER 2016

Figure 5

STELLAR ENVIRONMENTAL SOLUTIONS, INC
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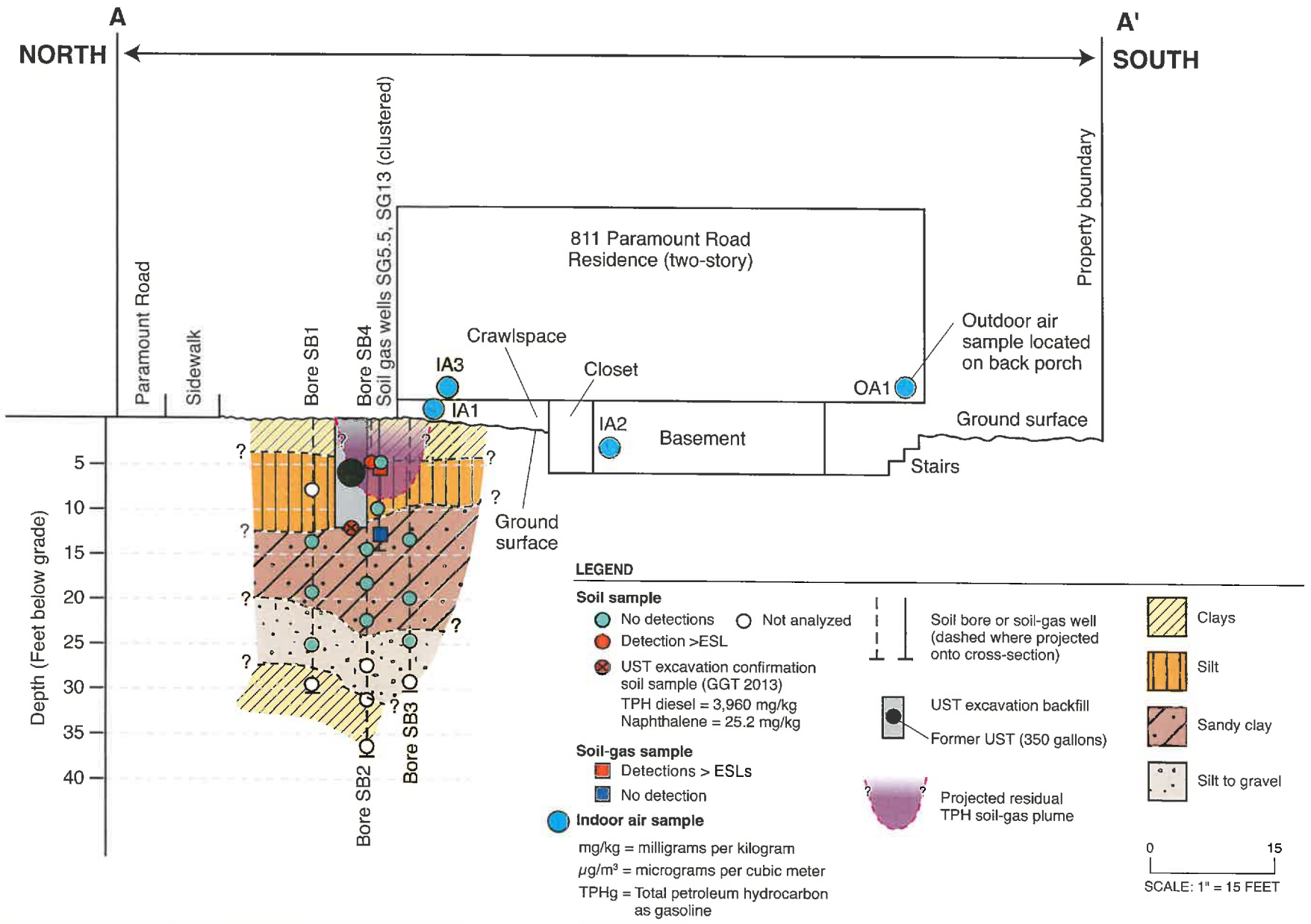
2015-16-18



2015-16-19

STELLAR ENVIRONMENTAL SOLUTIONS, INC
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CROSS-SECTION A-A'

811 Paramount Road, Oakland, CA

Figure 4

by: MJC | SEPTEMBER 2016