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By Alameda County Environmental Health 3:30 pm, Mar 24, 2017

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Project No. 2015-29  
August 8, 2016

Mr. Tyler Wood  
Lennar Multifamily Communities  
492 9<sup>th</sup> Street Suite 300  
Oakland, California 94607

Subject: **ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENT**  
Parking Lot Parcels  
301 19<sup>th</sup> Street  
008-0625-002-1  
Oakland, California

- References:
- 1) Phase I Environmental Site Assessment at 1711, 1801, 1805, 1811, 1817 through 1839 Harrison Street; 301 19<sup>th</sup> Street; 1732 through 1736, 1750, and 1801 Webster Street in Oakland, California  
*By GeoSolve, Inc.*  
*Dated November 6, 2015*
  - 2) Phase II Environmental Site Assessment at 1750 Webster Street and 301 19<sup>th</sup> Street in Oakland, California  
*By GeoSolve, Inc.*  
*Dated November 7, 2015*
  - 3) Additional Phase II Environmental Site Assessment at 1750 Webster Street and 301 19<sup>th</sup> Street in Oakland, California  
*By GeoSolve, Inc.*  
*Dated December 23, 2015*

Dear Mr. Wood:

At your request, *GeoSolve, Inc.* had conducted an Additional Phase II Environmental Site Assessment (ESA) for the above referenced property. The subject property for this Additional Phase II ESA is located at 301 19<sup>th</sup> Street in Oakland, California. The subject site consists of one parcel bounded by Webster Street to the north, 19<sup>th</sup> Street to the east, Harrison Street to the south and vacant parking lots to the west. The subject property has Assessor Parcel Number (APN) 008-0625-002-1 and occupies approximately 0.52 acre. The subject property is vacant and used as a parking lot. The site vicinity is shown on Figure 1, Site Vicinity Map.



## **Background**

Based on review of Reference 1, elevated concentrations of total petroleum hydrocarbons reported as gasoline (TPHg) and benzene were detected in groundwater up to 200,000 micrograms per liter ( $\mu\text{g/L}$ ) and 14,000  $\mu\text{g/L}$  on the southern portion of the property along Webster Street. Based on the findings of our Phase I ESA (Reference 3), the elevated concentrations of TPHg, benzene, toluene, ethyl benzene, and total xylenes (BTEX) appear to have originated from 1721 Webster Street, which is situated approximately 300 feet northwest of the subject property and immediately up-gradient.

In November 2015, *GeoSolve, Inc.* advanced one boring on the subject property and two borings on 301 19<sup>th</sup> Street to evaluate the concentrations of petroleum hydrocarbons in subsurface soil and groundwater in our Phase II ESA (Reference 2). Based on the laboratory analytical results of soil samples, concentrations of TPHg, BTEX, or MTBE were not detected in all soil samples analyzed from borings B-1 through B-3 as shown on Table 1, with the exception of total xylenes. Total xylenes was the only chemical constituent detected in soil sample B1-25 at 0.016 mg/Kg, which is significantly below the California Regional Water Quality Control Board – Region 2 (RWQCB) Environmental Screening Level (ESL) of 111 mg/Kg for residential development (Table B, December 2013).

Lead was detected at 170 mg/Kg in soil sample B1-5, which exceeded the residential ESL of 80 mg/Kg and lead was detected below the residential ESL in all other soil samples analyzed from borings B-1 through B-3.

TPHg, BTEX, MTBE and lead were not detected in groundwater samples collected from borings B-2 or B-3. MTBE was not detected in groundwater sample B-1. Lead was detected up to 0.54 micrograms per liter ( $\mu\text{g/L}$ ) in groundwater sample B-1. An elevated concentration of TPHg was detected at 26,000  $\mu\text{g/L}$ , which exceed the residential ESL of 500  $\mu\text{g/L}$  in groundwater sample B-1. Benzene, toluene, ethyl benzene and total xylenes exceeded residential ESLs of 27  $\mu\text{g/L}$ , 130  $\mu\text{g/L}$  and 100  $\mu\text{g/L}$ , respectively.

In December 2015, an Additional Phase II ESA was conducted at 1750 Webster and 301 19<sup>th</sup> Streets to evaluate the lateral and vertical extent of the petroleum hydrocarbons and VOCs in the subsurface soil and groundwater beneath the site (Reference 3). Based on the laboratory analytical results of the soil and groundwater samples collected from borings B-4 through B-6, no detectable concentrations of TPHg or BTEX were reported in soil samples analyzed from 10 feet and 20 feet bgs; however, minor concentrations of TPHg or BTEX were detected in the soil samples collected from 25 feet bgs in borings B-4 and B-5. Furthermore, no detectable concentrations of chlorinated hydrocarbons or MTBE were detected in any soil and/or groundwater sample collected from borings B-4 through B-6. Elevated concentrations of TPHg and BTEX were detected in soil sample B6-25 and in groundwater from borings B-4 through B-6, with the greatest concentration detected in groundwater from boring B-6. These elevated concentrations of TPHg and BTEX are most likely from the up-gradient and off-site source property at 1721 Webster Street.





No elevated concentrations lead were detected in any soil sample analyzed from borings B-4 through B-6. Elevated concentrations of dissolved lead were detected in all groundwater samples collected from borings B-4 through B-6.

The purpose of conducting this Additional Phase II ESA is to evaluate the subsurface conditions in soil and ground around the former gasoline service station along Harrison Street at 301 19<sup>th</sup> Street identified in the Phase I ESA (Reference 1) prior to purchasing the land.

## ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENT

Prior to commencement of fieldwork, *GeoSolve, Inc.* visited the subject property, marked three locations with white paint, and contacted underground service alert (USA) 48-hours before drilling activities. In addition, a Site-Specific Health and Safety Plan was prepared for the project, and was kept on site during fieldwork activities.

### **Fieldwork**

Once USA was notified and the underground utilities were marked, a *GeoSolve, Inc.* field geologist observed Penecore Drilling, Inc., a State-licensed drilling contractor (C57-906899) of Woodland, California, advance three borings (B-7 through B-9) to groundwater on July 14, 2016. The locations of borings B-7 through B-9 are shown on Figure 2, which were all drilled on 301 19<sup>th</sup> Street. The borings were advanced using a direct-push drilling rig, equipped with Enviro-Core (dual-tube) sampling system. Each sampling rod was lined with Acetate sample liners and each boring was continuously cored. Each boring was logged in accordance with the Unified Soil Classification System (USCS) and soil samples were hand-sawed at 1-foot, 5-feet, 10-feet, and 15-feet below ground surface (bgs). The soil sample ends were covered with Teflon tape, capped, labeled, and placed within a pre-chilled ice chest for temporary storage.

After the soil samples were collected from each boring, clean 1-inch diameter PVC well screening was inserted into each boring and groundwater “grab” samples were collected from each boring using a hand bailer, and decentered into laboratory supplied and pre-hydrochloric acidified 40 milliliter (ml) VOAs. Each VOA was sealed, checked for headspace, labeled, and placed within a pre-chilled ice-chest for temporary storage.

Once soil and groundwater samples were collected from each boring, the borings were backfilled with neat cement to grade.

### **Soil Sample Description**

The subsurface materials encountered at the site included approximately 2-inches of asphalt underlain black silty clay to gray clayey gravel (fill). The fill unit extended to approximately 1 foot bgs and was underlain by yellow brown to gray brown fine sandy clay to brown mottled yellow clayey fine sand to approximately 4 feet to 6 feet bgs. The fine sandy clay to clayey fine sand was underlain by gray brown clayey fine sand to gray brown mottled yellow fine to medium



sand to the total explored depth of 20 feet bgs, with the exception of gray brown silty clay from 16 feet to 17.5 feet bgs in boring B-9.

No odors or staining were noted in any boring explored. Groundwater was encountered at 17.5 feet in borings B-7 and B-9 and 15 feet bgs in boring B-8. Copies of the Boring Logs are attached to this letter report as Appendix A.

### **Laboratory Methods and Analyses**

Selected soil and groundwater samples were delivered under chain-of-custody documentation to McCampbell Analytical, Inc., a State-certified hazardous waste sampling laboratory (Certification No. 1644) in Pittsburg, California.

Soil samples B7-1, B7-10, B7-15, B8-1, B8-10, B8-15, B9-10, and B9-15 were analyzed for total lead using Environmental Protection Agency (EPA) SW3050B/SW6010B. Soil samples B7-1, B7-10, B7-15, B8-1, B8-10, B8-15, B9-1, B9-10, and B9-15 and groundwater grab samples B-7, B-8, and B-9 were analyzed for TPHg, BTEX, methyl tertiary butyl ether (MTBE), and lead using EPA Methods SW5030B/SW8021B/8015m and E200.8.

A summary of laboratory analyses are shown on Tables 1 and 2, Laboratory Analytical Results of Soil Samples and Groundwater Samples and a copy of the McCampbell Analytical, Inc. Laboratory Analytical Report and Chain-of-Custody Documents are attached to Appendix B.

**TABLE 1**  
**LABORATORY ANALYTICAL RESULTS OF SOIL SAMPLES**  
**301 19<sup>th</sup> Street**  
**Oakland, California**  
**July 14, 2016**

Sample ID	Sample Depth (feet)	TPHg (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)	MTBE (mg/Kg)	Lead (mg/Kg)
B7-1	1	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	5.1
B7-10	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	1.7
B7-15	3	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	2.0
B8-1	1	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	9.7
B8-10	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	2.0
B8-15	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	2.3
B9-1	1	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	NA
B9-10	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	1.6
B9-15	1	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	2.5
<i>ESLs</i>	---	<i>100</i>	<i>0.74</i>	<i>9.3</i>	<i>4.7</i>	<i>111</i>	<i>8.4</i>	<i>80</i>

mg/Kg = milligrams per kilogram, equivalent to parts per million (ppm).

NA = not analyzed.





**TABLE 2**  
**LABORATORY ANALYTICAL RESULTS OF GROUNDWATER SAMPLES**  
**301 19<sup>th</sup> Street**  
**Oakland, California**  
**July 14, 2016**

Sample ID	Sample Depth (feet)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Lead (µg/L)
B-7	17.5	<50	<0.50	<0.50	<0.50	<0.050	<5	280
B-8	15	<50	<0.50	<0.50	<0.50	<0.050	<5	440
B-9	17.5	<50	<0.50	0.77	<0.50	<0.050	<5	34
ESLs	---	500	27	130	43	100	1,800	2.5

µg/L = micrograms per liter, equivalent to parts per billion (ppb).

### Discussion

Based on the laboratory analytical results of soil samples, concentrations of TPHg, BTEX, or MTBE were not detected in all soil samples analyzed from borings B-7 through B-9 at 1 foot, 10 feet or 15 feet bgs, as shown on Table 1 and were detected below the California Regional Water Quality Control Board – Region 2 (RWQCB) Environmental Screening Levels (ESLs) listed at the base of Table 1 for residential development (Table B, December 2013). Lead was detected at concentrations ranging from 1.7 mg/Kg to 9.7 mg/Kg, which were below the residential soil ESL of 80 mg/Kg. In addition, MTBE was not detected in any soil sample analyzed from borings B-7 through B-9.

No detectable concentrations of TPHg (less than 50 micrograms per liter [µg/L]), BTEX (less than 0.50 µg/L) or MTBE (less than 0.05 µg/L) in groundwater grab samples B-7 through B-9, with the exception of a very low concentration of toluene of 0.77 µg/L in groundwater grab sample B-9. TPHg, BTEX and MTBE were detected below residential ESLs for groundwater as listed at the base of Table 2.

Lead was detected above the residential ESL of 2.5 µg/L at concentrations ranging from 34 µg/L to 440 µg/L.

### Conclusions

Based on the field and laboratory analytical results discussed in this Letter Report, *GeoSolve, Inc.* concludes the following:

- No detectable concentrations of TPHg, BTEX or MTBE were reported in any soil sample analyzed from borings B-7 through B-9.



- No detectable concentrations of TPHg, BTEX, or MTBE were reported in groundwater samples B-7 through B-9, with the exception of a very low concentration of toluene at 0.77 µg/L in groundwater grab sample B-9.
- No elevated concentrations lead were detected in any soil sample analyzed from borings B-7 through B-9. Moderate concentrations of dissolved lead were detected in all groundwater samples collected from borings B-7 through B-9, and represent background concentrations. These moderately elevated dissolved lead concentrations detected in groundwater grab samples B-7 through B-9 do not pose a significant risk to the property since groundwater is not potable and the groundwater will not be used in the proposed development.
- These data suggest the former gasoline service station situated along Harrison Street did not significantly impact the subject property and the existing petroleum-hydrocarbon groundwater plume detected on 1750 Webster Street has not impacted the southern portion of the 301 19<sup>th</sup> Street property.

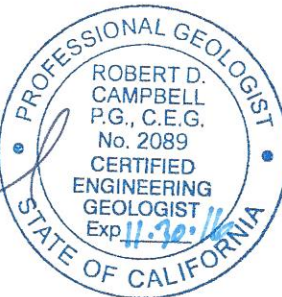
### Recommendations

Based on the conclusions presented in this Letter Report, *GeoSolve, Inc.* recommends no further action is required on the subject property.

If you have any questions or need further information regarding this Additional Phase II ESA, please call us at (925) 963-1198.

Sincerely,

*GeoSolve, Inc.*



Robert D. Campbell, M.S., P.G., C.E.G., Q.S.D.  
Principal Engineering Geologist

Attachments: Figure 1, Site Vicinity Map  
Figure 2, Site Plan  
Appendix A – Logs of Borings  
Appendix B – McCampbell Analytical, Inc. Laboratory Analytical Report and  
Chain-of-Custody Documents







Source: Google Maps, 2015



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Geoscience solutions rather than Status-Quo  
Address: 1807 Santa Rita Rd, Suite D-165  
Pleasanton, California 94566

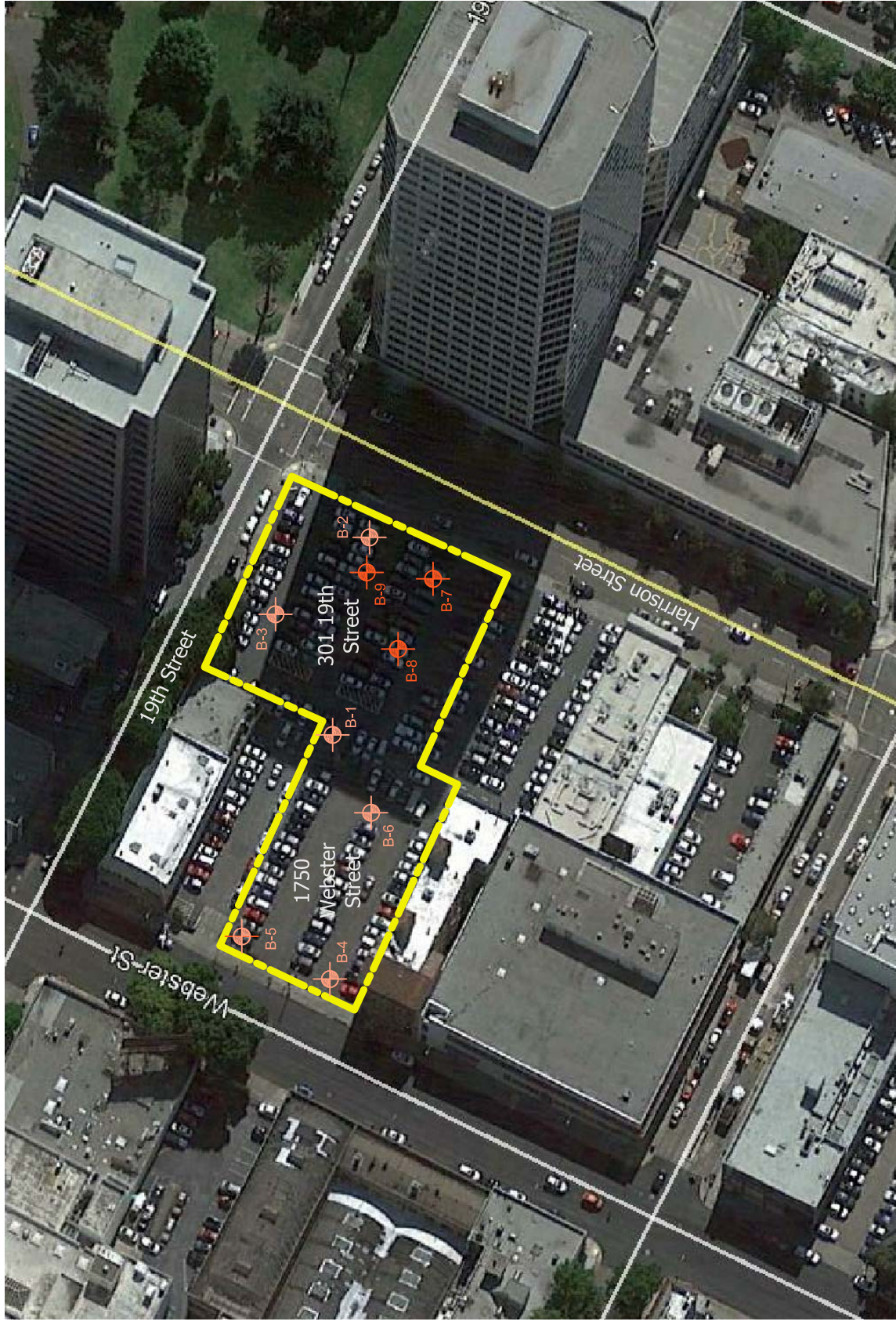
## VICINITY MAP

LENNAR MULTIFAMILY COMMUNITIES  
PHASE II - ENVIRONMENTAL SITE ASSESSMENTS  
1750 WEBSTER STREET and 301 19TH STREET  
OAKLAND, CALIFORNIA

Project No.  
2015-29  
Scale:  
AS SHOWN

Drawn by:  
GC  
Date:  
07/2016

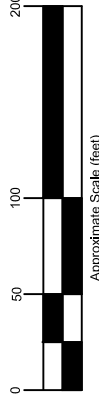




**LEGEND**

--- Property Line

 B-7 Boring Location



Approximate Scale (feet)

Source: Google Earth, 2015



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**SITE PLAN**

LENNAR MULTIFAMILY COMMUNITIES  
ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENTS  
1750 WEBSTER STREET and 301 19th STREET  
OAKLAND, CALIFORNIA

Project No.  
2015-29  
Scale:  
AS SHOWN

Drawn by:  
GC  
Date:  
07/2016

Figure No.

**2**



**APPENDIX A**  
**LOGS OF BORING**



Depth (ft)	Soil Samples Sample No. & Type	Symbol	Soil Description	Unified Soil Classification	Blows/foot 300 ft-lb	Qu - t. s. t. Penetrometer	Dry Density p.c.f.	Moisture % Dry Wt.	Misc. Lab Result
-1	B7-1	■	2 inches of asphalt						
-2			Black, silty CLAY (CL) with sand, odor, moist;						
-3			Yellow brown mottled gray, fine sand CLAY (CL), no odor, moist;						
-4									
-5	B7-5	■	Gray brown, clayey fine SAND (SC), no odor, moist;						
-6									
-7									
-8									
-9									
-10	B7-10	■	Gray brown, fine to medium SAND (SP) with silt,, no odor, moist;						
-11									
-12									
-13									
-14									
-15	B7-15	■							
-16			(grades medium sand @ 16 feet)						
-17		▼							
-18									
-19									
-20	B7-20	■	Boring was terminated at 20 feet below ground surface (bgs). Groundwater was encountered at 17.5 feet bgs.						
-21									
-22									
-23									
-24									
-25									
-26									
-27									
-28									
-29									
-30									

Logged by:  
RDC

Date Logged:  
07/14/16

Diameter:  
2.5"

## BORING LOG



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LENNAR MULTIFAMILY COMMUNITIES  
ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENTS  
1750 WEBSTER STREET and 301 19th sTREET  
OAKLAND, CALIFORNIA

Figure No.

**B-7**

Project No.  
2015-29

Drawn by:  
GC

Scale:  
NA

Date:  
07/2016



Depth (ft)	Soil Samples Sample No. & Type Symbol	Soil Description	Unified Soil Classification	Blows/foot 300 ft-lb	Qu - t. s. t. Penetrometer	Dry Density p.c.f.	Moisture % Dry Wt.	Misc. Lab Result
1	B8-1	2 inches of asphalt Black, silty CLAY (CL) with sand, odor, moist; Brown mottled Yellow clayey fine sand (SC), moist; no odor;						
5	B8-5							
6		Gray brown mottled yellow, fine to medium SAND (SP) with silt, no odor, very moist;						
10	B8-10							
14		(grades medium sand @ 14 feet)						
15	B8-15							
20	B8-20	Boring was terminated at 20 feet below ground surface (bgs). Groundwater was encountered at 15 feet bgs.						

Logged by:  
RDC

Date Logged:  
07/14/16

Diameter:  
2.5"

## BORING LOG



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Pleasanton, California 94566

LENNAR MULTIFAMILY COMMUNITIES  
ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENTS  
1750 WEBSTER STREET and 301 19th sTREET  
OAKLAND, CALIFORNIA

Figure No.

**B-8**

Project No.  
2015-29

Drawn by:  
GC

Scale:  
NA

Date:  
07/2016

Depth (ft)	Soil Samples Sample No. & Type	Symbol	Soil Description	Unified Soil Classification	Blows/foot 300 ft-lb	Qu - t. s. t. Penetrometer	Dry Density p.c.f.	Moisture % Dry Wt.	Misc. Lab Result
1	B9-1	■	2 inches of asphalt Gray, clayey GRAVEL with sand, no odor, moist (FILL) Yellow brown mottled gray, clayey fine SAND (SC), no odor, moist;						
5	B9-5	■							
6			Brown mottled gray, fine to medium SAND (SP) with silt, no odor, moist;						
10	B9-10	■							
12.5			(grades medium sand @ 12.5 feet)						
15	B9-15	■							
16			Gray brown, silty CLAY (CL), no odor, very moist;						
17.5		▼	Gray brown, medium SAND (SP), no odor, wet;						
20	B9-20	■	Boring was terminated at 20 feet below ground surface (bgs). Groundwater was encountered at 17.5 feet bgs.						

Logged by:  
RDC

Date Logged:  
07/14/16

Diameter:  
2.5"

## BORING LOG



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LENNAR MULTIFAMILY COMMUNITIES  
ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENTS  
1750 WEBSTER STREET and 301 19th sTREET  
OAKLAND, CALIFORNIA

Figure No.

**B-9**

Project No.  
2015-29

Drawn by:  
GC

Scale:  
NA

Date:  
07/2016



**APPENDIX B**

**McCAMPBELL ANALYTICAL, INC. LABORATORY ANALYTICAL RESULTS  
AND CHAIN-OF-CUSTODY DOCUMENTS**





# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1607612

**Report Created for:** Geosolve, Inc.

1807 Santa Rita Road, Suite D-165  
Pleasanton, CA 94566

**Project Contact:** Rob Campbell

**Project P.O.:**

**Project Name:** 2015-29; 19th Street

**Project Received:** 07/14/2016

Analytical Report reviewed & approved for release on 07/20/2016 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*







## Glossary of Terms & Qualifier Definitions

**Client:** Geosolve, Inc.  
**Project:** 2015-29; 19th Street  
**WorkOrder:** 1607612

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

### Analytical Qualifiers

b1 aqueous sample that contains greater than ~1 vol. % sediment



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-1	1607612-001A	Soil	07/14/2016	GC19	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/18/2016 20:08
MTBE	ND		0.050	1	07/18/2016 20:08
Benzene	ND		0.0050	1	07/18/2016 20:08
Toluene	ND		0.0050	1	07/18/2016 20:08
Ethylbenzene	ND		0.0050	1	07/18/2016 20:08
Xylenes	ND		0.015	1	07/18/2016 20:08
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	86		70-130		07/18/2016 20:08
Analyst(s): IA					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-10	1607612-003A	Soil	07/14/2016	GC7	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/19/2016 04:39
MTBE	ND		0.050	1	07/19/2016 04:39
Benzene	ND		0.0050	1	07/19/2016 04:39
Toluene	ND		0.0050	1	07/19/2016 04:39
Ethylbenzene	ND		0.0050	1	07/19/2016 04:39
Xylenes	ND		0.015	1	07/19/2016 04:39
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	87		70-130		07/19/2016 04:39
Analyst(s): IA					

(Cont.)



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-15	1607612-004A	Soil	07/14/2016	GC19	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/18/2016 20:38
MTBE	ND		0.050	1	07/18/2016 20:38
Benzene	ND		0.0050	1	07/18/2016 20:38
Toluene	ND		0.0050	1	07/18/2016 20:38
Ethylbenzene	ND		0.0050	1	07/18/2016 20:38
Xylenes	ND		0.015	1	07/18/2016 20:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	97		70-130		07/18/2016 20:38
Analyst(s): IA					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-1	1607612-006A	Soil	07/14/2016	GC19	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/19/2016 11:53
MTBE	ND		0.050	1	07/19/2016 11:53
Benzene	ND		0.0050	1	07/19/2016 11:53
Toluene	ND		0.0050	1	07/19/2016 11:53
Ethylbenzene	ND		0.0050	1	07/19/2016 11:53
Xylenes	ND		0.015	1	07/19/2016 11:53
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	97		70-130		07/19/2016 11:53
Analyst(s): IA					

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-10	1607612-008A	Soil	07/14/2016	GC7	123785

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	07/19/2016 04:09
MTBE	ND	0.050	1	07/19/2016 04:09
Benzene	ND	0.0050	1	07/19/2016 04:09
Toluene	ND	0.0050	1	07/19/2016 04:09
Ethylbenzene	ND	0.0050	1	07/19/2016 04:09
Xylenes	ND	0.015	1	07/19/2016 04:09

Surrogates	REC (%)	Limits
2-Fluorotoluene	95	70-130

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-15	1607612-009A	Soil	07/14/2016	GC19	123785

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	07/18/2016 21:09
MTBE	ND	0.050	1	07/18/2016 21:09
Benzene	ND	0.0050	1	07/18/2016 21:09
Toluene	ND	0.0050	1	07/18/2016 21:09
Ethylbenzene	ND	0.0050	1	07/18/2016 21:09
Xylenes	ND	0.015	1	07/18/2016 21:09

Surrogates	REC (%)	Limits
2-Fluorotoluene	92	70-130

Analyst(s): IA



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B9-1	1607612-011A	Soil	07/14/2016	GC19	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/18/2016 21:39
MTBE	ND		0.050	1	07/18/2016 21:39
Benzene	ND		0.0050	1	07/18/2016 21:39
Toluene	ND		0.0050	1	07/18/2016 21:39
Ethylbenzene	ND		0.0050	1	07/18/2016 21:39
Xylenes	ND		0.015	1	07/18/2016 21:39
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	91		70-130		07/18/2016 21:39
Analyst(s): IA					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B9-10	1607612-013A	Soil	07/14/2016	GC7	123785
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	07/19/2016 03:39
MTBE	ND		0.050	1	07/19/2016 03:39
Benzene	ND		0.0050	1	07/19/2016 03:39
Toluene	ND		0.0050	1	07/19/2016 03:39
Ethylbenzene	ND		0.0050	1	07/19/2016 03:39
Xylenes	ND		0.015	1	07/19/2016 03:39
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	101		70-130		07/19/2016 03:39
Analyst(s): IA					

(Cont.)



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B9-15	1607612-014A	Soil	07/14/2016	GC19	123785

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	07/18/2016 22:10
MTBE	ND	0.050	1	07/18/2016 22:10
Benzene	ND	0.0050	1	07/18/2016 22:10
Toluene	ND	0.0050	1	07/18/2016 22:10
Ethylbenzene	ND	0.0050	1	07/18/2016 22:10
Xylenes	ND	0.015	1	07/18/2016 22:10

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	94	70-130	07/18/2016 22:10

Analyst(s): IA





## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/16/16-7/17/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7	1607612-016A	Water	07/14/2016	GC3	123881

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/16/2016 23:36
MTBE	ND	5.0	1	07/16/2016 23:36
Benzene	ND	0.50	1	07/16/2016 23:36
Toluene	ND	0.50	1	07/16/2016 23:36
Ethylbenzene	ND	0.50	1	07/16/2016 23:36
Xylenes	ND	1.5	1	07/16/2016 23:36

Surrogates	REC (%)	Limits
aaa-TFT	95	70-130

Analyst(s): LT

Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8	1607612-017A	Water	07/14/2016	GC7	123883

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/16/2016 21:17
MTBE	ND	5.0	1	07/16/2016 21:17
Benzene	ND	0.50	1	07/16/2016 21:17
Toluene	ND	0.50	1	07/16/2016 21:17
Ethylbenzene	ND	0.50	1	07/16/2016 21:17
Xylenes	ND	1.5	1	07/16/2016 21:17

Surrogates	REC (%)	Limits
aaa-TFT	97	70-130

Analyst(s): LT

Analytical Comments: b1



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/16/16-7/17/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-9	1607612-018A	Water	07/14/2016	GC7	123883

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/17/2016 15:02
MTBE	ND	5.0	1	07/17/2016 15:02
Benzene	ND	0.50	1	07/17/2016 15:02
Toluene	<b>0.77</b>	0.50	1	07/17/2016 15:02
Ethylbenzene	ND	0.50	1	07/17/2016 15:02
Xylenes	ND	1.5	1	07/17/2016 15:02

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	98	70-130	07/17/2016 15:02

Analyst(s): IA

Analytical Comments: b1



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-1	1607612-001A	Soil	07/14/2016	ICP-MS3	123784

Analytes	Result	RL	DF	Date Analyzed
Lead	5.1	0.50	1	07/19/2016 03:47

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	103	70-130	07/19/2016 03:47

Analyst(s): BBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-10	1607612-003A	Soil	07/14/2016	ICP-MS3	123784

Analytes	Result	RL	DF	Date Analyzed
Lead	1.7	0.50	1	07/19/2016 04:12

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	103	70-130	07/19/2016 04:12

Analyst(s): BBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B7-15	1607612-004A	Soil	07/14/2016	ICP-MS3	123784

Analytes	Result	RL	DF	Date Analyzed
Lead	2.0	0.50	1	07/19/2016 04:18

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	103	70-130	07/19/2016 04:18

Analyst(s): BBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-1	1607612-006A	Soil	07/14/2016	ICP-MS3	123784

Analytes	Result	RL	DF	Date Analyzed
Lead	9.7	0.50	1	07/19/2016 04:24

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	101	70-130	07/19/2016 04:24

Analyst(s): BBO

(Cont.)





## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-10	1607612-008A	Soil	07/14/2016	ICP-MS3	123792
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	2.0		0.50	1	07/18/2016 19:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Terbium	106		70-130		07/18/2016 19:26
<u>Analyst(s):</u> BBO					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B8-15	1607612-009A	Soil	07/14/2016	ICP-MS3	123792
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	2.3		0.50	1	07/19/2016 04:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Terbium	103		70-130		07/19/2016 04:30
<u>Analyst(s):</u> BBO					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B9-10	1607612-013A	Soil	07/14/2016	ICP-MS3	123792
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	1.6		0.50	1	07/19/2016 03:41
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Terbium	104		70-130		07/19/2016 03:41
<u>Analyst(s):</u> BBO					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B9-15	1607612-014A	Soil	07/14/2016	ICP-MS3	123792
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	2.5		0.50	1	07/19/2016 04:36
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Terbium	104		70-130		07/19/2016 04:36
<u>Analyst(s):</u> BBO					



## Analytical Report

**Client:** Geosolve, Inc.  
**Date Received:** 7/14/16 18:30  
**Date Prepared:** 7/14/16-7/15/16  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

### Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7	1607612-016B	Water	07/14/2016	ICP-MS2	123731
<u>Analytes</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead		280	50	100	07/19/2016 07:51
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>		
Terbium		93	70-130		07/19/2016 07:51
<u>Analyst(s):</u> DB			<u>Analytical Comments:</u> b1		

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8	1607612-017B	Water	07/14/2016	ICP-MS3	123798
<u>Analytes</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead		440	50	100	07/19/2016 09:42
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>		
Terbium		97	70-130		07/19/2016 09:42
<u>Analyst(s):</u> DVH			<u>Analytical Comments:</u> b1		

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-9	1607612-018B	Water	07/14/2016	ICP-MS2	123731
<u>Analytes</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead		34	5.0	10	07/19/2016 07:57
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>		
Terbium		99	70-130		07/19/2016 07:57
<u>Analyst(s):</u> DB			<u>Analytical Comments:</u> b1		



## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/14/16  
**Date Analyzed:** 7/15/16  
**Instrument:** GC19  
**Matrix:** Soil  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123785  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-123785  
 1607609-001AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.618	0.40	0.60	-	103	70-130
MTBE	ND	0.0945	0.050	0.10	-	95	70-130
Benzene	ND	0.100	0.0050	0.10	-	100	70-130
Toluene	ND	0.102	0.0050	0.10	-	102	70-130
Ethylbenzene	ND	0.104	0.0050	0.10	-	104	70-130
Xylenes	ND	0.314	0.015	0.30	-	104	70-130
<b>Surrogate Recovery</b>							
2-Fluorotoluene	0.105	0.102		0.10	105	102	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR		0.41	NR	NR	-	NR	
MTBE	NR	NR		ND	NR	NR	-	NR	
Benzene	NR	NR		ND	NR	NR	-	NR	
Toluene	NR	NR		ND	NR	NR	-	NR	
Ethylbenzene	NR	NR		ND	NR	NR	-	NR	
Xylenes	NR	NR		ND	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
2-Fluorotoluene	NR	NR			NR	NR	-	NR	



## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/16/16  
**Date Analyzed:** 7/16/16  
**Instrument:** GC3  
**Matrix:** Water  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123881  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-123881  
 1607570-018AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	59.9	40	60	-	100	70-130
MTBE	ND	8.58	5.0	10	-	86	70-130
Benzene	ND	10.4	0.50	10	-	104	70-130
Toluene	ND	9.33	0.50	10	-	93	70-130
Ethylbenzene	ND	10.6	0.50	10	-	105	70-130
Xylenes	ND	29.1	1.5	30	-	97	70-130
<b>Surrogate Recovery</b>							
aaa-TFT	9.46	9.22		10	95	92	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	64.4	61.2	60	ND	107	102	70-130	5.15	20
MTBE	9.17	9.18	10	ND	92	92	70-130	0	20
Benzene	10.1	10.3	10	ND	101	103	70-130	2.25	20
Toluene	9.88	9.74	10	ND	99	97	70-130	1.46	20
Ethylbenzene	10.2	10.0	10	ND	102	100	70-130	1.32	20
Xylenes	29.2	30.1	30	ND	97	100	70-130	2.85	20
<b>Surrogate Recovery</b>									
aaa-TFT	9.63	9.16	10		96	92	70-130	4.98	20





## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/16/16  
**Date Analyzed:** 7/16/16  
**Instrument:** GC7  
**Matrix:** Water  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123883  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-123883  
 1607570-014AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	58.5	40	60	-	97	70-130
MTBE	ND	8.35	5.0	10	-	83	70-130
Benzene	ND	9.31	0.50	10	-	93	70-130
Toluene	ND	8.96	0.50	10	-	90	70-130
Ethylbenzene	ND	9.24	0.50	10	-	92	70-130
Xylenes	ND	28.4	1.5	30	-	95	70-130
<b>Surrogate Recovery</b>							
aaa-TFT	10.0	10.3		10	100	103	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	58.3	61.0	60	ND	97	102	70-130	4.61	20
MTBE	8.98	9.38	10	ND	84	89	70-130	4.47	20
Benzene	9.47	9.93	10	ND	95	99	70-130	4.76	20
Toluene	8.87	9.38	10	ND	89	94	70-130	5.51	20
Ethylbenzene	9.21	9.72	10	ND	91	96	70-130	5.33	20
Xylenes	28.2	30.2	30	ND	94	101	70-130	6.88	20
<b>Surrogate Recovery</b>									
aaa-TFT	10.4	10.3	10		104	103	70-130	0.584	20



## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/14/16  
**Date Analyzed:** 7/15/16  
**Instrument:** ICP-MS3  
**Matrix:** Soil  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123784  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-123784  
 1607600-001AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	48.1	0.50	50	-	96	75-125
<b>Surrogate Recovery</b>							
Terbium	520	531		500	104	106	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	60.9	63.5	50	13.71	94	100	75-125	4.10	20
<b>Surrogate Recovery</b>									
Terbium	519	560	500		104	112	70-130	7.49	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	14.0	13.71	2.12	20

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/14/16  
**Date Analyzed:** 7/18/16  
**Instrument:** ICP-MS3  
**Matrix:** Soil  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123792  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-123792  
 1607612-008AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	49.1	0.50	50	-	98	75-125
<b>Surrogate Recovery</b>							
Terbium	510	518		500	102	104	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	52.5	52.1	50	2.039	101	100	75-125	0.726	20
<b>Surrogate Recovery</b>									
Terbium	520	526	500		104	105	70-130	1.01	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	ND<2.5	2.039	-	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



## Quality Control Report

**Client:** Geosolve, Inc.  
**Date Prepared:** 7/13/16  
**Date Analyzed:** 7/14/16  
**Instrument:** ICP-MS3  
**Matrix:** Water  
**Project:** 2015-29; 19th Street

**WorkOrder:** 1607612  
**BatchID:** 123731  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS-123731  
 1607564-003AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	50.8	0.50	50	-	102	85-115
<b>Surrogate Recovery</b>							
Terbium	780	789		750	104	105	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	51.9	52.1	50	ND	103	103	75-125	0	20
<b>Surrogate Recovery</b>									
Terbium	822	819	750		110	109	70-130	0.390	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	ND<2.5	ND	-	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.





## Quality Control Report

<b>Client:</b> Geosolve, Inc.	<b>WorkOrder:</b> 1607612
<b>Date Prepared:</b> 7/15/16	<b>BatchID:</b> 123798
<b>Date Analyzed:</b> 7/18/16	<b>Extraction Method:</b> E200.8
<b>Instrument:</b> ICP-MS2	<b>Analytical Method:</b> E200.8
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> 2015-29; 19th Street	<b>Sample ID:</b> MB/LCS-123798 1607618-001BMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	47.8	0.50	50	-	96	85-115
<b>Surrogate Recovery</b>							
Terbium	732	728		750	98	97	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	52.3	53.0	50	5.190	94	96	75-125	1.35	20
<b>Surrogate Recovery</b>									
Terbium	722	743	750		96	99	70-130	2.96	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	ND<25	5.190	-	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1607612

ClientCode: GSP

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Rob Campbell  
Geosolve, Inc.  
1807 Santa Rita Road, Suite D-165  
Pleasanton, CA 94566  
(925) 963-1198    FAX:

Email: rcampbell@geosolve-inc.com  
cc/3rd Party:  
PO:  
ProjectNo: 2015-29; 19th Street

**Bill to:**

Lisa Campbell  
Geosolve, Inc.  
1807 Santa Rita Road, Suite D-165  
Pleasanton, CA 94566  
lcampbell@geosolve-inc.com

**Requested TAT: 5 days;**

**Date Received: 07/14/2016**

**Date Logged: 07/14/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1607612-001	B7-1	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-003	B7-10	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-004	B7-15	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-006	B8-1	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-008	B8-10	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-009	B8-15	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-011	B9-1	Soil	7/14/2016	<input type="checkbox"/>	A												
1607612-013	B9-10	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-014	B9-15	Soil	7/14/2016	<input type="checkbox"/>	A		A										
1607612-016	B-7	Water	7/14/2016	<input type="checkbox"/>		A		B									
1607612-017	B-8	Water	7/14/2016	<input type="checkbox"/>		A		B									
1607612-018	B-9	Water	7/14/2016	<input type="checkbox"/>		A		B									

**Test Legend:**

1	G-MBTEx_S	2	G-MBTEx_W	3	PBMS_TTLC_S	4	PBMS_TTLC_W
5		6		7		8	
9		10		11		12	

**Prepared by: Alexandra Iniguez**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** GEOSOLVE, INC.  
**Project:** 2015-29; 19th Street  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Rob Campbell  
**Contact's Email:** rcampbell@geosolve-inc.com

**Work Order:** 1607612  
**Date Logged:** 7/14/2016

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607612-001A	B7-1	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-002A	B7-5	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	
1607612-003A	B7-10	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-004A	B7-15	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-005A	B7-20	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	
1607612-006A	B8-1	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-007A	B8-5	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	
1607612-008A	B8-10	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-009A	B8-15	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-010A	B8-20	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



## WORK ORDER SUMMARY

**Client Name:** GEOSOLVE, INC.  
**Project:** 2015-29; 19th Street  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Rob Campbell  
**Contact's Email:** rcampbell@geosolve-inc.com

**Work Order:** 1607612  
**Date Logged:** 7/14/2016

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607612-011A	B9-1	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
1607612-012A	B9-5	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	
1607612-013A	B9-10	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-014A	B9-15	Soil	SW6020 (Lead)	1	Acetate Liner	<input type="checkbox"/>	7/14/2016	5 days		<input type="checkbox"/>	
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1607612-015A	B9-20	Soil		1	Acetate Liner	<input type="checkbox"/>	7/14/2016			<input checked="" type="checkbox"/>	
1607612-016A	B-7	Water	SW8021B/8015Bm (G/MBTEX)	3	VOA w/ HCl	<input type="checkbox"/>	7/14/2016	5 days	25%+	<input type="checkbox"/>	
1607612-016B	B-7	Water	E200.8 (Lead)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	7/14/2016	5 days	25%+	<input type="checkbox"/>	
1607612-017A	B-8	Water	SW8021B/8015Bm (G/MBTEX)	3	VOA w/ HCl	<input type="checkbox"/>	7/14/2016	5 days	30%+	<input type="checkbox"/>	
1607612-017B	B-8	Water	E200.8 (Lead)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	7/14/2016	5 days	75%+	<input type="checkbox"/>	
1607612-018A	B-9	Water	SW8021B/8015Bm (G/MBTEX)	3	VOA w/ HCl	<input type="checkbox"/>	7/14/2016	5 days	10%+	<input type="checkbox"/>	
1607612-018B	B-9	Water	E200.8 (Lead)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	7/14/2016	5 days	10%+	<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



1607612



# McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701  
www.mcccampbell.com / main@mcccampbell.com  
Telephone: (877) 252-9262 / Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

**TURN AROUND TIME:** RUSH  1 DAY  2 DAY  3 DAY  5 DAY  10 DAY   
GeoTracker EDF  PDF  EDD  Write On (DW)  EQuIS   
Effluent Sample Requiring "J" flag  UST Clean Up Fund Project ; Claim # \_\_\_\_\_

**Report To:** Rob Campbell **Bill To:** Geosolve, Inc.  
**Company:** Geosolve, Inc.  
1807 Santa Rita Rd # D165 Pleasanton, CA 94586  
**Tele:** (925) 963-1198 **E-Mail:** rcampbell@geosolve-inc.com  
**Project #:** 2015-29 **Project Name:** 19th Street  
**Project Location:** 3019th St, Oakland **Purchase Order#** 2015-29  
**Sampler Signature:** Rob Campbell

### Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING		# Containers	MATRIX										METHOD PRESERVED		BTEX & TPH as Gas (8021/8015) MTE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 820 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 505/ 608 / 8081 (CI Pesticides)	EPA 608 / 8082 PCB's; Aroclors only	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic CI Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)***	LUFT 5 Metals (200.8 / 6020)***	Metals (200.8 / 6020)***	Lab to Filter sample for Dissolved metals analysis	Total Lead	Hold
		Date	Time		Ground Water	Waste Water	Drinking Water	Sea Water	Soil	Air	Sludge	Other	HCL	HNO3	Other																		
B7-1		7.14.16		1					X						X													X					
B7-5				1					X					X														X					
B7-10				1					X					X														X					
B7-15				1					X					X														X					
B7-20				1					X					X														X					
B8-1				1					X					X													X						
B8-5				1					X					X													X						
B8-10				1					X					X													X						
B8-15				1					X					X													X						
B8-20				1					X					X													X						
B9-1				1					X					X													X						

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

\*\*\*If metals are requested for water samples and the water type is not specified on the chain of custody, then MAI will default to metals by E200.8.

Relinquished By: <u>[Signature]</u>	Date: <u>7.14.16</u>	Time: <u>1609</u>	Received By: <u>[Signature]</u>
Relinquished By: <u>[Signature]</u>	Date: <u>7/14</u>	Time: <u>1830</u>	Received By: <u>[Signature]</u>
Relinquished By:	Date:	Time:	Received By:

ICE/# 71 COMMENTS:

GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_

VOAS O&G METALS OTHER HAZARDOUS:  
 PRESERVATION \_\_\_\_\_ pH < 2 \_\_\_\_\_

1 of 2





# McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701  
 www.mcccampbell.com / main@mcccampbell.com  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269

11007612

## CHAIN OF CUSTODY RECORD

**TURN AROUND TIME:** RUSH  1 DAY  2 DAY  3 DAY  5 DAY  10 DAY   
 GeoTracker EDF  PDF  EDD  Write On (DW)  EQUIS   
 Effluent Sample Requiring "J" flag  UST Clean Up Fund Project ; Claim # \_\_\_\_\_

**Report To:** Rob Campbell **Bill To:** Geosolve, Inc.  
**Company:** Geosolve, Inc.  
 1807 Santa Rita Rd #D165 Pleasanton, CA 94566  
**Tele:** (925) 963-1198 **E-Mail:** rcampbell@geosolve.com  
**Project #:** 2015-29 **Project Name:** 19th Street  
**Project Location:** 3015th St. Oakland **Purchase Order#** 2015-29  
**Sampler Signature:** [Signature]

### Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING		# Containers	MATRIX								METHOD PRESERVED			BTEX & TPH as Gas (8021/8015) MTR TPH as Diesel (8015) Total Petroleum Oil & Grease (1664/820 E/B&F) Total Petroleum Hydrocarbons (418.1) EPA 505/608/8081 (CI Pesticides) EPA 608/8082 PCB's; Aroclors only EPA 507/8141 (NP Pesticides) EPA 515/8151 (Acidic CI Herbicides) EPA 524.2/624/8260 (VOCs) EPA 525.2/625/8270 (SVOCs) EPA 8270 SIM/8310 (PAHs/PNAs) CAM 17 Metals (200.8/6020)*** LUFT 5 Metals (200.8/6020)*** Metals (200.8/6020)*** Lab to Filter sample for Dissolved metals analysis	Total Lead	Hold				
		Date	Time		Ground Water	Waste Water	Drinking Water	Sea Water	Soil	Air	Sludge	Other	HCL	HNO <sub>3</sub>	Other							
B9-5		7.14.16		1						X										X		
B9-10		↓		1						X										X		
B9-15				1						X										X		
B9-20				1						X										X		
B-7				4	X							X	X	X	X	X	X	X		X	X	
B-8				4	X							X	X	X	X	X	X	X		X	X	
B-9				4	X							X	X	X	X	X	X	X		X	X	

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

\*\*\* If metals are requested for water samples and the water type is not specified on the chain of custody, then MAI will default to metals by E200.8.

Relinquished By: [Signature]	Date: 7.14.16	Time: 1609	Received By: [Signature]
Relinquished By: [Signature]	Date: 7/14	Time: 1830	Received By: [Signature]
Relinquished By:	Date:	Time:	Received By:

ICE/t° 21  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_  
 VOAS O&G METALS OTHER HAZARDOUS:  
 PRESERVATION \_\_\_\_\_ pH < 2

2 of 2



### Sample Receipt Checklist

Client Name: <b>Geosolve, Inc.</b>	Date and Time Received: <b>7/14/2016 18:30</b>
Project Name: <b>2015-29; 19th Street</b>	Date Logged: <b>7/14/2016</b>
WorkOrder No: <b>1607612</b> Matrix: <u>Soil/Water</u>	Received by: <b>Alexandra Iniguez</b>
Carrier: <u>Benjamin Yslas (MAI Courier)</u>	Logged by: <b>Alexandra Iniguez</b>

**Chain of Custody (COC) Information**

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

**Sample Receipt Information**

Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample/Temp Blank temperature	Temp: 2.1°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

**UCMR3 Samples:**

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: pH adjusted in Lab.