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SECOND QUARTER 2014 GROUNDWATER MONITORING FORMER GROVE STREET WASH RACK SITE 3884 MARTIN LUTHER KING JUNIOR WAY OAKLAND, CALIFORNIA

Prepared for:

Neil Cotter and John Coyle 2847 Arguello Drive Burlingame, California 94010

Prepared by:



URS Corporation
One Montgomery Street, Suite 900
San Francisco, California 94104

IDENTIFICATION FORM

Document Title: Second Quarter 2014 Groundwater Monitoring

Former Grove Street Wash Rack Site 3884 Martin Luther King Junior Way

Oakland, California 94609

Organization Title: URS Corporation

Address: One Montgomery Street, Suite 900

San Francisco, California 94104

Project Manager:Kali FutnaniTitle:Project ManagerTelephone:(415) 243-3878

Date: <u>July 30, 2014</u>

APPROVAL FORM

Prepared for: Neil Cotter and John Coyle

2847 Arguello Drive

Burlingame, California 94010

Prepared by: URS Corporation

One Montgomery Street, Suite 900 San Francisco, California 94104

Signature:

Kali Futnani

Name: Title:

Project Manager

Signature:

Date: <u>July 30, 2014</u>

Name:

Erik Skov, PG, CHG

Title:

Senior Project Geologist



Mr. Neil and Mrs. Mary Cotter 2847 Arguello Drive Burlingame, CA 94010

July, 2014

Ms. Karel Detterman Alameda County Environmental Health Services 1131 Harbor Bay Parkway

Subject: Responsible Party Perjury Statement for the 2014 2nd Quarterly Monitoring and Sampling Report, Former Grove Street Wash Rack Site, 3884 Martin Luther King Jr. Way Oakland, California (Fuel Leak Case RO000027 and Global ID # T0600102106)

Dear Ms. Detterman:

Attached for your review please find the URS 2014 2nd Quarterly Monitoring and Sampling Report with the results of the soil and groundwater investigation at the above referenced site.

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

Sincerely,

Neil and Mary Cotter

may Citt

July 31, 2014

Ms. Karel Detterman Alameda County Environmental Health Services 1131 Harbor Bay Parkway

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

Please contact me at 415-243-3878 or at kali.futnani@urs.com should you have any questions or require any clarifications.

Sincerely,

URS CORPORATION

Kali Futnani

Environmental Scientist/ Project Manager

TABLE OF CONTENTS

			Page
1.0	INTF	RODUCTION	1
2.0	SITE	CONDITIONS	1
2.0	2.1	SITE LOCATION AND HISTORICAL AND CURRENT USES	
	2.2	GEOLOGIC AND HYDROGEOLOGIC CONDITIONS	
	2.3	PREVIOUS ENVIRONMENTAL INVESTIGATIONS	
3.0	GRO	UNDWATER MONITORING	
	3.1	GROUNDWATER SAMPLING AND ANALYSIS	4
	3.2	GROUNDWATER ELEVATION AND FLOW DIRECTION	5
	3.3	GROUNDWATER PHYSICAL PARAMETERS	6
	3.4	GROUNDWATER ANALYTICAL RESULTS	6
4.0	CON	CLUSIONS	7
5.0	REFI	ERENCES	8
TAB	LES		
Table	e 1	Groundwater Elevation Data	
Table	2	Groundwater Physical Parameters	
Table	2 3	Groundwater Analytical Results	
FIGU	URES		
Figur	e 1	Site Location map	
Figur	e 2	Groundwater Elevation Contour Map	
Figur		Groundwater Analytical Results	

APPENDICES

Appendix A Well Purging – Field Quality Measurement Forms Appendix B Analytical Laboratory and Data Validation Reports

1.0 INTRODUCTION

URS is pleased to submit this report detailing the results of the Second Quarter 2014 groundwater monitoring at the former Grove Street Wash Rack Site located at 3884 Martin Luther King Junior Way in Oakland, California (Site). The site location is shown on Figure 1. The Second Quarter 2014 sampling is the third monitoring event at the Site since the groundwater monitoring wells were installed in July, 2013 as part of additional investigation activities required by the Alameda County Department of Environmental Health (ACDEH).

The body of this report includes a discussion of sampling activities, current analytical results, and a comparison to previous groundwater analytical results. The report includes a summary table containing current and previous monitoring data, a groundwater elevation contour map, and a chemical concentration map showing concentrations of detected contaminants. Appendices include well purging records, analytical laboratory and data validation reports and chain of custody records.

2.0 SITE CONDITIONS

2.1 SITE LOCATION AND HISTORICAL AND CURRENT USES

The Site is in a mixed commercial and residential area in the City of Oakland, California. It occupies approximately 10,250 square feet, and is identified as Assessor's Parcel Number (APN) 012-0968-31. The property is zoned for residential use.

The Site is bordered by the following:

- North: 39th Street, followed by a retail business;
- East: the Highway 24 right-of-way, followed by the MacArthur BART station;
- South: a multi-story residential/commercial building; and
- West: Martin Luther King Junior Way (MLK Jr. Way), followed by residential and vacant properties.

The Site is the former location of the Grove Street Wash Rack and Lucky's Auto. Known historical Site uses include the following:

• A gas station operated on the Site in the 1950s and 1960s. Three underground storage tanks (USTs) from the gas station were removed on January 5, 1995.

• An auto body shop operated on the eastern portion of the Site until at least 2004.

A fuel and feed store and fuel yard operated at the adjacent parcel to the south (3860 MLK Jr. Way) from the 1930s to the 1950s. A lumber store and warehouse operated on the parcel in the 1960s, but the business closed and the buildings were demolished in 1971. The adjacent parcel was redeveloped into a multi-story residential and commercial building in 2006.

The Site is currently not in use. The former Site buildings have been removed, and only concrete pads and paved and unpaved areas remain on the Site. A large advertising billboard is located in the southwest corner of the parcel.

2.2 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The lithology encountered beneath the Site during additional site investigation drilling activities consists predominantly of a dark brown to yellow brown gravelly silty clay to greenish-gray and yellowish brown silty clay with sand and some gravel. The primary stratigraphic units at the Site are listed below, with the approximate ranges of depth (bgs) each unit was encountered across the Site.

- 0 to 4 feet bgs: the soil typically consisted of stiff, very dark-brown silty clay.
- 4 to 15 feet bgs: yellowish brown silty clay and mottled yellowish brown and greenish-gray silty clay.
- 15 to 20 feet bgs: Yellowish brown/greenish gray/dark reddish brown lithologies consisting of silty and clayey sands and silts. Some small (typically less than 6 inch) gravel layers were also encountered.

Depth to groundwater in the five newly installed groundwater monitoring wells ranged from 14.42 to 16.89 feet below the top of the well casings. This data was used in conjunction with top of well casing elevation data to generate a groundwater elevation contour map. Based on the July 2013 groundwater elevation data, groundwater beneath the site was interpreted to flow to the west at an approximate gradient of 0.02.

2.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The following timeline summarizes the previous environmental investigations, activities and reporting at the Site:

• 01/05/95: Tanks #1 (650-gallon), #2 (650-gallon), and #3 (500-gallon) were removed from Site. Soil samples were collected under ACDEH observation.

- 01/17/95: Tank Removal Report prepared by Scott Environmental.
- 05/10/95: ACDEH issued a letter requiring additional work to be carried out at the Site to define the extent of contamination.
- 07/17/96: Letter by H₂O GEOL presents laboratory results of a stockpile sample.
- 09/10/02: State Water Resources Control Board (SWRCB) publishes a letter of Notice of Removal from the UST Clean-up Fund. No subsequent data in ACDEH files.
- 9/17/2004: URS issued an Environmental Investigation Report for the Site for Cal-EPA DTSC.
- 02/02/06: ACDEH approved the JCC Work Plan with technical comments.
- 03/10/06: JCC issued a Report of Soil and Groundwater Investigation summarizing the soil and grab groundwater results from eight boreholes for ACDEH.
- 11/12/2006: JCC Issued a Work Plan for Additional Investigation and Remediation at the Site to ACDEH.
- 04/2/2007: ACDEH issues a letter with technical comments on the JCC Work Plan.
- 04/27/2007: JCC sends plans and architect drawings for the development to ACDEH, in response to ACDEH's letter of 4/2/2007.
- 04/08/2008: ACDEH letter to Neil & Mary Cotter. Additional comments on the work plan and request for quarterly monitoring reports.
- 04/14/2008: ACDEH issues Notice of Responsibility. Lillie and Hillary Luckett are named as the primary RPs; Mary and Neil Cotter are named as RPs.
- 05/28/2008: ICES correspondence to ACDEH, informing SCDEH that ICES is the environmental consultant representing Neil Cotter for the 3884 MLK site.
- 07/24/2009: ACDEH sends letter to Neil and Mary Cotter notifying them of the change in groundwater monitoring requirements.
- 12/05/2012: ACDEH issues a request for a Site Investigation Work Plan to Neil & Mary Cotter and to Lillie and Hilary Luckett.
- 06/07/2013: CES letter to SCDEH requesting status of the work plan prepared by URS. CES is the environmental consultant retained by Meta/KKG. Meta Homes is the developer and KKG is responsible for construction management.

- 07/3/2013; URS submits Work Plan for Additional Soil and Groundwater Investigation. Scope of work includes installation of groundwater monitoring wells and additional soil borings.
- 07/8/2013: ACDEH approved URS Work Plan for Additional Soil and Groundwater Investigation.
- 07/9/2013: 7/12/13: URS conducts additional investigation.
- 09/6/2013: URS submits Draft FS/CAP to ACDEH. Document includes results from additional site investigation.
- October 8, 2013 URS submits Final FS/CAP to ACEHD.
- October 10, 2013 URS conducts groundwater monitoring event.
- 07/03/2014: URS submits October 2013 Groundwater Monitoring Report.

A detailed discussion of the prior site investigation findings are presented in the Feasibility Study/Corrective Action Plan prepared for the Site (URS, 2013a).

3.0 GROUNDWATER MONITORING

Groundwater monitoring was conducted at the site on July 10, 2014. Sampling was scheduled to be completed during the last week of June. However, due to unforeseen schedule impacts, sampling was not conducted until July 10, 2014. Groundwater samples were collected from the five on-site groundwater monitoring wells. Groundwater sampling methodologies and analytical results are presented in the following sections.

3.1 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater sampling and analysis was conducted in accordance with the procedures presented in the additional site investigation work plan (URS, 2013b). The wells at the site were purged and sampled using low-flow sampling techniques, to ensure the sampling of representative formation water. Prior to purging and sampling, the depth to groundwater in each of the monitoring wells was measured to the nearest 0.01 foot using an electronic interface probe and recorded in a well-purging record form.

Monitoring wells were purged using a peristaltic pump. The well screen information was used to establish the depth of the pump intake tubing in the monitoring well. Typically, the pump intake

was set at the approximate midpoint of the screened interval. Once the pump intake was set at the target depth, it was secured to ensure it did not move during purging.

The discharge tubing was connected to a YSI 6920 multiprobe flow-through cell. The flow-through cell was equipped with probes to monitor temperature, specific conductivity, pH, oxidation reduction potential (ORP), and dissolved oxygen (DO). Once purging was commenced, depth to groundwater was continually monitored to ensure the pump discharge rate produced a minimal drawdown of the water column. Additionally, the parameters listed above were continually monitored during the purging process and the readings were recorded on well-purging forms at approximate three minute intervals. Copies of the well purging logs are presented in Appendix A of this report.

When the field-measured parameters had sufficiently stabilized, a groundwater sample was collected. Parameters are considered stable when they vary less than \pm 10%. Groundwater samples were collected directly from the discharge tubing from the pump. Samples were collected into laboratory-supplied 40-milliliter glass vials containing hydrochloric acid preservative. Samples were labeled with the project name, date, time of sample collection, and sample identification number, and then stored in an iced cooler prior to transport to the analytical laboratory. Sample chain-of-custody was documented from the time of collection until receipt by the laboratory.

TestAmerica, Inc. of Pleasanton, California analyzed the groundwater samples. TestAmerica, Inc. is a California Department of Public Health certified laboratory. Groundwater samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8260B.

Field QA/QC procedures were followed to ensure field sample quality. A laboratory-supplied trip blank accompanied the samples from the field to the laboratory and was analyzed for the same constituents (TPH-g and BTEX) as the groundwater samples. Additionally, a blind duplicate sample from one of the monitoring wells was also submitted to the laboratory for analysis.

3.2 GROUNDWATER ELEVATION AND FLOW DIRECTION

Groundwater depth measurements were collected from all of the wells prior to purging. An interface probe was used to collect the depth to groundwater measurements and also check for the presence of free phase product on top of the water column. The depth measurements were used in conjunction with the top of well casing (measuring point) elevation data to generate

groundwater surface elevation data. The groundwater elevation data is summarized in Table 1. As indicated, groundwater elevations ranged from 58.75 to 58.13 feet above msl. The data indicate the groundwater elevations are, on average, approximately 0.66 feet higher than the previous sampling event in October 2013. The current groundwater elevation data were assessed to evaluate groundwater flow and gradient. Based on the groundwater elevation measured in July 2014, the interpreted groundwater flow direction is slightly northwest at an average approximate gradient of 0.008. A groundwater elevation contour map is presented on Figure 2. Previous groundwater elevation data from July 2013 indicated groundwater flowing to the west at an average gradient of approximately 0.02 (URS, 2013).

3.3 GROUNDWATER PHYSICAL PARAMETERS

Groundwater physical parameters (conductivity, temperature, pH, ORP, and DO) were measured at regular intervals during the purging process. The final field parameter measurements prior to sampling are summarized in Table 2. The following are ranges of the final parameter measurements from all five monitoring wells at the site prior to sampling: conductivity ranged from 0.795 to 1.379 mS/cm; temperature ranged from 17.5 to 21.5 °C; pH ranged between 6.42 and 7.10 pH units; ORP ranged from -160.3 to 73.8 millivolts (mV); and DO ranged from 0.51 to 1.99 mg/L. Refer to Appendix A for the specific range of parameters in each well.

3.4 GROUNDWATER ANALYTICAL RESULTS

The results of the analyses are summarized in Table 3 and are shown graphically on Figure 3. TPH-g and BTEX were detected in two of the five monitoring wells (MW-2 and MW-4) located at the Site. This is consistent with the detections from previous sampling events at the site conducted in July and October 2013. Concentrations of TPH-g detected were 8,800 μ g/L (MW-2) and 32,000 μ g/L (MW-40; duplicate of MW-4). Concentrations of benzene detected were 4,800 μ g/L (MW-2) and 3,100 μ g/L (MW-40; duplicate of MW-4). Concentrations of ethylbenzene detected were 140 μ g/L (MW-2) and 2,400 μ g/L (MW-40; duplicate of MW-4). Xylene was only detected in sample MW-40, duplicate of MW-4, at a concentration of 6,100 μ g/L. It should be noted that the laboratory reporting limit for xylene was raised to 200 μ g/L due to dilution of the sample for analysis. Additionally, based on the data validation of the laboratory data by a URS senior chemist, the results for TPH-g, benzene, toluene, and ethylbenzene for samples MW-4 and MW-40 (duplicate of MW-4) were flagged as estimated (J) due to the Relative Percent Difference between the primary sample and duplicate sample exceeding 20 percent. There were no detections of TPH-g or BTEX in the Trip Blank. Based on

the data validation, the data was determined to be usable, as qualified, for its intended purpose. None of the data was rejected.

With the exception of xylene in MW-2, all of the concentrations of TPH-g and BTEX detected in monitoring wells MW-2 and MW-4 exceed their respective San Francisco Bay Regional water quality control Board Tier 1 Environmental Screening Level (ESL). However, the laboratory reporting limit for xylene in MW-2 is ten times greater than the ESL value. Additionally, as shown in Table 1, the concentrations of TPH-g and BTEX in monitoring well MW-4 have increased since the last sampling conducted in October, 2013. The reason for the increase is not clear but may be attributable to the overall rise in groundwater elevation at the site since the last sampling round. It should also be noted that the concentration of benzene detected in MW-2 appears to be disproportionately high relative to the concentration of TPH-g. The reason for this is not understood as there were no laboratory quality assurance/quality control failures for the benzene analysis for MW-2 identified during validation of the laboratory data. Copies of the laboratory and data validation reports are presented in Appendix B of this report.

4.0 CONCLUSIONS

The results of the groundwater monitoring to date indicate the presence of TPH-g and BTEX in the groundwater beneath the site. Based on the results of soil and groundwater investigations conducted at the Site to date, the source of the contamination is likely releases from underground storage tanks (USTs) that were previously used at the Site. There is currently no data to indicate that contaminated groundwater has migrated offsite. However ACEH is requiring the installation of three offsite wells to assess the extent of groundwater contamination. These wells will be installed in August 2014 and added to the routine groundwater monitoring program for the Site. The next quarterly groundwater monitoring event will be conducted in September 2014. As discussed with ACEHD, the volatile organic compounds naphthalene, 1,2-dichloroethane, and cis-1,2,-dichloroethene will be added back to the list of analyses.

5.0 REFERENCES

- URS, 2013a. Feasibility Study/Corrective Action Plan, Former Grove Street Wash Rack Site, 3884 Martin Luther King Junior Way, Oakland, California. October 8, 2013.
- URS, 2013b. Site Investigation Work Plan, Former Grove Street Wash Rack Site, 3884 Martin Luther King Junior Way, Oakland, California. July 5, 2013.



Table 1
Groundwater Elevation Data
Former Grove Street Wash Rack Site
July 2014

Well	Date	Well Screen (feet bgs)	Depth to Water (feet)	TOC Elevation (feet msl)	Groundwater Elevation (feet msl)
MW-1	7/18/2013	12-19	14.43	72.83	58.40
MW-1	10/23/2013	12-19	14.99	72.83	57.84
MW-1	7/10/2014	12-19	14.41	72.83	58.42
MW-2	7/18/2013	13-20	14.90	73.16	58.26
MW-2	10/23/2013	13-20	15.07	73.16	58.09
MW-2	7/10/2014	13-20	14.69	73.16	58.47
MW-3	7/18/2013	13-20	15.08	73.54	58.46
MW-3	10/23/2013	13-20	15.45	73.54	58.09
MW-3	7/10/2014	13-20	14.68	73.54	58.86
MW-4	7/18/2013	11-18	14.42	73.18	58.76
MW-4	10/23/2013	11-18	15.15	73.18	58.03
MW-4	7/10/2014	11-18	14.43	73.18	58.75
MW-5	7/18/2013	15-21	16.89	74.92	58.03
MW-5	10/23/2013	15-21	17.65	74.92	57.27
MW-5	7/10/2014	15-21	16.79	74.92	58.13

TOC = top of casing

bgs = below ground surface

msl = mean sea level

Table 2
Groundwater Physical Parameters
Former Grove Street Wash Rack Site
3884 Martin Luther King Junior Way
Oakland, California

Well	Date	Temperature (°Celsius)	Conductivity (mS/cm)	DO (mg/L)	рН	ORP (mV)
MW-1	7/18/2013	20.0	1.129	5.74	6.35	63.4
MW-1	10/23/2013	19.2	1.189	1.45	6.42	-55.4
MW-1	7/10/2014	20.0	1.100	0.81	6.42	33.2
MW-2	7/18/2013	18.7	0.901	3.63	6.62	51.2
MW-2	10/23/2013	18.3	0.852	0.57	6.59	-93.4
MW-2	7/10/2014	19.3	0.878	0.51	6.72	-160.3
MW-3	7/18/2013	18.7	0.799	5.36	6.52	71.9
MW-3	10/23/2013	18.3	1.133	1.84	6.94	213.6
MW-3	7/10/2014	19.6	1.121	1.99	7.10	54.3
MW-4	7/18/2013	20.5	1.438	4.21	6.44	25.1
MW-4	10/23/2013	20.6	1.271	0.92	6.34	-85.3
MW-4	7/10/2014	21.5	1.379	0.65	6.50	-47.9
MW-5	7/18/2013	17.1	0.845	6.17	6.63	78.2
MW-5	10/23/2013	17.0	0.841	0.81	6.56	205.2
MW-5	7/10/2014	17.5	0.795	0.53	6.48	73.8

DO = Dissolved Oxygen

mg/L = milligrams per liter

mS/cm = milliSiemens per centimeter

mV = millivolt

ORP = Oxidation-Reduction Potential

Table 3 Groundwater Analytical Results Former Grove Street Wash Rack Site 3884 Martin Luther King Junior Way Oakland, California

		Analyte							
Well ID	Date	ТРН-д	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	cis-1,2- DCE
MW-1	7/18/2013	< 50	< 0.5	< 0.5	< 0.5	<1.0	<1.0	4.5	< 0.5
MW-1	10/23/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
$MW-10^2$	10/23/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
MW-1	7/10/2014	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
MW-2	7/18/2013	560	220	2.9	4.6	35	<1.0	4.3	< 0.5
MW-2	10/23/2013	9400	8200	200	120	380	NS	NS	NS
MW-2	7/10/2014	8800 J	4800	130	140	<200	NS	NS	NS
MW-3	7/18/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	<1.0	< 0.5	< 0.5
MW-3	10/23/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
MW-3	7/10/2014	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
MW-4	7/18/2013	9500	980	510	270	2600	180	0.7	< 0.50
MW-40 ¹	7/18/2013	13000	1100	930	800	3500	180	0.6	< 0.50
MW-4	10/23/2013	15000	1800	480	1500	3100	NS	NS	NS
MW-4	7/10/2014	25000 J	2500 J	950	1800 J	6400	NS	NS	NS
MW-40 ¹	7/10/2014	32000 J	3100 J	1100	2400 J	6100	NS	NS	NS
MW-5	7/18/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	<1.0	< 0.5	< 0.5
MW-5	10/23/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
MW-5	7/10/2014	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
Trip Blank	7/18/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
Trip Blank	10/23/2013	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
Trip Blank	7/10/2014	< 50.0	< 0.5	< 0.5	< 0.5	<1.0	NS	NS	NS
	ESL	100	1.0	40	30	20	6.1	0.5	6.0

NOTES

All Results Reported in $\mu g/L$ (ppb) unless otherwise stated Values in bold are detections above the laboratory reporting limit

Shaded values exceed the ESL

ESL - San Francisco Bay Regional Water Quality Control Board - 2013 Tier 1 Environmental Screening Levels

¹ Field duplicate of MW-4

² Field duplicate of MW-1





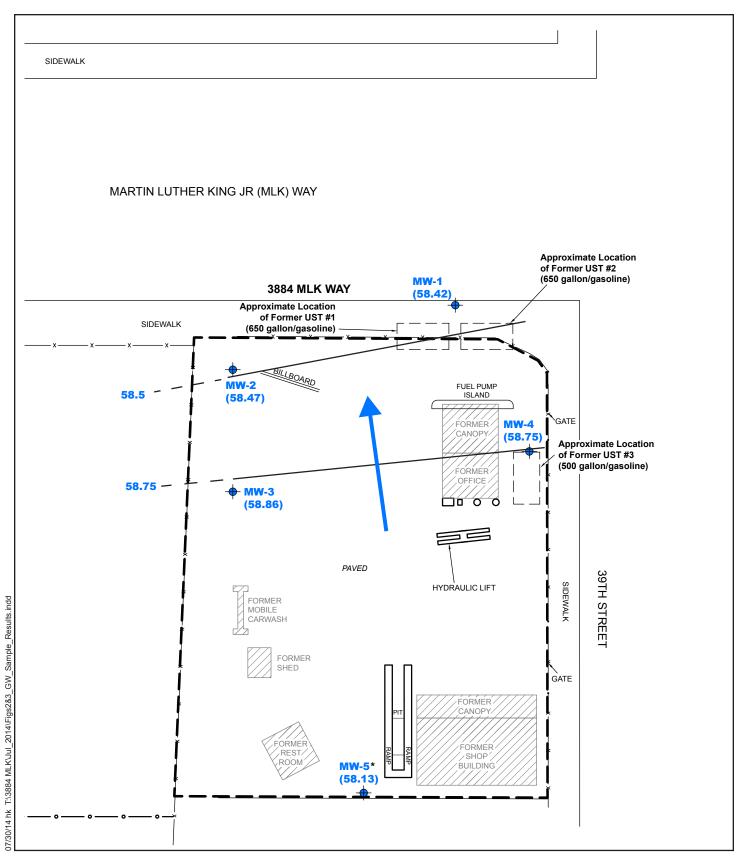
SITE LOCATION MAP

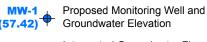
July 2014 28068161

URS

3884 Martin Luther King, Jr. Way Oakland, California







Interpreted Groundwater Flow Direction Approximate Average Gradient = 0.008



GROUNDWATER ELEVATION

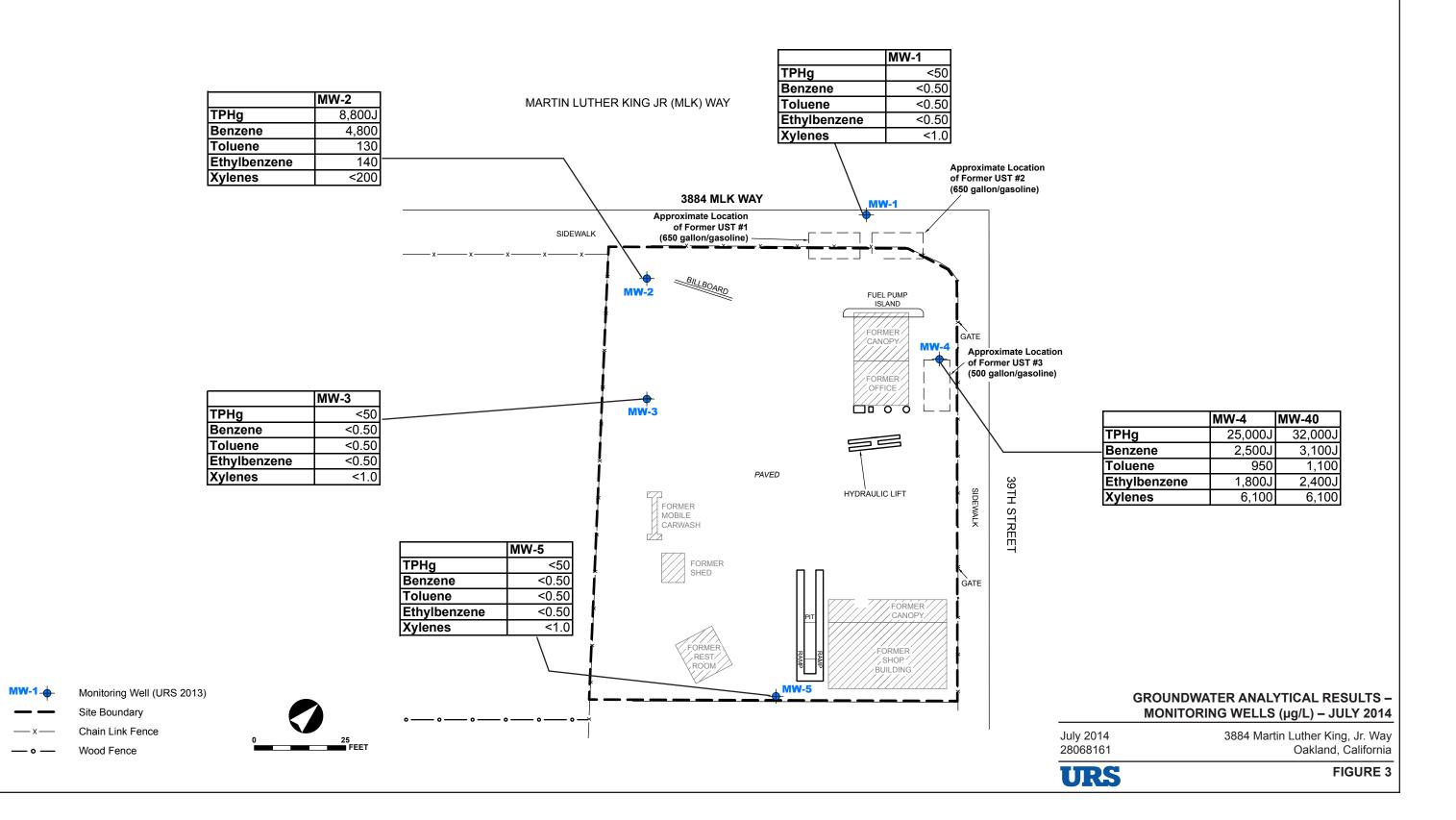
July 2014 28068161

3884 Martin Luther King, Jr. Way Oakland, California



^{*}Elevation data not used for contouring.

SIDEWALK



07/30/14 hk/vsa T:\3884 MLK\Jul_2014\Figs2&3_GW_Sample

APPENDIX A WELL PURGE LOGS

1 Montgomery Street, Suite 300 San Francisco, CA 94104 415.896.5858 Fax 415.882.9261 **GROUNDWATER SAMPLING LOG** SITE NAME AND ADDRESS JOB NUMBER DATE WELL# 3884 MLK 28068161 mw=(PERSONNEL CONDUCTING SAMPLING KF + RB METER USED ☑ YSI6920 ☐ YSI3500 ☐ MP2 □ OTHER :

WELL / WATER	STATUS		
PID READING		DEPTH TO WATER (FROM TOP OF PVC)	14.41
WATER CONDITION	(Color & Odor, Oil Sheen, Etc.)		
	clear; slight TPA-9	Odor	
REMARKS: (Weather	r/Area? Ground surface/Nearby activities/Etc.)		
)	Sunny, Wind Gust	y from South	

FIELD	READINGS	(157 HAVE			W 100			MA TAIL	VE 3 1845
METHO	D: 🚘LOW	/ FLOW							
	□ PUR	GING	TOTAL PURG	ED (GAL) 3L	+ Flow ce	TOTAL	PURGE TIME (MIN) 15	
TIME	WATER LEVEL	PURGE RATE	VOLUME PURGED	TEMP. (C)	рН	CONDUCT. (25C)	TURBIDITY (NTU)	D.O. (mg/L)	REDOX POTENTIAL
1255	1482	2001/4	Λ	20.33	6.60	1107	6.7	2.40	38.6
1253	15.00	11	0.6	20.06	6.49	1098	4.5	1,48	40.5
1301	15:11	lı .	1.22	20.03	6.46	1098	4.8	1,17	40.8
1304	15.19	N	1.81	20.03	6.44	1098	4.8	0.97	40.8
1307	15.27	u	2.41	20.01	6.44	1099	4.3	0.86	38.2
1310	15.32	r	3.0L	20,00	6.42	1160	3,6	0.81	33.2
		¥							
						V			

SAMPLE				
TIME SAMPLE TAKEN	ANALYSES REQUESTED			
1315	DALDE	10U.C	RTEX	
SAMPLE ID	4,200P	11177	12191	
SAIVIPLE ID				
M 1/1 - 2 1		3		
P (VO)				

1 Montgomery Street, Suite J0 San Francisco, CA 94104

GROUNDWATER SAMPLING LOG

41	5.896.5858 Fax	415.882.9261		440		
SI	TE NAME AND	ADDRESS		JOB NUMBER	DATE	WELL#
3884	MLK			28063161	7/10/14	MW-Z
PERSONNEL C	ONDUCTING S	SAMPLING			K-Day Mark	
8 2 191				2		
METER USED	g/xS16920	☐ YSI3500	□ MP2	OTHER:		

WELL / WATER STATUS	
PID READING	DEPTH TO WATER (FROM TOP OF PVC)
WATER CONDITION (Color & Odor, Oil Sheen, Etc.)	Aderate to Strong odor of Sulfur of TPH-9
REMARKS: (Weather/Area? Ground surface/Nearby activities/Etc.)	on the west

FIELD READINGS METHOD: LOW FLOW TOTAL PURGED (GAL) Z. L + Flow GN TOTAL PURGE TIME (MIN) Z									
TIME WATER LEVEL PURGE RATE PURGED TEMP. (C) PH CONDUCT. (25C) (NTU) D.O. (mg/L) 1126 15.25 200 19.77 6.86 881 -0.4 1.00 1131 15.49 11 0.6L 19.37 6.78 877 0.6 0.59 1137 15.76 11 1.8L 19.30 6.75 876 0.7 0.54									
TIME WATER LEVEL PURGE RATE PURGED TEMP. (C) PH CONDUCT. (25C) (NTU) D.O. (mg/L) 1126 15.25 200 19.77 6.86 881 -0.4 1.00 1131 15.49 11 0.6L 19.37 6.78 877 0.6 0.59 1137 15.76 11 1.8L 19.30 6.75 876 0.7 0.54	□ PURGING TOTAL PURGED (GAL) Z L + Flow ON TOTAL PURGE TIME (MIN) 12								
1131 15.49 11 0.6L 19.37 6.78 877 0.0 0.68 1134 15.65 11 1.2L 19.30 6.75 877 0.6 0.59 1137 15.76 11 1.8L 19.30 6.75 876 0.7 0.54	REDOX POTENTIAL								
1134 15.65 " 1.2L 19.30 6.75 877 0.6 0.59 1137 5.76 " 1.8L 19.30 6.75 876 0.7 0.54	-147.8								
1134 15.65 11 1.22 19.30 6.75 877 0.6 0.59 1137 15.76 11 1.82 19.30 6.75 876 0.7 0.54	-153.7								
1137 15.76 11 1.82 19.30 6.75 876 0.7 0.54	-159.4								
	-164.9								
	-160.3								
	W.								

SAMPLE	
TIME SAMPLE TAKEN	ANALYSES REQUESTED
SAMPLE ID MW-Z	8200 BTEX & TPH9

1 Montgomery Street, Suit

GROUNDWATER SAMPLING LOG

San Francisco, CA 94104 415.896.5858 Fax 415.882.9261	- CINCOINE	MAILKOF	um Envo E00				
SITE NAME AND ADDRESS	JOB NUMBER	DATE	WELL#				
3884 MLK	2806816	7/10/14	MW-3				
PERSONNEL CONDUCTING SAMPLING							
METER USED YSI6920 U YSI3500 U MP2	□ OTHER:						
WELL / WATER STATUS			Wall State of the				
PID READING	DEPTH TO WATER (FRO	M TOP OF PVC)	1.68				
WATER CONDITION (Color & Odor, Oil Sheen, Etc.) Clear No odor							
REMARKS: (Weather/Area? Ground surface/Nearby activities/Etc.) Nest (Slight)		a e					

								*	
	READINGS		150 156				Earl Da		
METHO	D: LOW	FLOW							
	□ PUR	GING	TOTAL PURG	ED (GAL) 2,2	21+ Flow	TOTAL	PURGE TIME (MIN)	
TIME	WATER LEVEL	PURGE RATE	VOLUME PURGED	TEMP. (C)	рН	CONDUCT. (25C)	TURBIDITY (NTU)	D.O. (mg/L)	REDOX POTENTIAL
1049	16.32	300		19.11	7.14	1117	2.3	2.37	50,0
1052	15,48	240	O.9L	19.06	7.11	1116	1.7	2.16	50.0
1055	15.66	200	1.626	19.36	7.10	1118	1.6	2.04	54.0
1058	15.81	N	2.221	19.55	7.10	1121	1.9	1.99	64.3
			11						
	-								
							-		
	et.								
		¥							

SAMPLE			
TIME SAMPLE TAKEN	ANALYSES REQUESTED	a	
1605	07103	DD -0	2161
CAMPLEID	8260B	11111 4	10167
SAMPLE ID			
m12-2		UI	
11.4			

1 Montgomery Street, Suite 300 **GROUNDWATER SAMPLING LOG** San Francisco, CA 94104 415.896.5858 Fax 415.882.9261 SITE NAME AND ADDRESS JOB NUMBER WELL# DATE 7/10/14 3884 MLK 28068161 mw-4 PERSONNEL CONDUCTING SAMPLING WF + RB METER USED Z YS16920 ☐ YSI3500 ☐ MP2 □ OTHER:

WELL / WATER STATU	JS		
PID READING		DEPTH TO WATER (FROM TOP OF PVC)	U. u.z
WATER CONDITION (Color &	Odor, Oil Sheen, Etc.)	1 0	14.43
\mathcal{C}	ear; Moderate TP	tog oder	
REWARKS. (Weather/Area?	Ground surface/Nearby activities/Etc.)	Sunny, swindy from	west
)			

	READINGS		1 3 5 5 XXIII			Land File			BELLEVIE
METHO	D: DELOW	FLOW		7/	1 1 1 1 1	i 4			
	□ PUR	GING		SED (GAL) Z.4	L T Plow E				г
TIME	WATER LEVEL	PURGE RATE	VOLUME PURGED	TEMP. (C)	рН	CONDUCT. (25C)	TURBIDITY (NTU)	D.O. (mg/L)	REDOX POTENTIAL
1210	14.90	200		21.70	6.52	1799	5.2	1.01	-19.2
1213	15.15	N	0.62	21.46	6.52	1385	2.7	20.82	-53.4
12/6	15.32	11	1.21	2144	6.51	1390	1.2	0.72	-553
1219	15.50	15	1.81	21.46	6.51	1381	1.0	0.69	-419.3
1222	15.79	i\	2,4/2	21.46	6.50	1379	1.1	0.65	-47.9
•	0								
		Ä							

SAMPLE	
TIME SAMPLE TAKEN	ANALYSES REQUESTED
12:25/ 12:40	2760B
SAMPLE ID	1 0000
mw-4/ mw-40	BTEX THH-9
1	· ·

1 Montgomery Street, Suite J0 San Francisco, CA 94104 415.896.5858 Fax 415.882.9261

₩YS16920

☐ YSI3500

METER USED

GROUNDWATER SAMPLING LOG

SITE NAME AND ADDRESS	JOB NUMBER	DATE	WELL#
3884 MLK	280 8161	7/10/14	mw-5
PERSONNEL CONDUCTING SAMPLING	ST. E. H. KINGS		10 E 4 15 (III 4

□ OTHER:

☐ MP2

WELL / WATER STATUS	
PID READING NA	DEPTH TO WATER (FROM TOP OF PVC) 16.79
WATER CONDITION (Color & Odor, Oil Sheen, Etc.)	No odor
REMARKS: (Weather/Area? Ground surface/Nearby activities/Etc.)	overcast, 60-65° Skight Wind

FIFI D I	READINGS	W 1		1976 INC###	Water to the same of the same	a company			TT x it to
METHO						N CONTRACTOR OF			
	□ PUR		TOTAL PURG	ED (GAL) 3	leL+ Flow	Cell TOTALI	PURGE TIME (MIN) 15	
TIME	WATER LEVEL	PURGE RATE	VOLUME PURGED	TEMP. (C)	рН	CONDUCT. (25C)	TURBIDITY (NTU)	D.O. (mg/L)	REDOX POTENTIAL
959	17.42	Bon /min		17.67	6.62	797 48/1	2.1	091	49.2
1002	17.60	31	.9L	17.59	6.54	797	2.0	0.80	51.8
1005	17.79	240	1.8L	17.50	6.49	795	0.8	0.70	57.3
1008	17,91	11	2.521	17.51	6.49	795	1.0	0,62	65.2
1011	18.09	11	3.241	17.45	6.47	796	0.4	0.56	73.1
1014	1815.13	200	3.96L	17.47	6.48	795	0.3	0.53	73.8
	P7								
1.4.		1							
MO	ample	W/MS/A	150						
	<u>'</u>	, ,							

SAMPLE		
TIME SAMPLE TAKEN	ANALYSES REQUESTED	
IO20	8260B	
mw-5	BTEX THAY	

APPENDIX B ANALYTICAL AND DATA VALIDATION REPORTS

LEVEL III Data Validation Report

PROJECT: 3884 MLK/Oakland

LABORATORY: Test America; Pleasanton, CA

LAB NUMBER: 720-58574

SAMPLES: MW-5, MW-3, MW-2, MW-4, MW-40, MW-1, TAL-SF-TB

MATRIX: Water

Analysis	BTEX + Gasoline Range Organics (GRO) 8260B / CA_LUFT MS
Holding Time	✓
Surrogate Recovery	✓
MS/MSD (MW-5)	✓
LCS (Blank Spike)	✓
Method Blanks	✓
Field Duplicates (MW-4 and MW-40)	Note 1
Trip Blanks	✓
Reporting Limits	Notes 2, 3

✓ – QC criteria were met.

Notes: 1. The following discrepancies were noted in the duplicate pair:

	Con	Concentration		
Compound	MW-4	MW-40	RPD	to use (μg/L)
Benzene	2,500	3,100	21.4	2,800
Ethylbenzene	1,800	2,400	21.8	2,100
GRO	25,000	32,000	29.8	28,500

Reported concentrations in each sample were flagged "J," estimated.

2. In order to quantitate target analytes, the following dilutions were required:

Sample	Dilution Factor
MW-2	200
MW-4	20, 50 for total xylenes
MW-40	100

Reporting limits were increased by the same factor as the dilution.

3. The laboratory revised the original report as requested by URS to provide an estimated concentration of gasoline below the reporting limit of $10,000 \,\mu\text{g/L}$ for sample MW-2. Consequently, that result is flagged "J," estimated.

Summary:

Based on this Level III validation, these data are usable, as qualified, for their intended purpose. None of these data were rejected.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pleasanton 1220 Quarry Lane Pleasanton, CA 94566 Tel: (925)484-1919

TestAmerica Job ID: 720-58574-1

Client Project/Site: 3884 MLK/Oakland

Revision: 1

For:

URS Corporation One Montgomery Street Suite 900 San Francisco, California 94104-4538

Attn: Ms. Kali Futnani

Authorized for release by: 7/22/2014 3:07:10 PM

Afsaneh Salimpour, Senior Project Manager (925)484-1919

afsaneh.salimpour@testamericainc.com

----- LINKS -----

Review your project results through Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: URS Corporation Project/Site: 3884 MLK/Oakland TestAmerica Job ID: 720-58574-1

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
QC Sample Results	13
QC Association Summary	17
Lab Chronicle	18
Certification Summary	20
Method Summary	21
Sample Summary	22
Chain of Custody	23
Receint Checklists	24

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Definitions/Glossary

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
-----------	-----------------------

Quality Control

Relative error ratio

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

QC

RL

RER

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit

Case Narrative

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Job ID: 720-58574-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative 720-58574-1

Comments

No additional comments.

Receipt

The samples were received on 7/10/2014 6:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Client Sample ID: MW-5

No Detections.

Lab Sample ID: 720-58574-1

Client Sample ID: MW-3

Lab Sample ID: 720-58574-2

No Detections.

Client Sample ID: MW-2 Lab Sample ID: 720-58574-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4800		100	50	ug/L	200	_	8260B/CA_LUFT MS	Total/NA
Ethylbenzene	140		100	26	ug/L	200		8260B/CA_LUFT MS	Total/NA
Toluene	130		100	34	ug/L	200		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	8800	J	10000	4200	ug/L	200		8260B/CA_LUFT MS	Total/NA

Client Sample ID: MW-4 Lab Sample ID: 720-58574-4

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac	O Method	Prep Type
Benzene	2500	10	ug/L	20	8260B/CA_LUFT	Total/NA
					MS	
Ethylbenzene	1800	10	ug/L	20	8260B/CA_LUFT	Total/NA
					MS	
Toluene	950	10	ug/L	20	8260B/CA_LUFT	Total/NA
					MS	
Xylenes, Total	6400	50	ug/L	50	8260B/CA_LUFT	Total/NA
					MS	
Gasoline Range Organics (GRO)	25000	1000	ug/L	20	8260B/CA_LUFT	Total/NA
-C5-C12					MS	

Client Sample ID: MW-40 Lab Sample ID: 720-58574-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3100		50		ug/L	100	_	8260B/CA_LUFT MS	Total/NA
Ethylbenzene	2400		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Toluene	1100		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	6100		100		ug/L	100		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	32000		5000		ug/L	100		8260B/CA_LUFT MS	Total/NA

Client Sample ID: MW-1 Lab Sample ID: 720-58574-6

No Detections.

Client Sample ID: TAL-SF-TB Lab Sample ID: 720-58574-7

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

7/22/2014

Page 5 of 24

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Lab Sample ID: 720-58574-1

Matrix: Water

Client Sample ID: MW-5 Date Collected: 07/10/14 10:20 Date Received: 07/10/14 18:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/11/14 13:10	1
Ethylbenzene	ND		0.50		ug/L			07/11/14 13:10	1
Toluene	ND		0.50		ug/L			07/11/14 13:10	1
Xylenes, Total	ND		1.0		ug/L			07/11/14 13:10	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/11/14 13:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		67 - 130			-		07/11/14 13:10	1
1,2-Dichloroethane-d4 (Surr)	95		72 - 130					07/11/14 13:10	1
Toluene-d8 (Surr)	105		70 - 130					07/11/14 13:10	1

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Lab Sample ID: 720-58574-2

Matrix: Water

Date Collected: 07/10/14 11:05 Date Received: 07/10/14 18:50

Client Sample ID: MW-3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/11/14 13:39	1
Ethylbenzene	ND		0.50		ug/L			07/11/14 13:39	1
Toluene	ND		0.50		ug/L			07/11/14 13:39	1
Xylenes, Total	ND		1.0		ug/L			07/11/14 13:39	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/11/14 13:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		67 - 130			-		07/11/14 13:39	1
1,2-Dichloroethane-d4 (Surr)	94		72 - 130					07/11/14 13:39	1
Toluene-d8 (Surr)	103		70 - 130					07/11/14 13:39	1

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Client Sample ID: MW-2

Lab Sample ID: 720-58574-3

Matrix: Water

Date Collected: 07/10/14 11:45 Date Received: 07/10/14 18:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4800		100	50	ug/L			07/11/14 14:08	200
Ethylbenzene	140		100	26	ug/L			07/11/14 14:08	200
Toluene	130		100	34	ug/L			07/11/14 14:08	200
Xylenes, Total	ND		200	98	ug/L			07/11/14 14:08	200
Gasoline Range Organics (GRO) -C5-C12	8800	J	10000	4200	ug/L			07/11/14 14:08	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		67 - 130					07/11/14 14:08	200
1,2-Dichloroethane-d4 (Surr)	94		72 - 130					07/11/14 14:08	200
Toluene-d8 (Surr)	103		70 - 130					07/11/14 14:08	200

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

Client Sample ID: MW-4

Date Collected: 07/10/14 12:25

Date Received: 07/10/14 18:50

1,2-Dichloroethane-d4 (Surr)

Toluene-d8 (Surr)

Toluene-d8 (Surr)

TestAmerica Job ID: 720-58574-1

Lab Sample ID: 720-58574-4

07/14/14 16:01

07/11/14 14:38

07/14/14 16:01

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2500		10		ug/L			07/11/14 14:38	20
Ethylbenzene	1800		10		ug/L			07/11/14 14:38	20
Toluene	950		10		ug/L			07/11/14 14:38	20
Xylenes, Total	6400		50		ug/L			07/14/14 16:01	50
Gasoline Range Organics (GRO) -C5-C12	25000		1000		ug/L			07/11/14 14:38	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		67 - 130			-		07/11/14 14:38	20
4-Bromofluorobenzene	103		67 - 130					07/14/14 16:01	50
1,2-Dichloroethane-d4 (Surr)	93		72 - 130					07/11/14 14:38	20

72 - 130

70 - 130

70 - 130

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TestAmerica Pleasanton

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Client Sample ID: MW-40

Date Collected: 07/10/14 12:40 Date Received: 07/10/14 18:50 Lab Sample ID: 720-58574-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3100		50		ug/L			07/11/14 15:07	100
Ethylbenzene	2400		50		ug/L			07/11/14 15:07	100
Toluene	1100		50		ug/L			07/11/14 15:07	100
Xylenes, Total	6100		100		ug/L			07/11/14 15:07	100
Gasoline Range Organics (GRO) -C5-C12	32000		5000		ug/L			07/11/14 15:07	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		67 - 130			-		07/11/14 15:07	100
1,2-Dichloroethane-d4 (Surr)	93		72 - 130					07/11/14 15:07	100
Toluene-d8 (Surr)	104		70 - 130					07/11/14 15:07	100

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Lab Sample ID: 720-58574-6

Matrix: Water

Date Collected: 07/10/14 13:15 Date Received: 07/10/14 18:50

Client Sample ID: MW-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/11/14 15:36	1
Ethylbenzene	ND		0.50		ug/L			07/11/14 15:36	1
Toluene	ND		0.50		ug/L			07/11/14 15:36	1
Xylenes, Total	ND		1.0		ug/L			07/11/14 15:36	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/11/14 15:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		67 - 130			-		07/11/14 15:36	1
1,2-Dichloroethane-d4 (Surr)	95		72 - 130					07/11/14 15:36	1
Toluene-d8 (Surr)	104		70 - 130					07/11/14 15:36	1

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Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Client Sample ID: TAL-SF-TB

Lab Sample ID: 720-58574-7 Date Collected: 07/10/14 00:00

Matrix: Water

Date Received: 07/10/14 18:50

Method: 8260B/CA_LUFTMS - 82	60B / CA LUFT	MS							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/11/14 11:43	1
Ethylbenzene	ND		0.50		ug/L			07/11/14 11:43	1
Toluene	ND		0.50		ug/L			07/11/14 11:43	1
Xylenes, Total	ND		1.0		ug/L			07/11/14 11:43	1
Gasoline Range Organics (GRO)	ND		50		ug/L			07/11/14 11:43	1
-C5-C12									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		67 - 130			-		07/11/14 11:43	1
1,2-Dichloroethane-d4 (Surr)	94		72 - 130					07/11/14 11:43	1
Toluene-d8 (Surr)	104		70 - 130					07/11/14 11:43	1

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-162818/4

Matrix: Water

Analysis Batch: 162818

Client Sample ID: Method Blank

Prep Type: Total/NA

ı		MB	MB							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	ND		0.50	0.25	ug/L			07/11/14 08:47	1
ı	Ethylbenzene	ND		0.50	0.13	ug/L			07/11/14 08:47	1
	Toluene	ND		0.50	0.17	ug/L			07/11/14 08:47	1
١	Xylenes, Total	ND		1.0	0.49	ug/L			07/11/14 08:47	1
	Gasoline Range Organics (GRO)	ND		50	21	ug/L			07/11/14 08:47	1
	-C5-C12									

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		67 - 130		07/11/14 08:47	1
1,2-Dichloroethane-d4 (Surr)	89		72 - 130		07/11/14 08:47	1
Toluene-d8 (Surr)	103		70 - 130		07/11/14 08:47	1

Lab Sample ID: LCS 720-162818/5

Matrix: Water

Analysis Batch: 162818

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Result Qualifier Analyte Added Unit %Rec Limits 25.0 Benzene 27.0 ug/L 108 79 - 130 Ethylbenzene 25.0 26.1 ug/L 104 80 - 120 Toluene 25.0 25.5 ug/L 102 78 - 120 m-Xylene & p-Xylene 25.0 26.0 ug/L 104 70 - 142 o-Xylene 25.0 ug/L 70 - 130 26.1 104

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		67 - 130
1,2-Dichloroethane-d4 (Surr)	92		72 - 130
Toluene-d8 (Surr)	104		70 - 130

Lab Sample ID: LCS 720-162818/7

Matrix: Water

Analysis Batch: 162818

Client Sample ID: Lab Control Sample
Pren Type: Total/NA

Spike LCS LCS %Rec. Added Result Qualifier Unit Limits 500 544 109 62 _ 120 ug/L

Gasoline Range Organics (GRO) -C5-C12

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	92		72 - 130
Toluene-d8 (Surr)	104		70 - 130

Lab Sample ID: LCSD 720-162818/6

Matrix: Water

Analysis Batch: 162818

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	25.0	26.7		ug/L		107	79 - 130	1	20
Ethylbenzene	25.0	25.8		ug/L		103	80 - 120	1	20

TestAmerica Pleasanton

Page 13 of 24

Client: URS Corporation Project/Site: 3884 MLK/Oakland TestAmerica Job ID: 720-58574-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-162818/6

Matrix: Water

Analysis Batch: 162818

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Toluene	25.0	25.6		ug/L		102	78 - 120	0	20	
m-Xylene & p-Xylene	25.0	25.7		ug/L		103	70 - 142	1	20	
o-Xylene	25.0	25.5		ug/L		102	70 - 130	2	20	

LCSD LCSD %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene 94 67 - 130 1,2-Dichloroethane-d4 (Surr) 89 72 - 130 Toluene-d8 (Surr) 104 70 - 130

Lab Sample ID: LCSD 720-162818/8 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Batch: 162818

Spike LCSD LCSD %Rec. RPD Added Result Qualifier Limits RPD Limit 500 541 108 62 _ 120 Gasoline Range Organics (GRO) ug/L

-C5-C12

	LCSD	LUJD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	91		72 - 130
Toluene-d8 (Surr)	103		70 - 130

ICSD ICSD

Lab Sample ID: 720-58574-1 MS **Client Sample ID: MW-5 Matrix: Water** Prep Type: Total/NA

Analysis Batch: 162818

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		25.0	25.8		ug/L	_	103	60 - 140	
Ethylbenzene	ND		25.0	24.8		ug/L		99	60 - 140	
Toluene	ND		25.0	24.2		ug/L		97	60 - 140	
m-Xylene & p-Xylene	ND		25.0	24.7		ug/L		99	60 - 140	
o-Xylene	ND		25.0	25.0		ug/L		100	60 - 140	

MS MS Surrogate %Recovery Qualifier Limits 67 - 130 4-Bromofluorobenzene 98 92 72 - 130 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) 105 70 - 130

Lab Sample ID: 720-58574-1 MSD Client Sample ID: MW-5 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 162818

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		25.0	25.4		ug/L		102	60 - 140	2	20
Ethylbenzene	ND		25.0	24.1		ug/L		96	60 - 140	3	20
Toluene	ND		25.0	24.0		ug/L		96	60 - 140	1	20
m-Xylene & p-Xylene	ND		25.0	24.3		ug/L		97	60 - 140	2	20
o-Xylene	ND		25.0	24.4		ug/L		98	60 - 140	3	20

TestAmerica Pleasanton

Page 14 of 24

7/22/2014

Client: URS Corporation Project/Site: 3884 MLK/Oakland

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: 720-58574-1 MSD

Matrix: Water

Analysis Batch: 162818

Client Sample ID: MW-5 Prep Type: Total/NA

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	92		72 - 130
Toluene-d8 (Surr)	105		70 - 130

Lab Sample ID: MB 720-162907/5

Matrix: Water

Analysis Batch: 162907

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Benzene	ND ND	0.50	ug/L		07/14/14 09:20	1
Ethylbenzene	ND	0.50	ug/L		07/14/14 09:20	1
Toluene	ND	0.50	ug/L		07/14/14 09:20	1
Xylenes, Total	ND	1.0	ug/L		07/14/14 09:20	1
Gasoline Range Organics (GRO) -C5-C12	ND	50	ug/L		07/14/14 09:20	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepar	red Analyzed	Dil Fac
4-Bromofluorobenzene	97	67 - 130		07/14/14 09:20	1
1,2-Dichloroethane-d4 (Surr)	97	72 - 130		07/14/14 09:20	1
Toluene-d8 (Surr)	107	70 - 130		07/14/14 09:20	1

Lab Sample ID: LCS 720-162907/6

Matrix: Water

Analysis Batch: 162907

Client Sample ID	: Lab Control Sample
	Prep Type: Total/NA

Spike	LCS	LCS				%Rec.	
Added	Result	Qualifier	Unit	D	%Rec	Limits	
25.0	28.5		ug/L		114	79 - 130	
25.0	25.3		ug/L		101	80 - 120	
25.0	24.2		ug/L		97	78 - 120	
25.0	25.0		ug/L		100	70 - 142	
25.0	25.1		ug/L		100	70 - 130	
	Added 25.0 25.0 25.0 25.0	Added Result 25.0 28.5 25.0 25.3 25.0 24.2 25.0 25.0	Added Result Qualifier 25.0 28.5 25.0 25.3 25.0 24.2 25.0 25.0	Added Result Qualifier Unit 25.0 28.5 ug/L 25.0 25.3 ug/L 25.0 24.2 ug/L 25.0 25.0 ug/L	Added Result Qualifier Unit D 25.0 28.5 ug/L 25.0 25.3 ug/L 25.0 24.2 ug/L 25.0 25.0 ug/L	Added Result Qualifier Unit D %Rec 25.0 28.5 ug/L 114 25.0 25.3 ug/L 101 25.0 24.2 ug/L 97 25.0 25.0 ug/L 100	Added Result Qualifier Unit D %Rec Limits 25.0 28.5 ug/L 114 79 - 130 25.0 25.3 ug/L 101 80 - 120 25.0 24.2 ug/L 97 78 - 120 25.0 25.0 ug/L 100 70 - 142

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	102		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		72 - 130
Toluene-d8 (Surr)	108		70 - 130

Lab Sample ID: LCS 720-162907/8

Matrix: Water

Analysis Batch: 162907

Client Sample ID: Lab Control Sample Prep Type: Total/NA

		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)	 	500	594		ug/L		119	62 - 120	

-C5-C12

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	104		67 - 130

TestAmerica Pleasanton

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TestAmerica Job ID: 720-58574-1

Client: URS Corporation Project/Site: 3884 MLK/Oakland

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-162907/8

Lab Sample ID: LCSD 720-162907/7

Matrix: Water

Analysis Batch: 162907

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		72 - 130
Toluene-d8 (Surr)	110		70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 162907

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier I	Unit C	%Rec	Limits	RPD	Limit
Benzene	25.0	28.0		ug/L	112	79 - 130	2	20
Ethylbenzene	25.0	25.3	ι	ug/L	101	80 - 120	0	20
Toluene	25.0	24.4	ι	ug/L	98	78 - 120	1	20
m-Xylene & p-Xylene	25.0	24.9	l	ug/L	100	70 - 142	0	20
o-Xylene	25.0	25.0	ι	ug/L	100	70 - 130	0	20

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	103		67 - 130
1,2-Dichloroethane-d4 (Surr)	94		72 - 130
Toluene-d8 (Surr)	108		70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 162907

Lab Sample ID: LCSD 720-162907/9

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)	500	588		ug/L		118	62 - 120	1	20	

-C5-C12

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	103		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		72 - 130
Toluene-d8 (Surr)	110		70 - 130

TestAmerica Pleasanton

QC Association Summary

Client: URS Corporation Project/Site: 3884 MLK/Oakland TestAmerica Job ID: 720-58574-1

GC/MS VOA

Analysis Batch: 162818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-58574-1	MW-5	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-1 MS	MW-5	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-1 MSD	MW-5	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-2	MW-3	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-3	MW-2	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-4	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-5	MW-40	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-6	MW-1	Total/NA	Water	8260B/CA_LUFT MS	
720-58574-7	TAL-SF-TB	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-162818/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-162818/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-162818/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-162818/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-162818/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 162907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-58574-4	MW-4	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-162907/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-162907/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-162907/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-162907/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
MB 720-162907/5	Method Blank	Total/NA	Water	8260B/CA_LUFT	
				MS	

Page 17 of 24

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

Client Sample ID: MW-5 Lab Sample ID: 720-58574-1 Matrix: Water

Date Collected: 07/10/14 10:20

Date Received: 07/10/14 18:50

Batch Dilution Batch Batch Prepared Factor Prep Type Type Method Run Number or Analyzed Analyst Lab Total/NA Analysis 8260B/CA LUFTMS 162818 07/11/14 13:10 PDR TAL PLS

Client Sample ID: MW-3 Lab Sample ID: 720-58574-2

Date Collected: 07/10/14 11:05 **Matrix: Water**

Date Received: 07/10/14 18:50

Batch Batch Dilution Batch Prepared or Analyzed Method Factor Prep Type Type Run Number Analyst Lab Total/NA 8260B/CA_LUFTMS 162818 07/11/14 13:39 PDR TAL PLS Analysis

Client Sample ID: MW-2 Lab Sample ID: 720-58574-3

Date Collected: 07/10/14 11:45 Matrix: Water

Date Received: 07/10/14 18:50

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst 200 PDR Total/NA Analysis 8260B/CA LUFTMS 162818 07/11/14 14:08 TAL PLS

Client Sample ID: MW-4 Lab Sample ID: 720-58574-4 **Matrix: Water**

Date Collected: 07/10/14 12:25

Date Received: 07/10/14 18:50

Batch Batch Dilution Batch Prepared Prep Type Туре Method Factor Number or Analyzed Run Analyst Lab Total/NA Analysis 8260B/CA_LUFTMS 20 162818 07/11/14 14:38 PDR TAL PLS Total/NA Analysis 8260B/CA_LUFTMS 50 162907 07/14/14 16:01 PDR TAL PLS

Client Sample ID: MW-40 Lab Sample ID: 720-58574-5

Date Collected: 07/10/14 12:40 Matrix: Water Date Received: 07/10/14 18:50

Batch Dilution Batch Batch Prepared Factor Prep Type Type Method Run Number or Analyzed Analyst Lab Total/NA Analysis 8260B/CA_LUFTMS 100 162818 07/11/14 15:07 PDR TAL PLS

Client Sample ID: MW-1 Lab Sample ID: 720-58574-6

Date Collected: 07/10/14 13:15 **Matrix: Water**

Date Received: 07/10/14 18:50

Batch Batch Dilution Batch Prepared Method Prep Type Type Run Factor Number or Analyzed Analyst Lab Total/NA 8260B/CA_LUFTMS 162818 07/11/14 15:36 PDR TAL PLS Analysis

7/22/2014

Lab Chronicle

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

Client Sample ID: TAL-SF-TB

TestAmerica Job ID: 720-58574-1

Lab Sample ID: 720-58574-7

Matrix: Water

Date Collected: 07/10/14 00:00 Date Received: 07/10/14 18:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	162818	07/11/14 11:43	PDR	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program		EPA Region	Certification ID	Expiration Date	
California	State Progr	State Program		2496	01-31-16	
Analysis Method	Prep Method	Matrix	Analyt	e		

Method Summary

Client: URS Corporation

Project/Site: 3884 MLK/Oakland

TestAmerica Job ID: 720-58574-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTM	8260B / CA LUFT MS	SW846	TAL PLS
S			

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

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Sample Summary

Client: URS Corporation

TestAmerica Job ID: 720-58574-1 Project/Site: 3884 MLK/Oakland

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-58574-1	MW-5	Water	07/10/14 10:20	07/10/14 18:50
720-58574-2	MW-3	Water	07/10/14 11:05	07/10/14 18:50
720-58574-3	MW-2	Water	07/10/14 11:45	07/10/14 18:50
720-58574-4	MW-4	Water	07/10/14 12:25	07/10/14 18:50
720-58574-5	MW-40	Water	07/10/14 12:40	07/10/14 18:50
720-58574-6	MW-1	Water	07/10/14 13:15	07/10/14 18:50
720-58574-7	TAL-SF-TB	Water	07/10/14 00:00	07/10/14 18:50

Login Sample Receipt Checklist

Client: URS Corporation Job Number: 720-58574-1

Login Number: 58574 List Source: TestAmerica Pleasanton

List Number: 1

Creator: Gonzales, Justinn

oroatori oonzaroo, oaotiiii		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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