

US EPA ARCHIVE DOCUMENT



Deigan & Associates, LLC
Environmental Consultants

100 S. Genesee St.
Waukegan, Illinois 60085
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Ms. Jill Groboski (LU-9J) via email January 6, 2009
Project Manager
US EPA Region V
Land and Chemicals Division
Remediation and Reuse Branch
Corrective Action Section
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

Re: Description of Current Conditions (DOCC) Report Addendum 2
2nd Round of Groundwater Sampling/Analysis
Lake Shore Foundry, Waukegan, IL. (ILR000 1110591)

Dear Ms. Groboski:

Enclosed please find the results of an additional round of groundwater sampling and analysis at the above-referenced property. Table 1 provides a summary table comparing the June and December 2008 sampling events for total and dissolved metals against the applicable Illinois groundwater standards. This data continues to demonstrate that groundwater quality is stable at the site and consistent with area-wide groundwater quality. The Lakeshore Foundry site is positioned down gradient of several brownfield sites which are undergoing remediation for redevelopment, but have contributed to groundwater conditions. Figure 1 shows the location of the wells on the property and groundwater flow direction as measured in December 2008.

As requested, in addition to the new groundwater data, we have also enclosed well construction diagrams for the up gradient, off-site wells. The up gradient well on the northern Diamond Scrap Yard property (MW-10) has been abandoned to facilitate soil remediation and thus could not be sampled. Past data from that well was provided in our DOCC Report Addendum (August 2008). New groundwater data was collected in December 2008 at the off-site up gradient well at the former Chicago Rubber Co. property (aka Ampsky Redevelopment site).

Please contact me with any comments or questions.

Sincerely,
Deigan & Associates, LLC

Ms. Groboski
USEPA, Region V
January 6, 2008

Gary J. Deigan
Principal

Enclosures
cc:
Lake Shore Foundry

Table 1
Lake Shore Foundry June and December 2008 Groundwater Analytical Summary

Method	Analyte	IEPA Groundwater Standard ^a		LSF-MW-01		LSF-MW-02		LSF-MW-03		LSF-MW-04		Existing South Background Well	
		Class I	Class II	June	December	June	December	June	December	June	December	June	December
		mg/L	mg/L	7.56	7.39	7.68	7.19	9.01	7.52	8.23	7.52	7.3	7.31
6010B	Antimony	0.006	0.024	NA	0.0083	NA	0.0084	NA	<0.020	NA	<0.020	NA	<0.020
6020	Antimony	0.006	0.024	0.013	0.00084	0.011	0.0055	0.0035	0.0018	0.0098	0.0036	0.00065	<0.0020
6020-Diss	Antimony, Diss	0.006	0.024	0.0014	<0.0020	0.0054	0.0036	0.0030	0.0016	0.0092	0.0035	<0.0020	<0.0020
6010B	Arsenic	0.05	0.2	0.17	0.0065	0.025	0.0037	0.012	0.0029	0.049	0.013	<0.010	0.0062
6010B-Diss	Arsenic, Diss	0.05	0.2	<0.010	<0.010	<0.010	<0.010	0.0039	<0.010	0.041	0.0034	<0.010	<0.010
6010B	Barium	2	2	0.59	0.13	0.47	0.17	0.22	0.10	0.10	0.16	0.21	0.12
6010B-Diss	Barium, Diss	2	2	0.058	0.095	0.088	0.13	0.052	0.055	0.038	0.055	0.072	0.055
6010B	Beryllium	0.004	0.5	0.0035	0.00014	0.0020	0.00029	0.00096	0.00034	0.00051	0.00016	<0.0040	<0.0040
6010B-Diss	Beryllium, Diss	0.004	0.5	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
6010B	Cadmium	0.005	0.05	0.0098	<0.0020	0.017	0.0092	0.0022	<0.0020	<0.0020	<0.0020	0.00058	<0.0020
6010B-Diss	Cadmium, Diss	0.005	0.05	<0.0020	<0.0020	<0.0020	0.0050	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
6010B	Chromium	0.1	1	0.13	0.0073	0.11	0.027	0.021	0.015	0.015	0.0089	0.0034	0.0091
6010B-Diss	Chromium, Diss	0.1	1	<0.010	<0.010	0.0017	<0.010	0.0017	<0.010	0.0019	<0.010	<0.010	<0.010
6010B	Cobalt	1	1	0.10	0.0042	0.035	0.014	0.0095	0.0071	0.0032	0.0035	0.0056	0.0062
6010B-Diss	Cobalt, Diss	1	1	0.0048	0.0011	0.0019	0.0097	<0.0050	0.0018	<0.0050	<0.0050	<0.0050	0.0013
6010B	Copper	0.65	0.65	2.4	0.056	9.0	1.7	3.9	0.92	0.47	0.16	0.016	0.014
6010B-Diss	Copper, Diss	0.65	0.65	0.0038	0.0015	0.065	0.44	0.014	0.19	0.018	0.0074	0.0052	0.0031
6010B	Lead	0.0075	0.1	1.2	0.039	2.8	0.26	0.48	0.089	0.11	0.030	0.0078	0.010
6010B-Diss	Lead, Diss	0.0075	0.1	<0.0050	0.0026	0.0035	0.0062	<0.0050	0.0030	0.0022	0.0024	<0.0050	0.0042
7470A	Mercury	0.002	0.01	0.00037	<0.00020	0.0019	0.00022	0.00028	<0.00020	0.00016	<0.00020	0.00021	<0.00020
7470A-Diss	Mercury, Diss	0.002	0.01	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
6010B	Nickel	0.1	2	0.27	0.0068	0.20	0.097	0.077	0.038	0.027	0.0092	0.0085	0.010
6010B-Diss	Nickel, Diss	0.1	2	0.021	<0.010	0.026	0.074	0.0033	0.014	0.020	<0.010	0.0026	<0.010
6010B	Selenium	0.05	0.05	0.0091	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
6010B-Diss	Selenium, Diss	0.05	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
6010B	Silver	0.05	--	0.0026	<0.0050	0.0025	0.0022	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
6010B-Diss	Silver, Diss	0.05	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
6010B	Thallium	0.002	0.02	NA	<0.010	NA	<0.010	NA	<0.010	NA	<0.010	NA	<0.010
6020	Thallium	0.002	0.02	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
6020-Diss	Thallium, Diss	0.002	0.02	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
6010B	Tin	22 ^b	--	0.13	0.0043	0.14	0.037	0.014	0.0056	0.0066	<0.020	<0.020	<0.020
6010B-Diss	Tin, Diss	22 ^b	--	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
6010B	Vanadium	0.049	0.1	0.16	0.0090	0.055	0.014	0.020	0.016	0.011	0.0080	0.0037	0.014
6010B-Diss	Vanadium, Diss	0.049	0.1	0.0024	<0.0050	<0.0050	<0.0050	0.0032	<0.0050	0.0040	0.0013	0.0013	<0.0050
6010B	Zinc	5	10	2.2	0.063	5.3	2.2	1.7	0.48	0.26	0.12	0.039	0.039
6010B-Diss	Zinc, Diss	5	10	0.022	0.020	0.099	1.6	0.0038	0.14	0.018	0.015	0.011	0.0089

^a Groundwater standards(35 IAC Part 620) based on total metals analysis.

^b USEPA (September 2008) Regional Screening Level for tap water.

NA = Not analyzed.

-- No standard available.

Exceeds Class I standard.

Exceeds Class II standard.

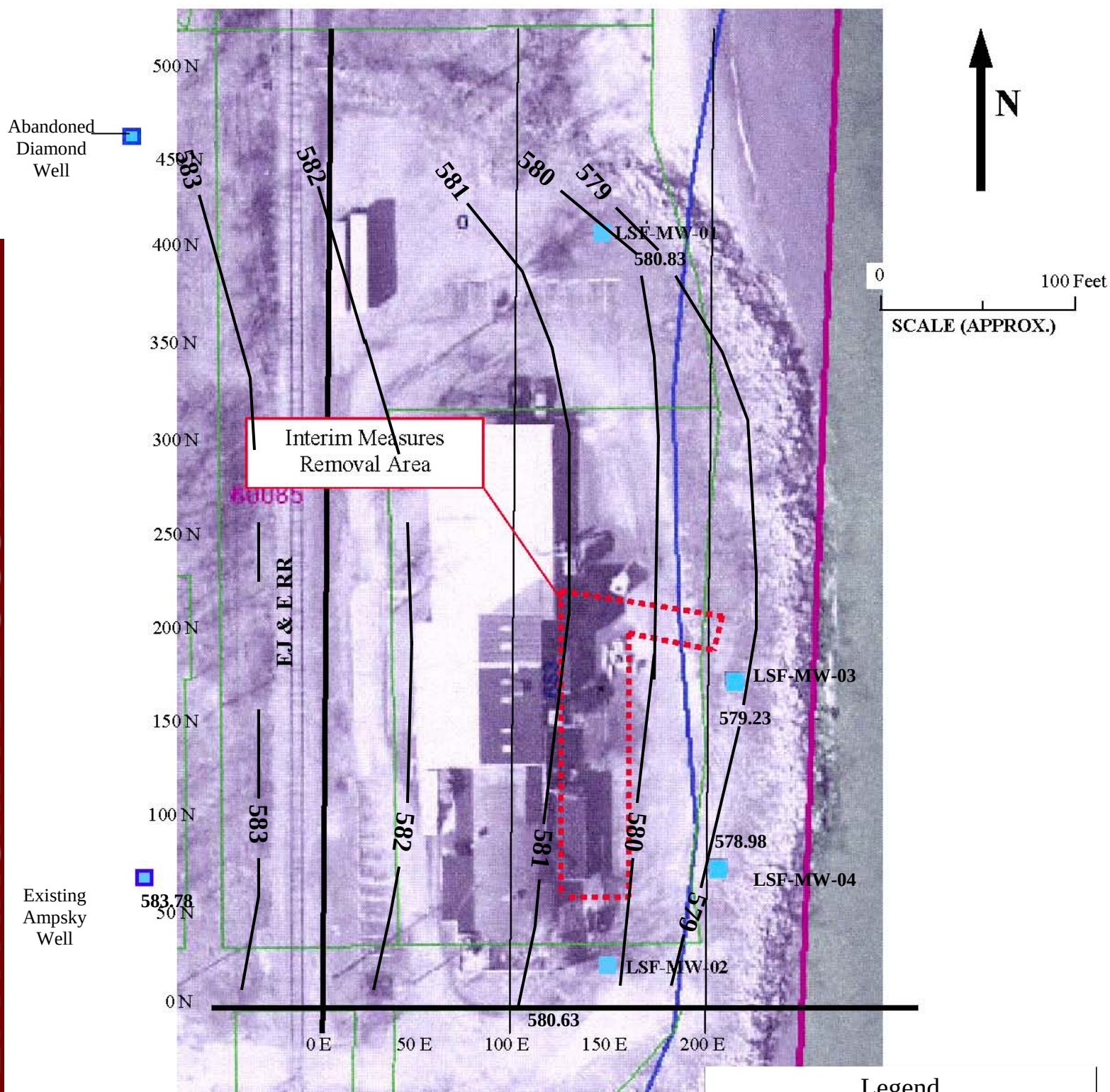


Figure 1—Groundwater Sample Locations and Groundwater Elevations, December 2008
Lake Shore Foundry, Waukegan, IL

Legend

Monitoring Well
(GW elevation)



Illinois Environmental Protection Agency

Well Completion Report

Site Number: _____

County: LakeSite Name: Former Diamond Scrap YardWell #: MW-10

State _____

Plane Coordinate: X 2070358 Y 1120845 (or) Latitude: _____ Longitude: _____

Borehole #: _____

Surveyed by: Waukegan Dept. of Engineering

IL Registration #: _____

Drilling Contractor: CS Drilling Inc.

Driller: _____

Consulting Firm: Deigan & Associates, LLCGeologist: Tim NorrisDrilling Method: Truck-Mounted HSA'sDrilling Fluid (Type): NoneLogged By: Tim NorrisDate Started: 1/16/06 Date Finished: 1/16/06Report Form
Completed By: Kerry Van AllenDate: 3/14/06

ANNULAR SPACE DETAILS

Type of Surface Seal: Sacrete

Type of Annular Sealant: _____

Installation Method: _____

Setting Time: _____

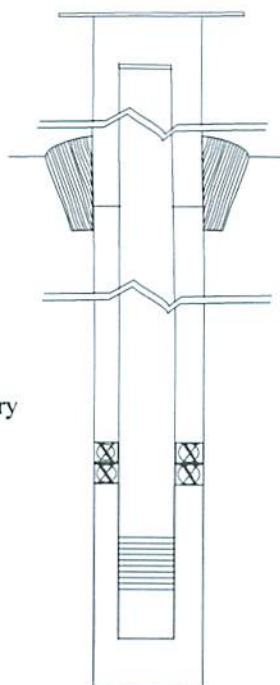
Type of Bentonite Seal - - Granular, Pe~~X~~et, Slurry
(Choose One)Installation Method: GravitySetting Time: 2 HoursType of Sand Pack: Uniform, pre-baggedGrain Size: #4 (Sieve Size)Installation Method: GravityType of Backfill Material: _____
(if applicable)

Installation Method: _____

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other



Elevations (MSL)*	Depths (BGS)	(.01ft.)
592.60	0	Top of Protective Casing
592.10	0.5	Top of Riser Pipe
592.60	0	Ground Surface
591.80	0.8	Top of Annular Sealant
585.40	7.20	Static Water Level (After Completion)
591.10	1.5	Top of Seal
589.80	2.8	Top of Sand Pack
587.60	5.0	Top of Screen
572.25	20.35	Bottom of Screen
572.05	20.55	Bottom of Well
572.05	20.55	Bottom of Borehole

* Referenced to a National Geodetic Datum

CASING MEASUREMENTS

Diameter of Borehole (inches)	7
ID of Riser Pipe (inches)	2
Protective Casing Length (feet)	1
Riser Pipe Length (feet)	5
Bottom of Screen to End Cap (feet)	0.2
Screen Length (1" slot to last slot) (feet)	15
Total Length of Casing (feet)	
Screen Slot Size **	0.01"

**Hand-Slotted Well Screens are Unacceptable

ANALYTICAL REPORT

Job Number: 500-15965-1

SDG Number: 500-15965-1

Job Description: Lake Shore Foundry, Waukegan

For:

Deigan & Associates

100 S. Genesee St.

Waukegan, IL 60085

Attention: Gary Deigan



Approved for release.
Richard C Wright
Project Manager II
12/23/2008 12:49 PM

Richard C Wright
Project Manager II
richard.wright@testamericainc.com
12/23/2008

These test results meet all the requirements of NELAC for accredited parameters.

The Lab Certification ID# is 100201.

All questions regarding this test report should be directed to the TestAmerica Project Manager whose signature appears on this report. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Chicago 2417 Bond Street, University Park, IL 60466

Tel (708) 534-5200 Fax (708) 534-5211 www.testamericainc.com



Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
500-15965-1	LSF-MW-01					
Antimony		0.0083	J	0.020	mg/L	6010B
Arsenic		0.0065	J	0.010	mg/L	6010B
Barium		0.13	B	0.010	mg/L	6010B
Beryllium		0.00014	J	0.0040	mg/L	6010B
Chromium		0.0073	J	0.010	mg/L	6010B
Cobalt		0.0042	J	0.0050	mg/L	6010B
Copper		0.056		0.010	mg/L	6010B
Lead		0.039	B	0.0050	mg/L	6010B
Nickel		0.0068	J	0.010	mg/L	6010B
Tin		0.0043	J	0.020	mg/L	6010B
Vanadium		0.0090		0.0050	mg/L	6010B
Zinc		0.063	B	0.020	mg/L	6010B
pH		7.39	HF	0.200	SU	9040B
<i>Dissolved</i>						
Barium		0.095	B	0.010	mg/L	6010B
Cobalt		0.0011	J	0.0050	mg/L	6010B
Copper		0.0015	J	0.010	mg/L	6010B
Lead		0.0026	J B	0.0050	mg/L	6010B
Zinc		0.020	B	0.020	mg/L	6010B
<i>Total Recoverable</i>						
Antimony		0.00084	J	0.0020	mg/L	6020

EXECUTIVE SUMMARY - Detections

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
500-15965-2	LSF-MW-02					
Antimony		0.0084	J	0.020	mg/L	6010B
Arsenic		0.0037	J	0.010	mg/L	6010B
Barium		0.17	B	0.010	mg/L	6010B
Beryllium		0.00029	J	0.0040	mg/L	6010B
Cadmium		0.0092		0.0020	mg/L	6010B
Chromium		0.027		0.010	mg/L	6010B
Cobalt		0.014		0.0050	mg/L	6010B
Copper		1.7		0.010	mg/L	6010B
Lead		0.26	B	0.0050	mg/L	6010B
Nickel		0.097		0.010	mg/L	6010B
Silver		0.0022	J	0.0050	mg/L	6010B
Tin		0.037		0.020	mg/L	6010B
Vanadium		0.014		0.0050	mg/L	6010B
Zinc		2.2	B	0.020	mg/L	6010B
Mercury		0.00022		0.00020	mg/L	7470A
pH		7.19	HF	0.200	SU	9040B
<i>Dissolved</i>						
Barium		0.13	B	0.010	mg/L	6010B
Cadmium		0.0050		0.0020	mg/L	6010B
Cobalt		0.0097		0.0050	mg/L	6010B
Copper		0.44		0.010	mg/L	6010B
Lead		0.0062	B	0.0050	mg/L	6010B
Nickel		0.074		0.010	mg/L	6010B
Zinc		1.6	B	0.020	mg/L	6010B
Antimony		0.0036		0.0020	mg/L	6020
<i>Total Recoverable</i>						
Antimony		0.0055		0.0020	mg/L	6020

EXECUTIVE SUMMARY - Detections

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
500-15965-3	LSF-MW-03					
Arsenic		0.0029	J	0.010	mg/L	6010B
Barium		0.10	B	0.010	mg/L	6010B
Beryllium		0.00034	J	0.0040	mg/L	6010B
Chromium		0.015		0.010	mg/L	6010B
Cobalt		0.0071		0.0050	mg/L	6010B
Copper		0.92		0.010	mg/L	6010B
Lead		0.089	B	0.0050	mg/L	6010B
Nickel		0.038		0.010	mg/L	6010B
Tin		0.0056	J	0.020	mg/L	6010B
Vanadium		0.016		0.0050	mg/L	6010B
Zinc		0.48	B	0.020	mg/L	6010B
pH		7.52	HF	0.200	SU	9040B
<i>Dissolved</i>						
Barium		0.055	B	0.010	mg/L	6010B
Cobalt		0.0018	J	0.0050	mg/L	6010B
Copper		0.19		0.010	mg/L	6010B
Lead		0.0030	J B	0.0050	mg/L	6010B
Nickel		0.014		0.010	mg/L	6010B
Zinc		0.14	B	0.020	mg/L	6010B
Antimony		0.0016	J	0.0020	mg/L	6020
<i>Total Recoverable</i>						
Antimony		0.0018	J	0.0020	mg/L	6020

EXECUTIVE SUMMARY - Detections

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
500-15965-4	LSF-MW-04					
Arsenic		0.013		0.010	mg/L	6010B
Barium		0.16	B	0.010	mg/L	6010B
Beryllium		0.00016	J	0.0040	mg/L	6010B
Chromium		0.0089	J	0.010	mg/L	6010B
Cobalt		0.0035	J	0.0050	mg/L	6010B
Copper		0.16		0.010	mg/L	6010B
Lead		0.030	B	0.0050	mg/L	6010B
Nickel		0.0092	J	0.010	mg/L	6010B
Vanadium		0.0080		0.0050	mg/L	6010B
Zinc		0.12	B	0.020	mg/L	6010B
pH		7.52	HF	0.200	SU	9040B
<i>Dissolved</i>						
Arsenic		0.0034	J	0.010	mg/L	6010B
Barium		0.055	B	0.010	mg/L	6010B
Copper		0.0074	J	0.010	mg/L	6010B
Lead		0.0024	J B	0.0050	mg/L	6010B
Vanadium		0.0013	J	0.0050	mg/L	6010B
Zinc		0.015	J B	0.020	mg/L	6010B
Antimony		0.0035		0.0020	mg/L	6020
<i>Total Recoverable</i>						
Antimony		0.0036		0.0020	mg/L	6020
500-15965-5	EXISTING SOUTH BACKGROUND WELL					
Arsenic		0.0062	J	0.010	mg/L	6010B
Barium		0.12	B	0.010	mg/L	6010B
Chromium		0.0091	J	0.010	mg/L	6010B
Cobalt		0.0062		0.0050	mg/L	6010B
Copper		0.014	B	0.010	mg/L	6010B
Lead		0.010	B	0.0050	mg/L	6010B
Nickel		0.010		0.010	mg/L	6010B
Vanadium		0.014		0.0050	mg/L	6010B
Zinc		0.039	B	0.020	mg/L	6010B
pH		7.31	HF	0.200	SU	9040B
<i>Dissolved</i>						
Barium		0.055	B	0.010	mg/L	6010B
Cobalt		0.0013	J	0.0050	mg/L	6010B
Copper		0.0031	J	0.010	mg/L	6010B
Lead		0.0042	J B	0.0050	mg/L	6010B
Zinc		0.0089	J B	0.020	mg/L	6010B

METHOD SUMMARY

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP)	TAL CHI	SW846 6010B	
Sample Filtration	TAL CHI		FILTRATION
Preparation, Total Metals	TAL CHI		SW846 3010A
Metals (ICP/MS)	TAL CHI	SW846 6020	
Sample Filtration	TAL CHI		FILTRATION
Preparation, Total Recoverable or Dissolved Metals	TAL CHI		SW846 3005A
Mercury (CVAA)	TAL CHI	SW846 7470A	
Sample Filtration	TAL CHI		FILTRATION
Preparation, Mercury	TAL CHI		SW846 7470A
pH	TAL CHI	SW846 9040B	

Lab References:

TAL CHI = TestAmerica Chicago

Method References:

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

SAMPLE SUMMARY

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
500-15965-1	LSF-MW-01	Water	12/11/2008 1445	12/12/2008 1000
500-15965-2	LSF-MW-02	Water	12/11/2008 1455	12/12/2008 1000
500-15965-3	LSF-MW-03	Water	12/11/2008 1340	12/12/2008 1000
500-15965-4	LSF-MW-04	Water	12/11/2008 1350	12/12/2008 1000
500-15965-5	Existing South Background Well	Water	12/11/2008 1430	12/12/2008 1000

SAMPLE RESULTS

Gary Deigan
Deigan & Associates
100 S. Genesee St.
Waukegan, IL 60085

Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-01
Lab Sample ID: 500-15965-1

Date Sampled: 12/11/2008 1445
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed:		12/20/2008	1209
Prep Method: 3010A			Date Prepared:		12/17/2008	0830
Antimony	0.0083	J	mg/L	0.0042	0.020	1.0
Arsenic	0.0065	J	mg/L	0.0028	0.010	1.0
Barium	0.13	B	mg/L	0.00027	0.010	1.0
Beryllium	0.00014	J	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020		mg/L	0.00046	0.0020	1.0
Chromium	0.0073	J	mg/L	0.0016	0.010	1.0
Cobalt	0.0042	J	mg/L	0.0011	0.0050	1.0
Copper	0.056		mg/L	0.00084	0.010	1.0
Lead	0.039	B	mg/L	0.0018	0.0050	1.0
Nickel	0.0068	J	mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	<0.0050		mg/L	0.0012	0.0050	1.0
Thallium	<0.010		mg/L	0.0045	0.010	1.0
Tin	0.0043	J	mg/L	0.0042	0.020	1.0
Vanadium	0.0090		mg/L	0.0012	0.0050	1.0
Zinc	0.063	B	mg/L	0.0025	0.020	1.0
Method: Dissolved-6010B			Date Analyzed:		12/20/2008	1216
Prep Method: 3010A			Date Prepared:		12/17/2008	0830
Arsenic	<0.010		mg/L	0.0028	0.010	1.0
Barium	0.095	B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040		mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020		mg/L	0.00046	0.0020	1.0
Chromium	<0.010		mg/L	0.0016	0.010	1.0
Cobalt	0.0011	J	mg/L	0.0011	0.0050	1.0
Copper	0.0015	J	mg/L	0.00084	0.010	1.0
Lead	0.0026	J B	mg/L	0.0018	0.0050	1.0
Nickel	<0.010		mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	<0.0050		mg/L	0.0012	0.0050	1.0
Tin	<0.020		mg/L	0.0042	0.020	1.0
Vanadium	<0.0050		mg/L	0.0012	0.0050	1.0
Zinc	0.020	B	mg/L	0.0025	0.020	1.0
Method: Total Recoverable-6020			Date Analyzed:		12/16/2008	1721
Prep Method: 3005A			Date Prepared:		12/16/2008	0830
Antimony	0.00084	J	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020		mg/L	0.00065	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:		12/16/2008	1725

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-01
Lab Sample ID: 500-15965-1

Date Sampled: 12/11/2008 1445
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Prep Method: 3005A					
			Date Prepared:	12/16/2008 0830	
Antimony	<0.0020	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: 7470A					
			Date Analyzed:	12/16/2008 1415	
Prep Method: 7470A			Date Prepared:	12/16/2008 0915	
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: Dissolved-7470A					
			Date Analyzed:	12/16/2008 1418	
Prep Method: 7470A			Date Prepared:	12/16/2008 0915	
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 9040B					
pH	7.39	HF SU	Date Analyzed:	12/12/2008 1513	
			0.200	0.200	1.0

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-02
Lab Sample ID: 500-15965-2

Date Sampled: 12/11/2008 1455
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed:		12/20/2008	1223
Prep Method: 3010A			Date Prepared:		12/17/2008	0830
Antimony	0.0084	J	mg/L	0.0042	0.020	1.0
Arsenic	0.0037	J	mg/L	0.0028	0.010	1.0
Barium	0.17	B	mg/L	0.00027	0.010	1.0
Beryllium	0.00029	J	mg/L	0.00013	0.0040	1.0
Cadmium	0.0092		mg/L	0.00046	0.0020	1.0
Chromium	0.027		mg/L	0.0016	0.010	1.0
Cobalt	0.014		mg/L	0.0011	0.0050	1.0
Copper	1.7		mg/L	0.00084	0.010	1.0
Lead	0.26	B	mg/L	0.0018	0.0050	1.0
Nickel	0.097		mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	0.0022	J	mg/L	0.0012	0.0050	1.0
Thallium	<0.010		mg/L	0.0045	0.010	1.0
Tin	0.037		mg/L	0.0042	0.020	1.0
Vanadium	0.014		mg/L	0.0012	0.0050	1.0
Zinc	2.2	B	mg/L	0.0025	0.020	1.0
Method: Dissolved-6010B			Date Analyzed:		12/20/2008	1230
Prep Method: 3010A			Date Prepared:		12/17/2008	0830
Arsenic	<0.010		mg/L	0.0028	0.010	1.0
Barium	0.13	B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040		mg/L	0.00013	0.0040	1.0
Cadmium	0.0050		mg/L	0.00046	0.0020	1.0
Chromium	<0.010		mg/L	0.0016	0.010	1.0
Cobalt	0.0097		mg/L	0.0011	0.0050	1.0
Copper	0.44		mg/L	0.00084	0.010	1.0
Lead	0.0062	B	mg/L	0.0018	0.0050	1.0
Nickel	0.074		mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	<0.0050		mg/L	0.0012	0.0050	1.0
Tin	<0.020		mg/L	0.0042	0.020	1.0
Vanadium	<0.0050		mg/L	0.0012	0.0050	1.0
Zinc	1.6	B	mg/L	0.0025	0.020	1.0
Method: Total Recoverable-6020			Date Analyzed:		12/16/2008	1729
Prep Method: 3005A			Date Prepared:		12/16/2008	0830
Antimony	0.0055		mg/L	0.00046	0.0020	1.0
Thallium	<0.0020		mg/L	0.00065	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:		12/16/2008	1732

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-02
Lab Sample ID: 500-15965-2

Date Sampled: 12/11/2008 1455
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Prep Method: 3005A					
			Date Prepared:	12/16/2008 0830	
Antimony	0.0036	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: 7470A					
			Date Analyzed:	12/16/2008 1420	
Prep Method: 7470A			Date Prepared:	12/16/2008 0915	
Mercury	0.00022	mg/L	0.000065	0.00020	1.0
Method: Dissolved-7470A					
			Date Analyzed:	12/16/2008 1427	
Prep Method: 7470A			Date Prepared:	12/16/2008 0915	
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 9040B					
pH	7.19	HF SU	Date Analyzed:	12/12/2008 1515	
			0.200	0.200	1.0

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-03
Lab Sample ID: 500-15965-3

Date Sampled: 12/11/2008 1340
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed: 12/20/2008 1237		
Prep Method: 3010A			Date Prepared: 12/17/2008 0830		
Antimony	<0.020	mg/L	0.0042	0.020	1.0
Arsenic	0.0029 J	mg/L	0.0028	0.010	1.0
Barium	0.10 B	mg/L	0.00027	0.010	1.0
Beryllium	0.00034 J	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020	mg/L	0.00046	0.0020	1.0
Chromium	0.015	mg/L	0.0016	0.010	1.0
Cobalt	0.0071	mg/L	0.0011	0.0050	1.0
Copper	0.92	mg/L	0.00084	0.010	1.0
Lead	0.089 B	mg/L	0.0018	0.0050	1.0
Nickel	0.038	mg/L	0.0024	0.010	1.0
Selenium	<0.010	mg/L	0.0042	0.010	1.0
Silver	<0.0050	mg/L	0.0012	0.0050	1.0
Thallium	<0.010	mg/L	0.0045	0.010	1.0
Tin	0.0056 J	mg/L	0.0042	0.020	1.0
Vanadium	0.016	mg/L	0.0012	0.0050	1.0
Zinc	0.48 B	mg/L	0.0025	0.020	1.0
Method: Dissolved-6010B			Date Analyzed: 12/20/2008 1244		
Prep Method: 3010A			Date Prepared: 12/17/2008 0830		
Arsenic	<0.010	mg/L	0.0028	0.010	1.0
Barium	0.055 B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020	mg/L	0.00046	0.0020	1.0
Chromium	<0.010	mg/L	0.0016	0.010	1.0
Cobalt	0.0018 J	mg/L	0.0011	0.0050	1.0
Copper	0.19	mg/L	0.00084	0.010	1.0
Lead	0.0030 J B	mg/L	0.0018	0.0050	1.0
Nickel	0.014	mg/L	0.0024	0.010	1.0
Selenium	<0.010	mg/L	0.0042	0.010	1.0
Silver	<0.0050	mg/L	0.0012	0.0050	1.0
Tin	<0.020	mg/L	0.0042	0.020	1.0
Vanadium	<0.0050	mg/L	0.0012	0.0050	1.0
Zinc	0.14 B	mg/L	0.0025	0.020	1.0
Method: Total Recoverable-6020			Date Analyzed: 12/16/2008 1736		
Prep Method: 3005A			Date Prepared: 12/16/2008 0830		
Antimony	0.0018 J	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: Dissolved-6020			Date Analyzed: 12/16/2008 1740		

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-03
Lab Sample ID: 500-15965-3

Date Sampled: 12/11/2008 1340
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Prep Method: 3005A					
Date Prepared: 12/16/2008 0830					
Antimony	0.0016 J	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: 7470A					
Date Analyzed: 12/16/2008 1429					
Prep Method: 7470A					
Date Prepared: 12/16/2008 0915					
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: Dissolved-7470A					
Date Analyzed: 12/16/2008 1431					
Prep Method: 7470A					
Date Prepared: 12/16/2008 0915					
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 9040B					
Date Analyzed: 12/12/2008 1518					
pH	7.52 HF	SU	0.200	0.200	1.0

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-04
Lab Sample ID: 500-15965-4

Date Sampled: 12/11/2008 1350
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed:	12/20/2008	1251	
Prep Method: 3010A			Date Prepared:	12/17/2008	0830	
Antimony	<0.020		mg/L	0.0042	0.020	1.0
Arsenic	0.013		mg/L	0.0028	0.010	1.0
Barium	0.16	B	mg/L	0.00027	0.010	1.0
Beryllium	0.00016	J	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020		mg/L	0.00046	0.0020	1.0
Chromium	0.0089	J	mg/L	0.0016	0.010	1.0
Cobalt	0.0035	J	mg/L	0.0011	0.0050	1.0
Copper	0.16		mg/L	0.00084	0.010	1.0
Lead	0.030	B	mg/L	0.0018	0.0050	1.0
Nickel	0.0092	J	mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	<0.0050		mg/L	0.0012	0.0050	1.0
Thallium	<0.010		mg/L	0.0045	0.010	1.0
Tin	<0.020		mg/L	0.0042	0.020	1.0
Vanadium	0.0080		mg/L	0.0012	0.0050	1.0
Zinc	0.12	B	mg/L	0.0025	0.020	1.0
Method: Dissolved-6010B			Date Analyzed:	12/20/2008	1319	
Prep Method: 3010A			Date Prepared:	12/17/2008	0830	
Arsenic	0.0034	J	mg/L	0.0028	0.010	1.0
Barium	0.055	B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040		mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020		mg/L	0.00046	0.0020	1.0
Chromium	<0.010		mg/L	0.0016	0.010	1.0
Cobalt	<0.0050		mg/L	0.0011	0.0050	1.0
Copper	0.0074	J	mg/L	0.00084	0.010	1.0
Lead	0.0024	J B	mg/L	0.0018	0.0050	1.0
Nickel	<0.010		mg/L	0.0024	0.010	1.0
Selenium	<0.010		mg/L	0.0042	0.010	1.0
Silver	<0.0050		mg/L	0.0012	0.0050	1.0
Tin	<0.020		mg/L	0.0042	0.020	1.0
Vanadium	0.0013	J	mg/L	0.0012	0.0050	1.0
Zinc	0.015	J B	mg/L	0.0025	0.020	1.0
Method: Total Recoverable-6020			Date Analyzed:	12/16/2008	1744	
Prep Method: 3005A			Date Prepared:	12/16/2008	0830	
Antimony	0.0036		mg/L	0.00046	0.0020	1.0
Thallium	<0.0020		mg/L	0.00065	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/16/2008	1755	

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: LSF-MW-04
Lab Sample ID: 500-15965-4

Date Sampled: 12/11/2008 1350
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Prep Method: 3005A					
Date Prepared: 12/16/2008 0830					
Antimony	0.0035	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: 7470A					
Date Analyzed: 12/16/2008 1433					
Prep Method: 7470A					
Date Prepared: 12/16/2008 0915					
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: Dissolved-7470A					
Date Analyzed: 12/16/2008 1436					
Prep Method: 7470A					
Date Prepared: 12/16/2008 0915					
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 9040B					
Date Analyzed: 12/12/2008 1520					
pH	7.52	HF SU	0.200	0.200	1.0

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: Existing South Background Well
Lab Sample ID: 500-15965-5

Date Sampled: 12/11/2008 1430
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed: 12/20/2008 0614		
Prep Method: 3010A			Date Prepared: 12/18/2008 1003		
Antimony	<0.020	mg/L	0.0042	0.020	1.0
Arsenic	0.0062 J	mg/L	0.0028	0.010	1.0
Barium	0.12 B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020	mg/L	0.00046	0.0020	1.0
Chromium	0.0091 J	mg/L	0.0016	0.010	1.0
Cobalt	0.0062	mg/L	0.0011	0.0050	1.0
Copper	0.014 B	mg/L	0.00084	0.010	1.0
Lead	0.010 B	mg/L	0.0018	0.0050	1.0
Nickel	0.010	mg/L	0.0024	0.010	1.0
Selenium	<0.010	mg/L	0.0042	0.010	1.0
Silver	<0.0050	mg/L	0.0012	0.0050	1.0
Thallium	<0.010	mg/L	0.0045	0.010	1.0
Tin	<0.020	mg/L	0.0042	0.020	1.0
Vanadium	0.014	mg/L	0.0012	0.0050	1.0
Zinc	0.039 B	mg/L	0.0025	0.020	1.0
Method: Dissolved-6010B			Date Analyzed: 12/20/2008 1333		
Prep Method: 3010A			Date Prepared: 12/17/2008 0830		
Arsenic	<0.010	mg/L	0.0028	0.010	1.0
Barium	0.055 B	mg/L	0.00027	0.010	1.0
Beryllium	<0.0040	mg/L	0.00013	0.0040	1.0
Cadmium	<0.0020	mg/L	0.00046	0.0020	1.0
Chromium	<0.010	mg/L	0.0016	0.010	1.0
Cobalt	0.0013 J	mg/L	0.0011	0.0050	1.0
Copper	0.0031 J	mg/L	0.00084	0.010	1.0
Lead	0.0042 J B	mg/L	0.0018	0.0050	1.0
Nickel	<0.010	mg/L	0.0024	0.010	1.0
Selenium	<0.010	mg/L	0.0042	0.010	1.0
Silver	<0.0050	mg/L	0.0012	0.0050	1.0
Tin	<0.020	mg/L	0.0042	0.020	1.0
Vanadium	<0.0050	mg/L	0.0012	0.0050	1.0
Zinc	0.0089 J B	mg/L	0.0025	0.020	1.0
Method: Total Recoverable-6020			Date Analyzed: 12/16/2008 1758		
Prep Method: 3005A			Date Prepared: 12/16/2008 0830		
Antimony	<0.0020	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: Dissolved-6020			Date Analyzed: 12/16/2008 1802		

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Job Number: 500-15965-1
Sdg Number: 500-15965-1

Client Sample ID: Existing South Background Well
Lab Sample ID: 500-15965-5

Date Sampled: 12/11/2008 1430
Date Received: 12/12/2008 1000
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Prep Method: 3005A					
			Date Prepared:	12/16/2008 0830	
Antimony	<0.0020	mg/L	0.00046	0.0020	1.0
Thallium	<0.0020	mg/L	0.00065	0.0020	1.0
Method: Dissolved-7470A					
			Date Analyzed:	12/16/2008 1440	
			Date Prepared:	12/16/2008 0915	
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 7470A					
			Date Analyzed:	12/20/2008 1211	
			Date Prepared:	12/19/2008 0930	
Mercury	<0.00020	mg/L	0.000065	0.00020	1.0
Method: 9040B					
pH	7.31	HF SU	Date Analyzed:	12/12/2008 1522	1.0
				0.200	0.200

DATA REPORTING QUALIFIERS

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Section	Qualifier	Description
Metals	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	HF	Field parameter with a holding time of 15 minutes

US EPA ARCHIVE DOCUMENT

QUALITY CONTROL RESULTS

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 500-54417					
LCS 500-54417/2-A	Lab Control Spike	R	Water	3005A	
MB 500-54417/1-A	Method Blank	R	Water	3005A	
500-15965-1	LSF-MW-01	D	Water	3005A	
500-15965-1	LSF-MW-01	R	Water	3005A	
500-15965-2	LSF-MW-02	D	Water	3005A	
500-15965-2	LSF-MW-02	R	Water	3005A	
500-15965-3	LSF-MW-03	D	Water	3005A	
500-15965-3	LSF-MW-03	R	Water	3005A	
500-15965-4	LSF-MW-04	D	Water	3005A	
500-15965-4	LSF-MW-04	R	Water	3005A	
500-15965-5	Existing South Background Well	D	Water	3005A	
500-15965-5	Existing South Background Well	R	Water	3005A	
Prep Batch: 500-54454					
LCS 500-54454/2-A	Lab Control Spike	T	Water	7470A	
MB 500-54454/1-A	Method Blank	T	Water	7470A	
500-15965-1	LSF-MW-01	D	Water	7470A	
500-15965-1	LSF-MW-01	T	Water	7470A	
500-15965-2	LSF-MW-02	D	Water	7470A	
500-15965-2	LSF-MW-02	T	Water	7470A	
500-15965-3	LSF-MW-03	D	Water	7470A	
500-15965-3	LSF-MW-03	T	Water	7470A	
500-15965-4	LSF-MW-04	D	Water	7470A	
500-15965-4	LSF-MW-04	T	Water	7470A	
500-15965-5	Existing South Background Well	D	Water	7470A	
Analysis Batch:500-54469					
LCS 500-54454/2-A	Lab Control Spike	T	Water	7470A	500-54454
MB 500-54454/1-A	Method Blank	T	Water	7470A	500-54454
500-15965-1	LSF-MW-01	D	Water	7470A	500-54454
500-15965-1	LSF-MW-01	T	Water	7470A	500-54454
500-15965-2	LSF-MW-02	D	Water	7470A	500-54454
500-15965-2	LSF-MW-02	T	Water	7470A	500-54454
500-15965-3	LSF-MW-03	D	Water	7470A	500-54454
500-15965-3	LSF-MW-03	T	Water	7470A	500-54454
500-15965-4	LSF-MW-04	D	Water	7470A	500-54454
500-15965-4	LSF-MW-04	T	Water	7470A	500-54454
500-15965-5	Existing South Background Well	D	Water	7470A	500-54454

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:500-54517					
LCS 500-54417/2-A	Lab Control Spike	R	Water	6020	500-54417
MB 500-54417/1-A	Method Blank	R	Water	6020	500-54417
500-15965-1	LSF-MW-01	D	Water	6020	500-54417
500-15965-1	LSF-MW-01	R	Water	6020	500-54417
500-15965-2	LSF-MW-02	D	Water	6020	500-54417
500-15965-2	LSF-MW-02	R	Water	6020	500-54417
500-15965-3	LSF-MW-03	D	Water	6020	500-54417
500-15965-3	LSF-MW-03	R	Water	6020	500-54417
500-15965-4	LSF-MW-04	D	Water	6020	500-54417
500-15965-4	LSF-MW-04	R	Water	6020	500-54417
500-15965-5	Existing South Background Well	D	Water	6020	500-54417
500-15965-5	Existing South Background Well	R	Water	6020	500-54417
Prep Batch: 500-54540					
LCS 500-54540/2-A	Lab Control Spike	T	Water	3010A	
MB 500-54540/1-A	Method Blank	T	Water	3010A	
500-15965-1	LSF-MW-01	D	Water	3010A	
500-15965-1	LSF-MW-01	T	Water	3010A	
500-15965-2	LSF-MW-02	D	Water	3010A	
500-15965-2	LSF-MW-02	T	Water	3010A	
500-15965-3	LSF-MW-03	D	Water	3010A	
500-15965-3	LSF-MW-03	T	Water	3010A	
500-15965-4	LSF-MW-04	D	Water	3010A	
500-15965-4	LSF-MW-04	T	Water	3010A	
500-15965-5	Existing South Background Well	D	Water	3010A	
Prep Batch: 500-54641					
LCS 500-54641/2-A	Lab Control Spike	T	Water	3010A	
MB 500-54641/1-A	Method Blank	T	Water	3010A	
500-15965-5	Existing South Background Well	T	Water	3010A	
Analysis Batch:500-54819					
LCS 500-54641/2-A	Lab Control Spike	T	Water	6010B	500-54641
MB 500-54641/1-A	Method Blank	T	Water	6010B	500-54641
500-15965-5	Existing South Background Well	T	Water	6010B	500-54641
Prep Batch: 500-54865					
LCS 500-54865/2-A	Lab Control Spike	T	Water	7470A	
MB 500-54865/1-A	Method Blank	T	Water	7470A	
500-15965-5	Existing South Background Well	T	Water	7470A	
Analysis Batch:500-54866					
LCS 500-54865/2-A	Lab Control Spike	T	Water	7470A	500-54865
MB 500-54865/1-A	Method Blank	T	Water	7470A	500-54865
500-15965-5	Existing South Background Well	T	Water	7470A	500-54865

TestAmerica Chicago

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:500-54884					
LCS 500-54540/2-A	Lab Control Spike	T	Water	6010B	500-54540
MB 500-54540/1-A	Method Blank	T	Water	6010B	500-54540
500-15965-1	LSF-MW-01	D	Water	6010B	500-54540
500-15965-1	LSF-MW-01	T	Water	6010B	500-54540
500-15965-2	LSF-MW-02	D	Water	6010B	500-54540
500-15965-2	LSF-MW-02	T	Water	6010B	500-54540
500-15965-3	LSF-MW-03	D	Water	6010B	500-54540
500-15965-3	LSF-MW-03	T	Water	6010B	500-54540
500-15965-4	LSF-MW-04	D	Water	6010B	500-54540
500-15965-4	LSF-MW-04	T	Water	6010B	500-54540
500-15965-5	Existing South Background Well	D	Water	6010B	500-54540

Report Basis

D = Dissolved

R = Total Recoverable

T = Total

General Chemistry

Analysis Batch:500-54162					
500-15965-1	LSF-MW-01	T	Water	9040B	
500-15965-1DU	Duplicate	T	Water	9040B	
500-15965-2	LSF-MW-02	T	Water	9040B	
500-15965-2DU	Duplicate	T	Water	9040B	
500-15965-3	LSF-MW-03	T	Water	9040B	
500-15965-3DU	Duplicate	T	Water	9040B	
500-15965-4	LSF-MW-04	T	Water	9040B	
500-15965-4DU	Duplicate	T	Water	9040B	
500-15965-5	Existing South Background Well	T	Water	9040B	
500-15965-5DU	Duplicate	T	Water	9040B	

Report Basis

T = Total

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Method Blank - Batch: 500-54540

Method: 6010B

Preparation: 3010A

Lab Sample ID: MB 500-54540/1-A

Analysis Batch: 500-54884

Instrument ID: TJA ICAP 61E Trace Analy

Client Matrix: Water

Prep Batch: 500-54540

Lab File ID: P41220A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 50 mL

Date Analyzed: 12/20/2008 1015

Final Weight/Volume: 50 mL

Date Prepared: 12/17/2008 0830

Analyte	Result	Qual	MDL	RL
Antimony	<0.020		0.0042	0.020
Arsenic	<0.010		0.0028	0.010
Barium	0.00067	J	0.00027	0.010
Beryllium	<0.0040		0.00013	0.0040
Cadmium	<0.0020		0.00046	0.0020
Chromium	<0.010		0.0016	0.010
Cobalt	<0.0050		0.0011	0.0050
Copper	<0.010		0.00084	0.010
Lead	0.0036	J	0.0018	0.0050
Nickel	<0.010		0.0024	0.010
Selenium	<0.010		0.0042	0.010
Silver	<0.0050		0.0012	0.0050
Thallium	<0.010		0.0045	0.010
Tin	<0.020		0.0042	0.020
Vanadium	<0.0050		0.0012	0.0050
Zinc	0.0046	J	0.0025	0.020

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Control Spike - Batch: 500-54540

Method: 6010B

Preparation: 3010A

Lab Sample ID: LCS 500-54540/2-A

Analysis Batch: 500-54884

Instrument ID: TJA ICAP 61E Trace Analy

Client Matrix: Water

Prep Batch: 500-54540

Lab File ID: P41220A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 50 mL

Date Analyzed: 12/20/2008 1022

Final Weight/Volume: 50 mL

Date Prepared: 12/17/2008 0830

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.500	0.498	100	80 - 120	
Arsenic	0.100	0.0922	92	80 - 120	
Barium	2.00	1.94	97	80 - 120	
Beryllium	0.0500	0.0480	96	80 - 120	
Cadmium	0.0500	0.0492	98	80 - 120	
Chromium	0.200	0.199	99	80 - 120	
Cobalt	0.500	0.482	96	80 - 120	
Copper	0.250	0.254	101	80 - 120	
Lead	0.100	0.102	102	80 - 120	
Nickel	0.500	0.482	96	80 - 120	
Selenium	0.100	0.0841	84	80 - 120	
Silver	0.0500	0.0497	99	80 - 120	
Thallium	0.100	0.0936	94	80 - 120	
Tin	1.00	0.992	99	80 - 120	
Vanadium	0.500	0.501	100	80 - 120	
Zinc	0.500	0.488	98	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Method Blank - Batch: 500-54641

Method: 6010B

Preparation: 3010A

Lab Sample ID: MB 500-54641/1-A

Analysis Batch: 500-54819

Instrument ID: TJA ICAP 61E Trace Analy

Client Matrix: Water

Prep Batch: 500-54641

Lab File ID: P51219C

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 50 mL

Date Analyzed: 12/20/2008 0344

Final Weight/Volume: 50 mL

Date Prepared: 12/18/2008 0845

Analyte	Result	Qual	MDL	RL
Antimony	0.0046	J	0.0042	0.020
Arsenic	<0.010		0.0028	0.010
Barium	0.0014	J	0.00027	0.010
Beryllium	<0.0040		0.00013	0.0040
Cadmium	<0.0020		0.00046	0.0020
Chromium	<0.010		0.0016	0.010
Cobalt	<0.0050		0.0011	0.0050
Copper	0.0015	J	0.00084	0.010
Lead	0.0029	J	0.0018	0.0050
Nickel	<0.010		0.0024	0.010
Selenium	<0.010		0.0042	0.010
Silver	<0.0050		0.0012	0.0050
Thallium	<0.010		0.0045	0.010
Tin	<0.020		0.0042	0.020
Vanadium	<0.0050		0.0012	0.0050
Zinc	0.0032	J	0.0025	0.020

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Lab Control Spike - Batch: 500-54641

Method: 6010B

Preparation: 3010A

Lab Sample ID: LCS 500-54641/2-A

Analysis Batch: 500-54819

Instrument ID: TJA ICAP 61E Trace Analy

Client Matrix: Water

Prep Batch: 500-54641

Lab File ID: P51219C

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 50 mL

Date Analyzed: 12/20/2008 0350

Final Weight/Volume: 50 mL

Date Prepared: 12/18/2008 0845

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.500	0.497	99	80 - 120	
Arsenic	0.100	0.0957	96	80 - 120	
Barium	2.00	1.96	98	80 - 120	
Beryllium	0.0500	0.0489	98	80 - 120	
Cadmium	0.0500	0.0483	97	80 - 120	
Chromium	0.200	0.200	100	80 - 120	
Cobalt	0.500	0.490	98	80 - 120	
Copper	0.250	0.257	103	80 - 120	
Lead	0.100	0.0998	100	80 - 120	
Nickel	0.500	0.488	98	80 - 120	
Selenium	0.100	0.0897	90	80 - 120	
Silver	0.0500	0.0490	98	80 - 120	
Thallium	0.100	0.0969	97	80 - 120	
Tin	1.00	0.991	99	80 - 120	
Vanadium	0.500	0.503	101	80 - 120	
Zinc	0.500	0.484	97	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Method Blank - Batch: 500-54417

Lab Sample ID: MB 500-54417/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1626
Date Prepared: 12/16/2008 0830

Analysis Batch: 500-54517
Prep Batch: 500-54417
Units: mg/L

Method: 6020
Preparation: 3005A
Total Recoverable

Instrument ID: ThermoElectron ICP-MS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	<0.0020		0.00046	0.0020
Thallium	<0.0020		0.00065	0.0020

Lab Control Spike - Batch: 500-54417

Lab Sample ID: LCS 500-54417/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1630
Date Prepared: 12/16/2008 0830

Analysis Batch: 500-54517
Prep Batch: 500-54417
Units: mg/L

Method: 6020
Preparation: 3005A
Total Recoverable

Instrument ID: ThermoElectron ICP-MS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.500	0.479	96	80 - 120	
Thallium	0.100	0.0964	96	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Method Blank - Batch: 500-54454

Lab Sample ID: MB 500-54454/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1341
Date Prepared: 12/16/2008 0915

Analysis Batch: 500-54469
Prep Batch: 500-54454
Units: mg/L

Method: 7470A
Preparation: 7470A

Instrument ID: Leeman Labs PS200 Mercur
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	MDL	RL
Mercury	<0.00020		0.000065	0.00020

Lab Control Spike - Batch: 500-54454

Lab Sample ID: LCS 500-54454/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1343
Date Prepared: 12/16/2008 0915

Analysis Batch: 500-54469
Prep Batch: 500-54454
Units: mg/L

Method: 7470A
Preparation: 7470A

Instrument ID: Leeman Labs PS200 Mercur
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00200	0.00205	102	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Method Blank - Batch: 500-54865

Method: 7470A

Preparation: 7470A

Lab Sample ID: MB 500-54865/1-A

Analysis Batch: 500-54866

Instrument ID: Leeman Labs PS200 Merc

Client Matrix: Water

Prep Batch: 500-54865

Lab File ID: N/A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 25 mL

Date Analyzed: 12/20/2008 1149

Final Weight/Volume: 25 mL

Date Prepared: 12/19/2008 0930

Analyte	Result	Qual	MDL	RL
Mercury	<0.00020		0.000065	0.00020

Lab Control Spike - Batch: 500-54865

Method: 7470A

Preparation: 7470A

Lab Sample ID: LCS 500-54865/2-A

Analysis Batch: 500-54866

Instrument ID: Leeman Labs PS200 Merc

Client Matrix: Water

Prep Batch: 500-54865

Lab File ID: N/A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 25 mL

Date Analyzed: 12/20/2008 1151

Final Weight/Volume: 25 mL

Date Prepared: 12/19/2008 0930

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00200	0.00214	107	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Duplicate - Batch: 500-54162**Method: 9040B****Preparation: N/A**

Lab Sample ID: 500-15965-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/12/2008 1514
Date Prepared: N/A

Analysis Batch: 500-54162
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.39	7.400	0.135		

Duplicate - Batch: 500-54162**Method: 9040B****Preparation: N/A**

Lab Sample ID: 500-15965-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/12/2008 1516
Date Prepared: N/A

Analysis Batch: 500-54162
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.19	7.190	0.00		

Duplicate - Batch: 500-54162**Method: 9040B****Preparation: N/A**

Lab Sample ID: 500-15965-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/12/2008 1519
Date Prepared: N/A

Analysis Batch: 500-54162
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.52	7.630	1.45		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Deigan & Associates

Job Number: 500-15965-1

Sdg Number: 500-15965-1

Duplicate - Batch: 500-54162**Method: 9040B****Preparation: N/A**

Lab Sample ID: 500-15965-4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/12/2008 1521
Date Prepared: N/A

Analysis Batch: 500-54162
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.52	7.530	0.133		

Duplicate - Batch: 500-54162**Method: 9040B****Preparation: N/A**

Lab Sample ID: 500-15965-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/12/2008 1524
Date Prepared: N/A

Analysis Batch: 500-54162
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.31	7.310	0.000		

Calculations are performed before rounding to avoid round-off errors in calculated results.

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, # 60466
Phone: 708.534.5200 Fax: 708.534.5211

Phone: (847) 823-9358

E-14

Address: _____
Address: _____
Phone: _____

Lab Job #: 200-13163
Chain of Custody Number: _____
Page 1 of 1
Temperature of Cooler: 3.3
12/23/2008

نی

12/23/2008

Lab Job #: 200-13762

Chain of Custody Number:

Page 1 of 1

Temperature °C of Cooker:

Preservative Ken

1. HCl, Cool to 4°
2. H₂SO₄, Cool to 4°
3. HNO₃, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. Cool to 4°
7. None
8. Other

Comments

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Client		Client Project #		Preservative		Parameter		1		H/Nb _g		1		Preservative Key																	
Project Name		Project Location/State		Lab Project #		Sample ID		Date		Time		# of Containers		Matrix		Dissolved Metals		Total Metals		pH		1. HCL, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. Cool to 4° 7. None 8. Other									
Lab ID	MS/MSO	Sample ID	Date	Time	# of Containers	Matrix	Dissolved Metals	Total Metals	pH	Comments																					
1		LSF-MB-01	12/1/08	2:45	3	W	X	X	X																						
2		LSF-MB-02		2:55	3	1	X	X	X																						
3		LSF-MB-03		1:40	3	1	X	X	X																						
4		LSF-MB-04		1:50	3	1	X	X	X																						
5		Existing Amethyst well South Background well		2:30	3	W	X	X	X																						

Turnaround Time Required (Business Days) Standard

___ 1 Day ___ 2 Days ___ 5 Days ___ 10 days ___ 15 Days ___ Other

Sample Disposal

☐ Return to Client

☒ Disposal by Lab

☐ Archive for ___ Months

(A fee may be assessed if samples are retained longer than 1 month)

Requested By	Company	Date	Time	Received By	Company	Date	Time
<i>[Signature]</i>	<i>Design Assoc</i>	12.11.08	3:45	<i>[Signature]</i>	<i>TestAmerica</i>	12/12/08	1000
Requested By	Company	Date	Time	Received By	Company	Date	Time

[illegible]**Matrix Key:**

Client Comments

IEPA TAC TIER I SKOS

Lab Comments:

Shipped

2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	4
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WW - Washwater
W - Water

1

SL - Sludge

MS - Mäselaneus

10-01

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THL4124-200 103361

Login Sample Receipt Check List

Client: Deigan & Associates

Job Number: 500-15965-1

SDG Number: 500-15965-1

Login Number: 15965

Creator: Kelsey, Shawn M

List Number: 1

List Source: TestAmerica Chicago

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
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	
There are no discrepancies between the sample IDs on the containers 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	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	