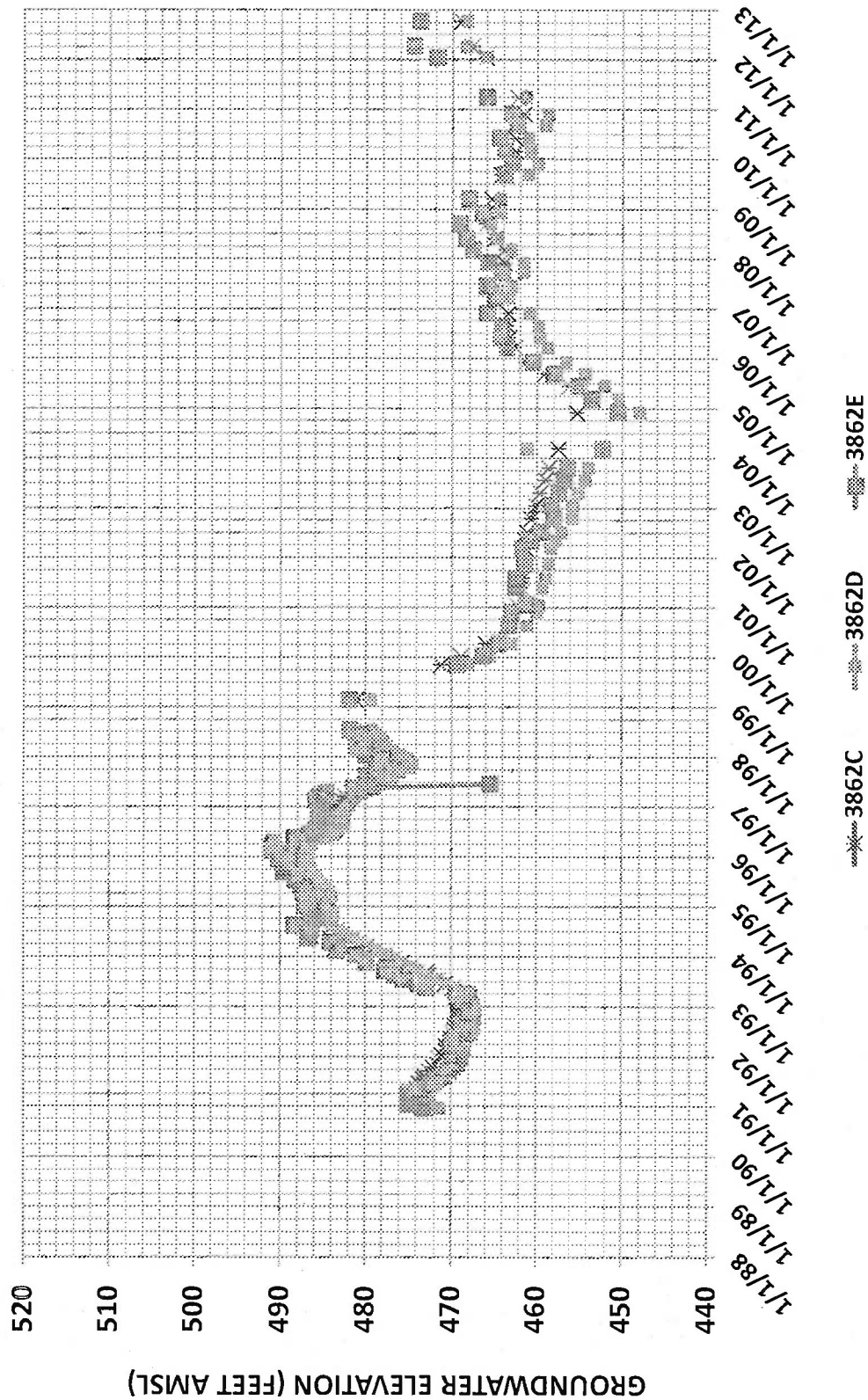


TIME SERIES HYDROGRAPH

Group 31

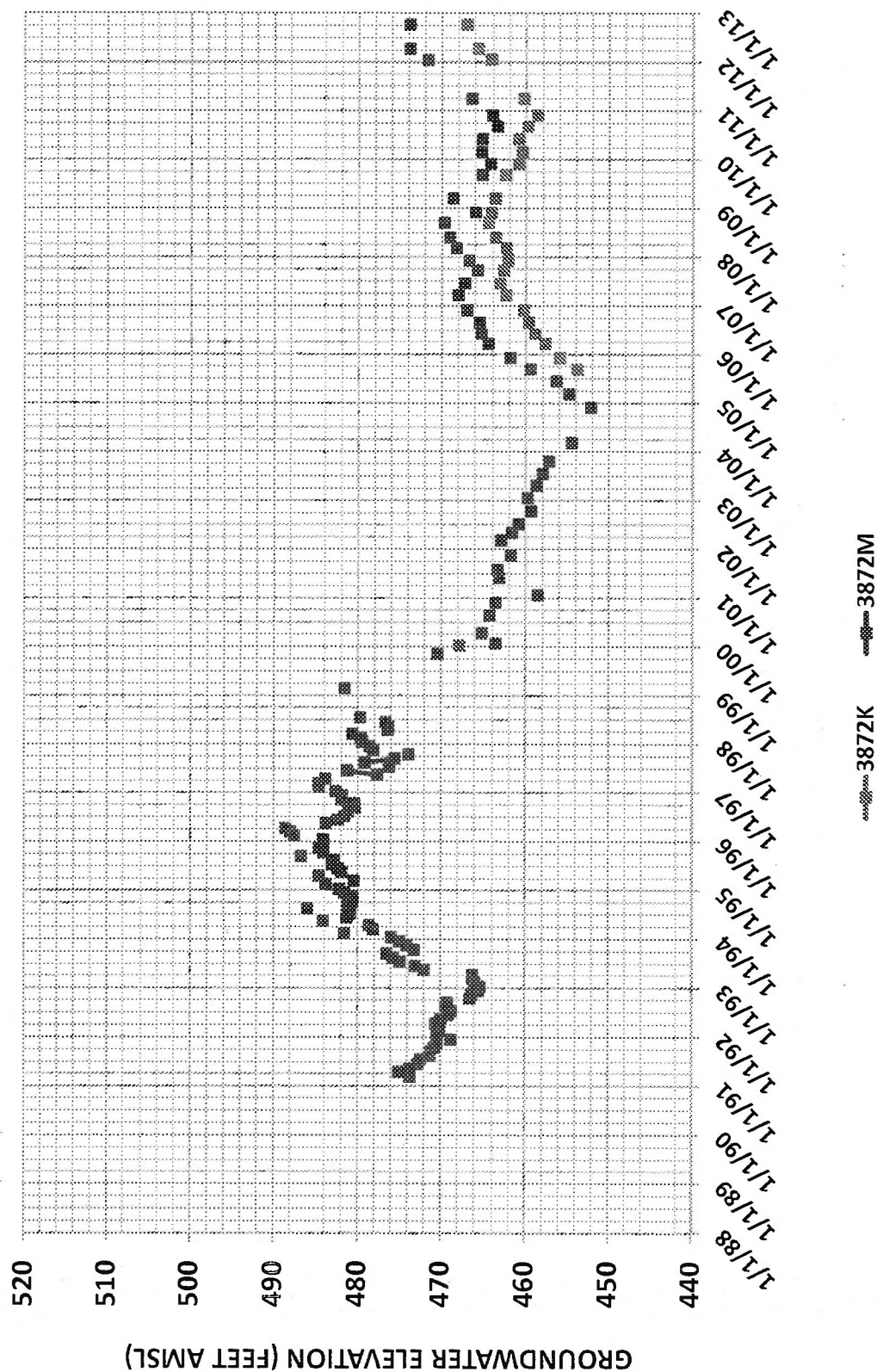
BOU-Lockheed Martin



TIME SERIES HYDROGRAPH

Group 32

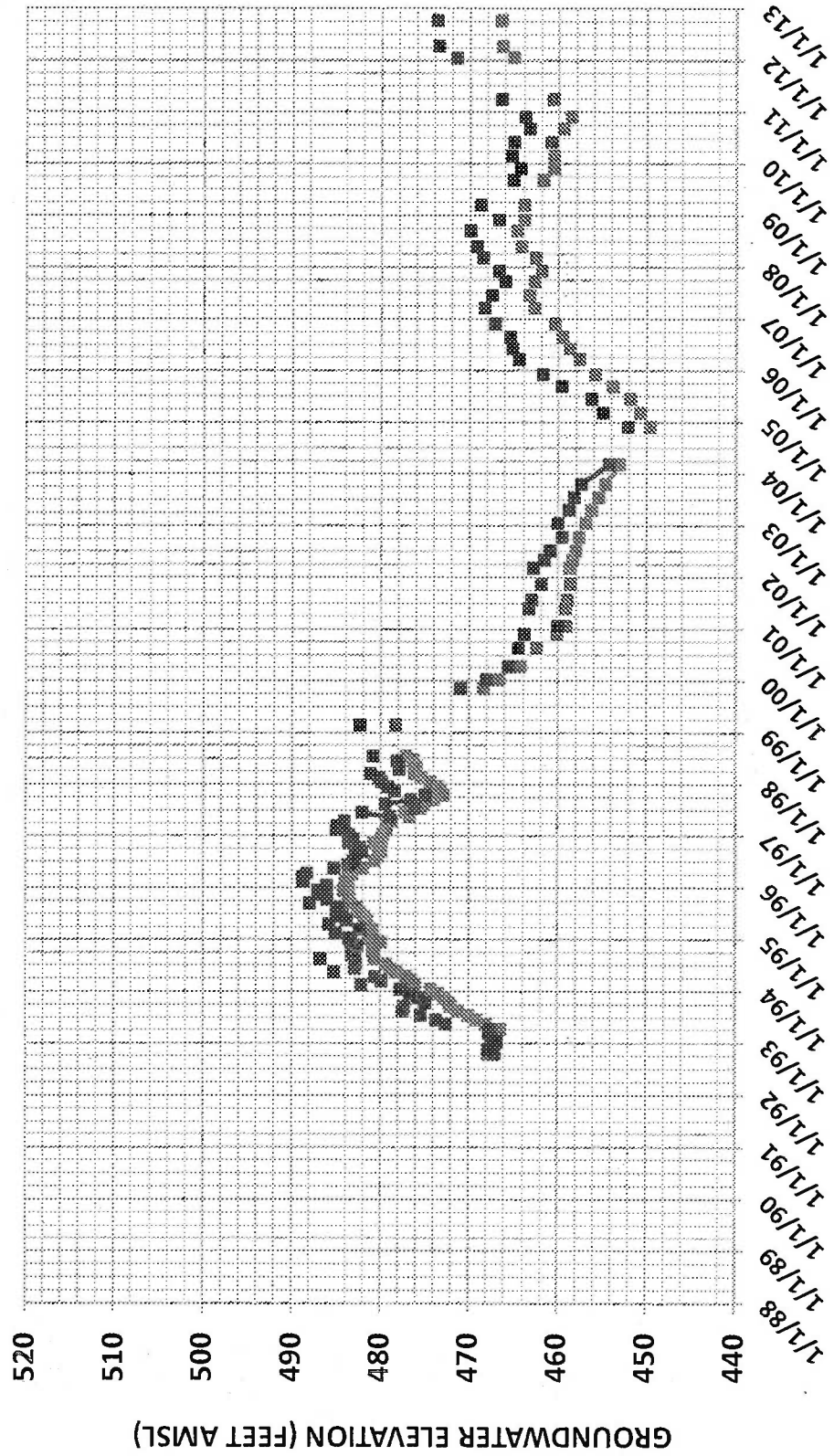
BOU-Lockheed Martin



TIME SERIES HYDROGRAPH

Group 33

BOU-Lockheed Martin



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Appendix G

Data Validation Reports

**Lockheed Martin Corporation
Burbank Operating Unit**

Data Validation Report

Burbank, California

Volatile and Semivolatile Organic Compounds (VOC,
SVOC), Metals, and General Chemistry Analyses

SDG #s: 311877, 311995, 312080,
312094, 312159, and 312205

Analyses Performed By:
Associated Laboratories,
Orange, California

Report #: 17766R
Review Level: Tier III
Project: B0038189.0000.00002

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 311877, 311995, 312080, 312094, 312159, and 312205 for samples collected in association with the Burbank Operable Unit (BOU) site in Burbank, California. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	TPH	MET	MISC
311877	3850R(10102012)	311877-001	Water	10/10/2012		X				
	B-1-CW27(10102012)	311877-002	Water	10/10/2012		X				
	3850N(10102012)	311877-003	Water	10/10/2012		X			X	X
	TB101012	311877-004	Water	10/10/2012		X				
	B-6-CW01(10102012)	311877-005	Water	10/10/2012		X				
311995	TB101112	311995-001	Water	10/11/2012		X				
	EQUIPMENT BLANK (10112012)	311995-002	Water	10/11/2012		X				
	B-6-CW02(10112012)	311995-003	Water	10/11/2012		X				
	B-6-CW03R(10112012)	311995-004	Water	10/11/2012		X				
	B-6-CW03R DUPLICATE(10112012)	311995-005	Water	10/11/2012	B-6-CW03R (10112012)	X				
	B-1-CW28(10112012)	311995-006	Water	10/11/2012		X				
	C-1-CW05(10112012)	311995-007	Water	10/11/2012		X			X	X
	A-1-CW09(10112012)	311995-008	Water	10/11/2012		X				
	3851M(10112012)	311995-009	Water	10/11/2012					X	X
	B-1-CW17(10112012)	311995-010	Water	10/11/2012		X			X	X
	B-1-CW17 DUPLICATE (10112012)	311995-011	Water	10/11/2012	B1CW17 (10112012)				X	X
312080	B-1-CW25(10112012)	312080-001	Water	10/11/2012		X				
	TB101212	312080-002	Water	10/12/2012		X				
	MW-1(10122012)	312080-003	Water	10/12/2012		X	X		X	X
	MW-2(10122012)	312080-004	Water	10/12/2012		X	X		X	X
	C-1-CW03(10122012)	312080-005	Water	10/12/2012		X			X	X
	C-1-CW02(10122012)	312080-006	Water	10/12/2012		X			X	X
	C-1-CW03 DUPLICATE (10122012)	312080-007	Water	10/12/2012	C-1-CW03 (10122012)	X				
	EQUIPMENT BLANK (10122012)	312080-008	Water	10/12/2012		X	X		X	X
	B-5-CW03(10122012)	312080-009	Water	10/12/2012		X			X	X
	B-5-CW03 DUPLICATE (10122012)	312080-010	Water	10/12/2012	B-5-CW03 (10122012)				X	X

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	TPH	MET	MISC
312080	B-1-CW13(10122012)	312080-011	Water	10/12/2012		X				
	B-1-CW13 DUPLICATE (10122012)	312080-012	Water	10/12/2012	B-1-CW13 (10122012)	X				
	B-1-CW12(10122012)	312080-013	Water	10/12/2012		X			X	X
	B-1-CW12 DUPLICATE (10122012)	312080-014	Water	10/12/2012	B-1-CW12 (10122012)	X			X	X
	MW-3(10122012)	312080-015	Water	10/12/2012		X	X		X	X
312094	TB101312	312094-001	Water	10/13/2012		X				
	B-1-CW20(10132012)	312094-002	Water	10/13/2012		X				X
	C-1-CW06(10132012)	312094-003	Water	10/13/2012		X			X	X
	B-5-CW02(10132012)	312094-004	Water	10/13/2012		X			X	X
	M-W-6(10132012)	312094-005	Water	10/13/2012		X	X		X	X
	C-1-CW08(10132012)	312094-006	Water	10/13/2012		X			X	X
	3871G(10132012)	312094-007	Water	10/13/2012					X	X
312159	TB101512	312159-001	Water	10/15/2012		X				
	B-1-CW29(10152012)	312159-002	Water	10/15/2012		X				
	MW-4(10152012)	312159-003	Water	10/15/2012		X	X		X	X
	MW-7(10152012)	312159-004	Water	10/15/2012		X	X		X	X
	A-1-CW07(10152012)	312159-005	Water	10/15/2012		X			X	X
	EB101512 EQUIP BLANK	312159-006	Water	10/15/2012		X	X		X	X
	A-1-CW07-DUP (10152012)	312159-007	Water	10/15/2012	A-1-CW07 (10152012)	X				
312205	TB101612	312205-001	Water	10/16/2012		X				
	MW-8(10162012)	312205-002	Water	10/16/2012		X	X		X	X
	MW-8-DUP(10162012)	312205-003	Water	10/16/2012	MW-8 (10162012)		X			
	MW-5(10162012)	312205-004	Water	10/16/2012		X	X		X	X
	MW-5-DUP(10162012)	312205-005	Water	10/16/2012	MW-5 (10162012)	X			X	X
	B-6-CW16(10162012)	312205-006	Water	10/16/2012		X			X	X
	EB101612 EQUIP BLANK	312205-007	Water	10/16/2012		X	X		X	X

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B and 8270C-SIM with isotope dilution. Data were reviewed in accordance with the method specified criteria and USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- UB Compound considered non-detect at the listed value due to associated blank contamination.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis	Cool to 4±2 °C; pH < 2 with HCl
	Soil	48 hours from collection to extraction and 14 days from collection to analysis	Cool to 4±2 °C

The analyses that exceeded the holding time are presented in the following table; all other holding times were met.

Sample Location	Analyte	Holding Time Criteria	Analysis Completed
B-6-CW03R Duplicate C-1-CW05 B1CW17	1,2,3-Trichloropropane	14 Days	15 Days
B-1-CW12	1,2,3-Trichloropropane	14 Days	17 Days

Sample results for parameters that were analyzed past the recommended holding times were qualified as specified in the table below.

Criteria	Qualification	
	Detects	Non-detects
Analysis completed < 2x holding time	J	UJ
Analysis completed > 2x holding time	J	R

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were detected in the associated QA blanks; however, the associated sample results were non-detect. Therefore, qualification of the sample results was not required.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within 12-hours.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99, and a RRF value greater than control limit (0.05).

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial/ Continuing	Compound	Criteria
3850R B-1-CW27 3850N TB101012 B-6-CW01 TB101112 Equipment Blank (10/11) B-6-CW02 C-1-CW05 B1CW17 TB101512 B-1-CW29 MW-4 MW-7 A-1-CW07 EB101512 Equip Blank	ICV %RSD	Acetone 2-Butanone	%RSD > 15%
3850R B-1-CW27 3850N TB101012 B-6-CW01 TB101112 Equipment Blank (10/11) B-6-CW02 C-1-CW05	CCV %D	Bromomethane	%D > 20% (increase in sensitivity)

Sample Location	Initial/ Continuing	Compound	Criteria
B1CW17 TB101512 B-1-CW29 MW-4 MW-7 A-1-CW07 EB101512 Equip Blank	CCV %D	Bromomethane	%D > 20% (increase in sensitivity)
B-6-CW03R B-1-CW28 A-1-CW09 B-1-CW25 TB101212 MW-1 MW-2 C-1-CW03 C-1-CW02 C-1-CW03 Duplicate Equipment Blank (10/12) B-5-CW03 B-1-CW13 B-1-CW13 Duplicate B-1-CW12 B-1-CW12 Duplicate MW-3 TB101312 B-1-CW20 C-1-CW06 B-5-CW02 M-W-6 C-1-CW08 TB101612 MW-8 MW-5 B-6-CW16 EB101612 Equip Blank	ICV %RSD	Acetone 2-Butanone 4-Methyl-2-pentanone 1,2,4-Trichlorobenzene	%RSD > 15%
B-1-CW25 TB101212 MW-1 MW-2 C-1-CW03 Equipment Blank (10/12) B-5-CW03	CCV %D	Acetone Chloroethane	%D > 20% (decrease in sensitivity)

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01 ¹	Non-detect	R
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF > 0.05 or RRF > 0.01 ¹	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient < 0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > 20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

¹ RRF of 0.01 only applies to typically poor responding compounds (e.g. ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations C-1-CW05, C-1-CW02, and B-1-CW20 were used in the MS/MSD analyses. The MS/MSD exhibited acceptable recoveries and RPDs between the MS and MSD results.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit

recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 25% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
B-6-CW03R / B-6-CW03R-Duplicate	1,2,3-Trichloropropane	0.005 U	0.005 U	AC
C-1-CW03 / C-1-CW03 Duplicate	Chloroform	0.6	0.5	18.2 %
	Tetrachloroethene	4.9	5.6	13.3 %
B-1-CW13 / B-1-CW13 Duplicate	Freon 113	4.0	3.9	2.5 %
	1,1,2-Trichloroethane	0.8	0.8	0.0 %
	1,1-Dichloroethene	6.1	5.0	19.8 %
	1,2,3-Trichloropropane	17	16	6.1 %
	Carbon Tetrachloride	2.3	2.3	0.0 %
	Chloroform	17	16	6.1 %
	Tetrachloroethene	290	280	3.5 %
	Trichloroethene	310	280	10.2 %
B-1-CW12 / B-1-CW12 Duplicate	1,1-Dichloroethene	7.8	7.2	8.0 %
	Chloroform	1.8	1.8	0.0 %
	cis-1,2-Dichloroethene	5.3	5.1	3.8 %
	Tetrachloroethene	38	34	11.1 %
	Trichloroethene	110	100	9.5 %
A-1-CW07 / A-1-CW07-DUP	1,2,3-Trichloropropane	31	37	17.6 %
MW-5 / MW-5-DUP	1,2,3-Trichloropropane	0.8	0.8	0.0 %

AC Acceptable
U Not detected

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks		X	X		
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
 RPD Relative percent difference
 %RSD Relative standard deviation
 %D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (1,4-DIOXANE) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
USEPA 8270C-SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C
	Soil/ Sediment	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

The compound 1,4-dioxane was not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution are acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits, and that all SVOC surrogate recoveries be greater than ten percent.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC analysis to exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample location within these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 25% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8 / MW-8-DUP	1,4-Dioxane	8.8	8.7	1.1 %

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs (1,4-DIOXANE)

1,4-Dioxane: USEPA 8270C-SIM with Isotope Dilution	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding Times		X		X	
Reporting Limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment/Field Blanks		X	X		
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD RPD					X
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System Performance and Column Resolution		X		X	
Initial Calibration %RSDs		X		X	
Continuing Calibration RRFs		X		X	
Continuing Calibration %Ds		X		X	
Instrument Tune and Performance Check		X		X	
Ion Abundance Criteria for Each Instrument Used		X		X	
Internal Standards		X		X	
Compound Identification and Quantitation					
A. Reconstructed Ion Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of Sample Compounds Within the Established RT Windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting Limits Adjusted for Sample Dilutions		X		X	

%R Percent Recovery
 RPD Relative Percent Difference
 %RSD Relative Standard Deviation
 %D Percent Difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 200.7, 6010B, 218.6, and 300.0, and Standard Methods (SM) 2320B, 2510B, 2540C, 4500-H+B, 4500-Si-C, and 5310B. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
USEPA 200.7, SW-846 6010B	Water	180 days from collection to analysis	Cool to 4±2 °C; pH < 2 with HNO ₃
	Soil	180 days from collection to analysis	Cool to 4±2 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminant analytes are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Location	Analyte	Sample Result	Qualification
C-1-CW05 3851M	Chromium	Detected sample results < RL and < BAL	"UB" at the RL

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All initial and continuing calibration verification standard recoveries were within the control limits.

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the RL standard analysis are presented below in the RL standards evaluation table.

All RL standard recoveries were within the control limits.

3.4 ICP Interference Check Standard (ICS)

The ICS verifies the laboratories inter-element and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample results are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier "N" will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations 3850N, C-1-CW05, and MW-8 were used in the MS/MSD analyses. The MS/MSD exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

MS/MSD analysis was performed in lieu of the laboratory duplicate sample analysis. The MS/MSD exhibited acceptable RPDs.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. Post Digestion Spike (PDS) Analysis

The PDS analysis is used to assess the accuracy of the analytical method independent of the preparatory digestion process. All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The PDS recovery control limits do not apply for PDS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the PDS spiking concentration by a factor of four or greater. In the instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed. Sample results associated with PDS exceedances where the parent samples are not site-specific are not qualified.

The PDS analysis was not performed on a sample location within these SDGs.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution analysis was not performed on a sample location within these SDGs.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 20% for water matrices and 35% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

The field duplicate sample results (in mg/L) are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
B-1-CW17 / B-1-CW17 Duplicate	Chromium	0.027	0.026	3.8 %
B-5-CW03 / B-5-CW03 Duplicate	Chromium	0.007 J	0.004 J	AC
B-1-CW12 B-1-CW12 Duplicate	Calcium	119	123	3.3 %
	Magnesium	36.8	37.4	1.6 %

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
MW-5 MW-5-DUP	Thallium	0.005 U	0.005 U	AC

AC Acceptable

J Estimated (result is < RL)

U Not detected

The field duplicate sample results are acceptable.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: USEPA 200.7/6010B/7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP)					
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X	X		
C. Equipment/Field Blanks		X	X		
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) Accuracy (%R)		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Post-Digestion Spike (PDS) Accuracy (%R)					X
Post-Digestion Spike Duplicate (PDSD) %R					X
PDS/PDSD Precision (RPD)					X
Laboratory Duplicate Sample RPD					X
Field Duplicate Sample RPD		X		X	
ICP Serial Dilution					X
Dilution Factor		X		X	
Dissolved vis-à-vis Total Results					X
Moisture Content					X
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
RL Standard		X		X	
ICP Interference Check		X		X	
Quantitation transcriptions/calculations		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R – Percent recovery

RPD – Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Alkalinity by SM 2320B	Water	14 days from collection to analysis	Cool to 4±2 °C
Chloride, Fluoride, Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to 4±2 °C
Nitrate-N, Nitrite-N by EPA 300.0	Water	48 hours from collection to analysis	Cool to 4±2 °C
Hexavalent Chromium by EPA 218.6	Water	Unpreserved: 24 hours from collection to analysis	Cool to 4±2 °C
		Preserved: 28 days from collection to analysis	Cool to 4±2 °C; pH of 9-9.5
pH by SM 4500-H+B	Water	ASAP	None
Silica by SM 4500-Si-C	Water	28 days from collection to analysis	Cool to 4±2 °C
Specific conductance by SM 2510B	Water	28 days from collection to analysis	Cool to 4±2 °C
Total Dissolved Solids by SM 2540C	Water	7 days from collection to analysis	Cool to 4±2 °C
Total Organic Carbon by SM 5310B	Water	28 days from collection to analysis	Cool to 4±2 °C; pH of < 2.

The analyses that exceeded the holding time are presented in the following table.

Sample Location	Analyte	Analysis Completed	HT Criteria
Equipment Blank (10/11)	Nitrate	105 Hours	48 Hours
	Nitrite	105 Hours	48 Hours

Sample results were qualified as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed < 2x holding time	J	UJ
Analysis completed > 2x holding time	J	R

Note: Due to the ready conversion of nitrite into nitrate, nitrate results for samples analyzed greater than 48 hours after collection should be considered as nitrate+nitrite. The nitrate and nitrite results for the equipment blank collected 10/11/2012 were non-detects and therefore do not require qualification.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminants are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, no qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All analytes associated with the initial and continuing calibrations were within the specified control limits. The correct frequency and type of standards were analyzed.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) / Laboratory Duplicate Analyses

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. When a MSD analysis is performed, the relative percent difference (RPD) between the MS/MSD results must be within the established acceptance limits of 20% for water matrices and 35% for soil matrices.

Note: The MS/MSD control limits do not apply for MS/MSD analyses performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations B-1-CW17, B-1-CW12, B-1-CW12 Duplicate, MW-3, B-1-CW20, and B-5-CW02 were used in the MS/MSD analyses. The MS/MSD exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the reporting limit (RL). A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

The laboratory duplicate sample results exhibited RPDs within the control limit.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 20% for water matrices and 35% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
B-1-CW17 / B-1-CW17 Duplicate	Chromium VI	24.2	25.1	3.7 %
B-5-CW03 / B-5-CW03 Duplicate	Chromium VI	1.41	1.39	1.4 %
B-1-CW12 / B-1-CW12 Duplicate	Chloride	64.1	62	3.3 %
	Fluoride (F-, Anion)	0.39	0.36	8.0 %
	Nitrate-N	12.8	13.1	2.3 %
	Sulfate	88	88.2	0.2 %
	Alkalinity	295	295	0.0 %
	Bicarbonate (as HCO ₃)	360	360	0.0 %
	Specific Conductivity	959	971	1.2 %
	Total Dissolved Solids	508	508	0.0 %
	pH	7.59	7.62	0.4 %
	Silica Dioxide	33.8	31.3	7.7 %

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
MW-5 / MW-5-DUP	Nitrate-N	14.5	14.3	1.4 %

The field duplicate sample results are acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 218.6, 300.0, SM 2320B, 2510B, 2540C, 4500-H+B, 4500-Si-C, & 5310B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X	X		
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Quantitation transcriptions/calculations		X		X	
Reporting limits adjusted for sample dilutions		X		X	

%RSD – relative standard deviation

%R – percent recovery

RPD – relative percent difference

%D – difference

Validation Performed By: Dennis Dyke

Signature: 

Date: November 14, 2012

Peer Review: Rachelle Borne

Date: November 19, 2012

**CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS**



Lab Job No. 311877
Page 1 of 1

CUSTOMER INFORMATION

COMPANY: ACADIS PROJECT NAME: BAU BURBANK

SEND REPORT TO: ERIK GAISER NUMBER: 800 38187.000.0001

EMAIL: BA file ADDRESS: BURBANK, CA

PHONE: BA file PO. #: BA file

SAMPLED BY: H. Tauscher / H. Armstrong

REQUIRED TURN AROUND TIME:
72 Hours: 48 Hours: 24 Hours:

Standard: X

Test Instructions & Comments

ANALYSIS REQUEST
VOC's 8240B
1,2,3 TcP 525.3 (air)
Hexavalent Chromium
Total Chromium

VOC's 8240B
also tested for
freon & MTBE

Sample ID	Date	Time	Matrix	Container Number/Size	Pres.
1 3856L	10/10/12	1249	W	3 VOA5	HCL X
2 B-1-CW27	10/10/12	1021	W	6 VOA5	HCL X
3 3856N	10/10/12	1227	W	8	HCL X X X
4 TB101012	10/10/12	0730	W	2 VOA5	HCL X
5 B-6-CW02	10/10/12	1613	W	3 VOA5	HCL X
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Total No. of Samples: 22

Method of Shipment: overnight

Preservative: 1 = Ice 2 = HCl 3 = HNO₃ 4 = H₂SO₄ 5 = NaOH 6 = Other

Relinquished by: 1. Erika Tauscher 2. Erika Tauscher 3. Erika Tauscher

Signature: Erika Tauscher Erika Tauscher Erika Tauscher

Printed Name: Erika Tauscher Erika Tauscher Erika Tauscher

Date: 10/10/12 10-10 10-10-12

Time: 1420 505 420

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 12:49	Site:	Notes:
Sample #: 311877-001	Client Sample #: 3850R	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B		QCBatchID: QC1130649					
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	0.9	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00003

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 12:49	Site:	Notes:
Sample #: 311877-001	Client Sample #: 3850R	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	140	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	12	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	93	70-145	
4-Bromofluorobenzene (SUR)	97	70-145	
Dibromodifluoromethane (SUR)	91	70-145	
Toluene-d8 (SUR)	101	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 000004

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 10:21	Site:	Notes:
Sample #: 311877-002	Client Sample #: B-1-CW27	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B		QCBatchID: QC1130649					
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND <i>UJ</i>	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND <i>UJ</i>	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00005

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 10:21	Site:	Notes:
Sample #: 311877-002	Client Sample #: B-1-CW27	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	8.9	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	3.8	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	95	70-145	
4-Bromofluorobenzene (SUR)	95	70-145	
Dibromodifluoromethane (SUR)	94	70-145	
Toluene-d8 (SUR)	102	70-145	

Method: EPA 8260M	Prep Method: EPA 5030B	QCBatchID: QC1130672
1,2,3-Trichloropropane	ND	1 0.005 0.005 ug/L 10/18/12 akk

Analyte	% Recovery	Limits	Notes
Toluene-d8 (SUR)	123	50-150	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 000006

CONFIDENTIAL

LMC-PET-00002267

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 12:27	Site:	Notes:
Sample #: 311877-003	Client Sample #: 3850N	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 218.6	Prep Method: EPA 218.6							QCBatchID: QC1130675
Hexavalent Chromium	1.0	1	0.1	1	ug/L	10/16/12	rybechay	
Method: EPA 6010 NELAC	Prep Method: EPA 3010A							QCBatchID: QC1130591
Chromium	0.015	1	0.002	0.01	mg/L	10/17/12	nina	
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130649
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND <i>US</i>	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND <i>US</i>	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	1.4	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	1.4	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	1.1	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00007

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 12:27	Site:	Notes:
Sample #: 311877-003	Client Sample #: 3850N	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	130	10	1.5	5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	94	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	95	70-145	
4-Bromofluorobenzene (SUR)	100	70-145	
Dibromodifluoromethane (SUR)	92	70-145	
Toluene-d8 (SUR)	100	70-145	

Method: EPA 8260M	Prep Method: EPA 5030B	QC BatchID: QC1130672
1,2,3-Trichloropropane	0.085	5 0.025 0.025 ug/L 10/18/12 akk

Analyte	% Recovery	Limits	Notes
Toluene-d8 (SUR)	98	50-150	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB : 000008

CONFIDENTIAL

LMC-PET-00002269

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 07:30	Site:	Notes:
Sample #: 311877-004	Client Sample #: TB101012	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B		QCBatchID: QC1130649					
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND 0.5	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND 0.5	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report
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ALAB: 00009

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 07:30	Site:	Notes:
Sample #: 311877-004	Client Sample #: TB101012	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Teri-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Teri-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	98	70-145	
4-Bromofluorobenzene (SUR)	97	70-145	
Dibromodifluoromethane (SUR)	96	70-145	
Toluene-d8 (SUR)	100	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report
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ALAB : 00010

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 16:13	Site:	Notes:
Sample #: 311877-005	Client Sample #: B-6-CW01	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B		QCBatchID: QC1130649					
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND 0.5	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND 0.5	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB: 00011

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/10/2012 16:13	Site:	Notes:
Sample #: 311877-005	Client Sample #: B-6-CW01	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	97	70-145	
4-Bromofluorobenzene (SUR)	98	70-145	
Dibromodifluoromethane (SUR)	96	70-145	
Toluene-d8 (SUR)	100	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB : 000012

Chain of Custody Record

Lab Job No. 311995

CUSTOMER INFORMATION				PROJECT INFORMATION				REQUIRED TURN AROUND TIME:			
COMPANY		PROJECT NAME		72 Hours:		Standard: ☒					
SEND REPORT TO:		NUMBER:		48 Hours:		24 Hours:					
EMAIL:		ADDRESS:									
PHONE:		PO #:									
ACAP 15		PDU Partant									
ERIK Gaiser		10038189.0000.00001									
OR file		Partant, CA									
SAMPLED BY: H. Truesher, H. Armstrong											
Sample ID	Date	Time	Matrix	Container Number/Size	Pres.	ANALYSIS REQUEST					
1 TB10112	10/11/12	0715	W	2 VAS	HEL	VOCs 82603-7					
2 B-10112 Equipment Blank	10/11/12	0730	W	11 VariouS	various	1, 2, 3 TCP					
3 B-6-CUD2	10/11/12	1010	W	3 VAS	HEL	total chrome (if needed)					
4 B-6-CUD3R	10/11/12	1020	W	4 VAS	HEL	Hex. chrome					
5 B-6-CUD3L Duplicate	10/11/12	1025	W	3 VAS	HEL	Nitrate/Nitrite					
6 B-1-CUD38	10/11/12	1249	W	3 VAS	HEL	TPS					
7 C-1-CUD5	10/11/12	1500	W	8 variouS	HEL	General Minerals					
8 A-1-CUD9	10/11/12	1519	W	3 VAS	HEL						
9 3851M	10/11/12	1229	W	2	HN3						
10 BACW17	10/11/12	1241	W	15 variouS	HEL						
11 B-1-CUD7 Duplicate	10/11/12	1241	W	2 polyS	HN3						
12											
13											
14											
15											

ANALYSIS REQUEST
 VOCs 82603-7
 1, 2, 3 TCP
 total chrome (if needed)
 Hex. chrome
 Nitrate/Nitrite
 TPS
 General Minerals

Test Instructions & Comments

ALAB : 0004

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 07:15	Site:	Notes:
Sample #: 311995-001	Client Sample #: TB101112	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QC Batch ID: QC1130649
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyltertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 000003

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 07:15	Site:	Notes:
Sample #: 311995-001	Client Sample #: TB101112	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	93	70-145	
4-Bromofluorobenzene (SUR)	97	70-145	
Dibromodifluoromethane (SUR)	91	70-145	
Toluene-d8 (SUR)	100	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 000004

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 07:30	Site:	Notes:
Sample #: 311995-002	Client Sample #: Equipment Blank	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 200.7	Prep Method: EPA 3010A						QCBatchID:	
Calcium	0.075 J	1	0.038	0.1	mg/L	10/17/12	nina	
Magnesium	0.047 J	1	0.016	0.1	mg/L	10/17/12	nina	
Method: EPA 218.6	Prep Method: EPA 218.6						QCBatchID: QC1130675	
Hexavalent Chromium	ND	1		1	ug/L	10/16/12	rybechay	
Method: EPA 300.0	Prep Method: Method						QCBatchID: QC1130554	
Chloride	ND	1		1	mg/L	10/15/12	wei	
Sulfate	ND	1		1	mg/L	10/15/12	wei	
Nitrate, as Nitrogen	ND	1		0.1	mg/L	10/15/12	wei	
Nitrite, as Nitrogen	ND	1		0.1	mg/L	10/15/12	wei	
Fluoride	ND	1		0.2	mg/L	10/15/12	wei	
Method: EPA 6010 NELAC	Prep Method: EPA 3010A/Filtered						QCBatchID: QC1130580	
Chromium	0.003 J	1	0.002	0.01	mg/L	10/17/12	nina	
Method: EPA 8260 NELAC	Prep Method: EPA 5030B						QCBatchID: QC1130649	
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND <i>US</i>	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND <i>US</i>	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00005

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 07:30	Site:	Notes:
Sample #: 311995-002	Client Sample #: Equipment Blank	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DiPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyltertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	3.1	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	95	70-145	
4-Bromofluorobenzene (SUR)	96	70-145	
Dibromodifluoromethane (SUR)	94	70-145	
Toluene-d8 (SUR)	97	70-145	

Method: EPA 8260M	Prep Method: EPA 5030B	QCBatchID: QC1130838
1,2,3-Trichloropropane	ND	1 0.005 0.005 ug/L 10/23/12 akk

Analyte	% Recovery	Limits	Notes
Toluene-d8 (SUR)	115	50-150	

Method: SM 2320-B	Prep Method: Method	QCBatchID: QC1130512
Bicarbonate (HCO3)	ND	1 1 5 mg/L 10/15/12 hanhkhong
Carbonate (CO3)	ND	1 0.7 5 mg/L 10/15/12 hanhkhong
Hydroxide (OH)	ND	1 0.3 5 mg/L 10/15/12 hanhkhong

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00006

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 07:30	Site:	Notes:
Sample #: 311995-002	Client Sample #: Equipment Blank	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Total Alkalinity (as CaCO3)	ND	1	1.8	5	mg/L	10/15/12	hanhkhong	
Method: SM 2510-B	Prep Method: Method						QCBatchID:	
Specific Conductance	1.08	1		1	umhos/cm	10/16/12	rvenal	
Method: SM 2540-C	Prep Method: Method						QCBatchID: QC1130545	
Total Dissolved Solids	ND	1	5.7	10	mg/L	10/15/12	rvenal	
Method: SM 4500-H+B	Prep Method: Method						QCBatchID:	
pH	5.88	1			pH Units	10/15/12	robert	
Method: SM 4500-Si-C	Prep Method: Method						QCBatchID: QC1130568	
Silica	ND	1	0.1	1	mg/L	10/16/12	cathy	
Method: SM 5310B	Prep Method: Method						QCBatchID: QC1130712	
Total Organic Carbon (TOC)	ND	1		0.5	mg/L	10/19/12	quang	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00007

Matrix: Water
Sampled: 10/11/2012 10:10
Sample #: 311995-003

Client: ARCADIS
Site:
Client Sample #: B-6-CW02

Collector: Client
Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130649
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	Liaoyuanz	
2-Butanone (MEK)	ND <i>US</i>	1	0.3	5	ug/L	10/17/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	Liaoyuanz	
Acetone	ND <i>US</i>	1	0.2	10	ug/L	10/17/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/17/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 000008

Matrix: Water
 Sampled: 10/11/2012 10:10
 Sample #: 311995-003

Client: ARCADIS
 Site:
 Client Sample #: B-6-CW02

Collector: Client
 Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	Liaoyuanz	
Tetrachloroethene	ND	1	0.15	0.5	ug/L	10/17/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	Liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/17/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	95	70-145	
4-Bromofluorobenzene (SUR)	97	70-145	
Dibromodifluoromethane (SUR)	94	70-145	
Toluene-d8 (SUR)	100	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00009

Matrix: Water
Sampled: 10/11/2012 10:20
Sample #: 311995-004

Client: ARCADIS
Site:
Client Sample #: B-6-CW03R

Collector: Client
Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130739
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND <i>US</i>	1	0.068	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/19/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/19/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/19/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/19/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/19/12	Liaoyuanz	
2-Butanone (MEK)	ND <i>US</i>	1	0.3	5	ug/L	10/19/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/19/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/19/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/19/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND <i>US</i>	1	0.16	5	ug/L	10/19/12	Liaoyuanz	
Acetone	ND <i>US</i>	1	0.2	10	ug/L	10/19/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/19/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/19/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/19/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/19/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/19/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/19/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/19/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/19/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/19/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/19/12	Liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/19/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00010

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 10:20	Site:	Notes:
Sample #: 311995-004	Client Sample #: B-6-CW03R	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/19/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/19/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/19/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/19/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/19/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/19/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/19/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/19/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/19/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/19/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/19/12	Liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/19/12	Liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/19/12	Liaoyuanz	
Tetrachloroethene	17	1	0.15	0.5	ug/L	10/19/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/19/12	Liaoyuanz	
Trichloroethene	4.2	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/19/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	114	70-145	
4-Bromofluorobenzene (SUR)	109	70-145	
Dibromodifluoromethane (SUR)	104	70-145	
Toluene-d8 (SUR)	103	70-145	

Method: EPA 8260M		Prep Method: EPA 5030B				QCBatchID: QC1130844		
1,2,3-Trichloropropane		ND	1	0.005	0.005	ug/L	10/24/12	akk
<u>Analyte</u>		<u>% Recovery</u>		<u>Limits</u>		<u>Notes</u>		
Toluene-d8 (SUR)		97		50-150				

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00011

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 10:25	Site:	Notes:
Sample #: 311995-005	Client Sample #: B-6-CW03R Duplicate	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260M	Prep Method: EPA 5030B							QCBatchID: QC1130929
1,2,3-Trichloropropane	ND	US 1	0.005	0.005	ug/L	10/26/12	akk	
Analyte	% Recovery	Limits	Notes					
Toluene-d8 (SUR)	126	50-150						

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 12:49	Site:	Notes:
Sample #: 311995-006	Client Sample #: B-1-CW28	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130739
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/19/12	Liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/19/12	Liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/19/12	Liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/19/12	Liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/19/12	Liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/19/12	Liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/19/12	Liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/19/12	Liaoyuanz	
2-Butanone (MEK)	ND	1	0.3	5	ug/L	10/19/12	Liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/19/12	Liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/19/12	Liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/19/12	Liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/19/12	Liaoyuanz	
Acetone	ND	1	0.2	10	ug/L	10/19/12	Liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/19/12	Liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/19/12	Liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/19/12	Liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/19/12	Liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/19/12	Liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/19/12	Liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/19/12	Liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/19/12	Liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/19/12	Liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/19/12	Liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/19/12	Liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/19/12	Liaoyuanz	
Ethyl-terbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/19/12	Liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00012

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 12:49	Site:	Notes:
Sample #: 311995-006	Client Sample #: B-1-CW28	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/19/12	Liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/19/12	Liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/19/12	Liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/19/12	Liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/19/12	Liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/19/12	Liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/19/12	Liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/19/12	Liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/19/12	Liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/19/12	Liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/19/12	Liaoyuanz	
Terf-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/19/12	Liaoyuanz	
Terf-butylbenzene	ND	1	0.092	0.5	ug/L	10/19/12	Liaoyuanz	
Tetrachloroethene	46	1	0.15	0.5	ug/L	10/19/12	Liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/19/12	Liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/19/12	Liaoyuanz	
Trichloroethene	3.9	1	0.078	0.5	ug/L	10/19/12	Liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/19/12	Liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/19/12	Liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/19/12	Liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	110	70-145	
4-Bromofluorobenzene (SUR)	111	70-145	
Dibromodifluoromethane (SUR)	104	70-145	
Toluene-d8 (SUR)	102	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB : 00013

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 15:00	Site:	Notes:
Sample #: 311995-007	Client Sample #: C-1-CW05	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 218.6	Prep Method: EPA 218.6							QCBatchID: QC1130675
Hexavalent Chromium	ND	1	0.1	1	ug/L	10/16/12	rybechay	
Method: EPA 6010 NELAC	Prep Method: EPA 3010A/Filtered							QCBatchID: QC1130580
Chromium	ND 0.004 UB	1	0.002	0.01	mg/L	10/17/12	nina	
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130649
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/16/12	liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/16/12	liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/16/12	liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/16/12	liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/16/12	liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/16/12	liaoyuanz	
1,1-Dichloroethene	ND	1	0.13	0.5	ug/L	10/16/12	liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/16/12	liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/16/12	liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/16/12	liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/16/12	liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/16/12	liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/16/12	liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/16/12	liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/16/12	liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/16/12	liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/16/12	liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/16/12	liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/16/12	liaoyuanz	
2-Butanone (MEK)	ND 0.5	1	0.3	5	ug/L	10/16/12	liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/16/12	liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/16/12	liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/16/12	liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/16/12	liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/16/12	liaoyuanz	
Acetone	ND 0.5	1	0.2	10	ug/L	10/16/12	liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/16/12	liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/16/12	liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/16/12	liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/16/12	liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/16/12	liaoyuanz	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/16/12	liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/16/12	liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/16/12	liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/16/12	liaoyuanz	
Chloroform	ND	1	0.044	0.5	ug/L	10/16/12	liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/16/12	liaoyuanz	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/16/12	liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/16/12	liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/16/12	liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00014

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 15:00	Site:	Notes:
Sample #: 311995-007	Client Sample #: C-1-CW05	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Dibromomethane	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/16/12	liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/16/12	liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/16/12	liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/16/12	liaoyuanz	
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/16/12	liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/16/12	liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/16/12	liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/16/12	liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/16/12	liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/16/12	liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/16/12	liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/16/12	liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/16/12	liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/16/12	liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/16/12	liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/16/12	liaoyuanz	
Teri-amylnethylether (TAME)	ND	1	0.13	0.5	ug/L	10/16/12	liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/16/12	liaoyuanz	
Tetrachloroethene	0.8	1	0.15	0.5	ug/L	10/16/12	liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/16/12	liaoyuanz	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/16/12	liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/16/12	liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/16/12	liaoyuanz	
Trichloroethene	ND	1	0.078	0.5	ug/L	10/16/12	liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/16/12	liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/16/12	liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/16/12	liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	98	70-145	
4-Bromofluorobenzene (SUR)	100	70-145	
Dibromodifluoromethane (SUR)	98	70-145	
Toluene-d8 (SUR)	103	70-145	

Method: EPA 8260M	Prep Method: EPA 5030B	QC BatchID: QC1130929
1,2,3-Trichloropropane	ND 1.5 1	0.005 0.005 ug/L 10/26/12 akk

Analyte	% Recovery	Limits	Notes
Toluene-d8 (SUR)	103	50-150	High amount of Surr3, but no hits for 1,2,3-TCP

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00015

Matrix: Water
Sampled: 10/11/2012 15:19
Sample #: 311995-008

Client: ARCADIS
Site:
Client Sample #: A-1-CW09

Collector: Client
Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC	Prep Method: EPA 5030B							QCBatchID: QC1130739
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/20/12	nicollez	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/20/12	nicollez	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/20/12	nicollez	
1,1,2-Trichloroethane	6.5	1	0.045	0.5	ug/L	10/20/12	nicollez	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/20/12	nicollez	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/20/12	nicollez	
1,1-Dichloroethene	1.1	1	0.13	0.5	ug/L	10/20/12	nicollez	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
1,2,3-Trichloropropane	8.9	1	0.073	0.5	ug/L	10/20/12	nicollez	
1,2,4-Trichlorobenzene	ND <i>US</i>	1	0.068	0.5	ug/L	10/20/12	nicollez	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/20/12	nicollez	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/20/12	nicollez	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/20/12	nicollez	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/20/12	nicollez	
1,2-Dichloroethane	0.8	1	0.066	0.5	ug/L	10/20/12	nicollez	
1,2-Dichloropropane	1.1	1	0.06	0.5	ug/L	10/20/12	nicollez	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/20/12	nicollez	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/20/12	nicollez	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/20/12	nicollez	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/20/12	nicollez	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/20/12	nicollez	
2-Butanone (MEK)	ND <i>US</i>	1	0.3	5	ug/L	10/20/12	nicollez	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/20/12	nicollez	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/20/12	nicollez	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/20/12	nicollez	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/20/12	nicollez	
4-Methyl-2-pentanone (MIBK)	ND <i>US</i>	1	0.16	5	ug/L	10/20/12	nicollez	
Acetone	ND <i>US</i>	1	0.2	10	ug/L	10/20/12	nicollez	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/20/12	nicollez	
Benzene	ND	1	0.071	0.5	ug/L	10/20/12	nicollez	
Bromobenzene	ND	1	0.073	1	ug/L	10/20/12	nicollez	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
Bromoform	ND	1	0.053	0.5	ug/L	10/20/12	nicollez	
Bromomethane	ND	1	0.13	1	ug/L	10/20/12	nicollez	
Carbon Tetrachloride	1.4	1	0.045	0.5	ug/L	10/20/12	nicollez	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/20/12	nicollez	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/20/12	nicollez	
Chloroethane	ND	1	0.4	0.5	ug/L	10/20/12	nicollez	
Chloroform	5.9	1	0.044	0.5	ug/L	10/20/12	nicollez	
Chloromethane	ND	1	0.055	0.5	ug/L	10/20/12	nicollez	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/20/12	nicollez	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/20/12	nicollez	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/20/12	nicollez	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/20/12	nicollez	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/20/12	nicollez	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/20/12	nicollez	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/20/12	nicollez	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00016

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 15:19	Site:	Notes:
Sample #: 311995-008	Client Sample #: A-1-CW09	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/20/12	nicollez	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/20/12	nicollez	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/20/12	nicollez	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/20/12	nicollez	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/20/12	nicollez	
Naphthalene	ND	1	0.061	0.5	ug/L	10/20/12	nicollez	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/20/12	nicollez	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/20/12	nicollez	
o-Xylene	ND	1	0.075	0.5	ug/L	10/20/12	nicollez	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/20/12	nicollez	
Styrene	ND	1	0.088	0.5	ug/L	10/20/12	nicollez	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/20/12	nicollez	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/20/12	nicollez	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/20/12	nicollez	
Tetrachloroethene	21	1	0.15	0.5	ug/L	10/20/12	nicollez	
Toluene	ND	1	0.078	0.5	ug/L	10/20/12	nicollez	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/20/12	nicollez	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/20/12	nicollez	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/20/12	nicollez	
Trichloroethene	16	1	0.078	0.5	ug/L	10/20/12	nicollez	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/20/12	nicollez	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/20/12	nicollez	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/20/12	nicollez	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	110	70-145	
4-Bromofluorobenzene (SUR)	111	70-145	
Dibromodifluoromethane (SUR)	102	70-145	
Toluene-d8 (SUR)	103	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00017

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 11:29	Site:	Notes:
Sample #: 311995-009	Client Sample #: 3851M	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 218.6	Prep Method: EPA 218.6							QCBatchID: QC1130675
Hexavalent Chromium	1.42	1		1	ug/L	10/16/12	rybechay	
Method: EPA 6010 NELAC	Prep Method: EPA 3010A/Filtered							QCBatchID: QC1130580
Chromium	ND 0.005-UB	1	0.002	0.01	mg/L	10/17/12	nina	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

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ALAB: 00018

Matrix: Water
Sampled: 10/11/2012 12:41
Sample #: 311995-010

Client: ARCADIS
Site:
Client Sample #: B1CW17

Collector: Client
Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 200.7		Prep Method: EPA 3010A				QCBatchID: QC1130599		
Calcium	118	1	0.038	0.1	mg/L	10/17/12	nina	
Magnesium	33.8	1	0.016	0.1	mg/L	10/17/12	nina	
Method: EPA 218.6		Prep Method: EPA 218.6				QCBatchID: QC1130675		
Hexavalent Chromium	24.2	1		1	ug/L	10/16/12	rybechay	
Method: EPA 300.0		Prep Method: Method				QCBatchID: QC1130493		
Chloride	66.8	1	0.1	1	mg/L	10/12/12	wei	
Sulfate	102	1	0.12	1	mg/L	10/12/12	wei	
Nitrate, as Nitrogen	17.5	2	0.12	0.2	mg/L	10/12/12	wei	
Nitrite, as Nitrogen	ND	1	0.018	0.1	mg/L	10/12/12	wei	
Fluoride	0.34	1	0.04	0.2	mg/L	10/12/12	wei	
Method: EPA 6010 NELAC		Prep Method: EPA 3010A/Filtered				QCBatchID: QC1130580		
Chromium	0.027	1	0.002	0.01	mg/L	10/17/12	nina	
Method: EPA 8260 NELAC		Prep Method: EPA 5030B				QCBatchID: QC1130649		
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/17/12	liaoyuanz	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/17/12	liaoyuanz	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/17/12	liaoyuanz	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/17/12	liaoyuanz	
1,1,2-Trichlorotrifluoroethane	ND	1	0.119	0.5	ug/L	10/17/12	liaoyuanz	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/17/12	liaoyuanz	
1,1-Dichloroethene	0.5	1	0.13	0.5	ug/L	10/17/12	liaoyuanz	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/17/12	liaoyuanz	
1,2,4-Trichlorobenzene	ND	1	0.068	0.5	ug/L	10/17/12	liaoyuanz	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/17/12	liaoyuanz	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/17/12	liaoyuanz	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/17/12	liaoyuanz	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/17/12	liaoyuanz	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/17/12	liaoyuanz	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/17/12	liaoyuanz	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/17/12	liaoyuanz	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/17/12	liaoyuanz	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/17/12	liaoyuanz	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/17/12	liaoyuanz	
2-Butanone (MEK)	ND <i>0.5</i>	1	0.3	5	ug/L	10/17/12	liaoyuanz	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/17/12	liaoyuanz	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/17/12	liaoyuanz	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/17/12	liaoyuanz	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/17/12	liaoyuanz	
4-Methyl-2-pentanone (MIBK)	ND	1	0.16	5	ug/L	10/17/12	liaoyuanz	
Acetone	ND <i>0.5</i>	1	0.2	10	ug/L	10/17/12	liaoyuanz	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	liaoyuanz	
Benzene	ND	1	0.071	0.5	ug/L	10/17/12	liaoyuanz	
Bromobenzene	ND	1	0.073	1	ug/L	10/17/12	liaoyuanz	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
Bromoform	ND	1	0.053	0.5	ug/L	10/17/12	liaoyuanz	
Bromomethane	ND	1	0.13	1	ug/L	10/17/12	liaoyuanz	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

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ALAB: 00019

Matrix: Water
 Sampled: 10/11/2012 12:41
 Sample #: 311995-010

Client: ARCADIS
 Site:
 Client Sample #: B1CW17

Collector: Client
 Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/17/12	liaoyuanz	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/17/12	liaoyuanz	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/17/12	liaoyuanz	
Chloroethane	ND	1	0.4	0.5	ug/L	10/17/12	liaoyuanz	
Chloroform	3.5	1	0.044	0.5	ug/L	10/17/12	liaoyuanz	
Chloromethane	ND	1	0.055	0.5	ug/L	10/17/12	liaoyuanz	
cis-1,2-Dichloroethene	6.2	1	0.055	0.5	ug/L	10/17/12	liaoyuanz	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/17/12	liaoyuanz	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	liaoyuanz	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/17/12	liaoyuanz	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/17/12	liaoyuanz	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/17/12	liaoyuanz	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/17/12	liaoyuanz	
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/17/12	liaoyuanz	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/17/12	liaoyuanz	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/17/12	liaoyuanz	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/17/12	liaoyuanz	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/17/12	liaoyuanz	
Naphthalene	ND	1	0.061	0.5	ug/L	10/17/12	liaoyuanz	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/17/12	liaoyuanz	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/17/12	liaoyuanz	
o-Xylene	ND	1	0.075	0.5	ug/L	10/17/12	liaoyuanz	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/17/12	liaoyuanz	
Styrene	ND	1	0.088	0.5	ug/L	10/17/12	liaoyuanz	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/17/12	liaoyuanz	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/17/12	liaoyuanz	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/17/12	liaoyuanz	
Tetrachloroethene	81	1	0.15	0.5	ug/L	10/17/12	liaoyuanz	
Toluene	ND	1	0.078	0.5	ug/L	10/17/12	liaoyuanz	
trans-1,2-dichloroethene	0.7	1	0.17	0.5	ug/L	10/17/12	liaoyuanz	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/17/12	liaoyuanz	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/17/12	liaoyuanz	
Trichloroethene	120	1	0.078	0.5	ug/L	10/17/12	liaoyuanz	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/17/12	liaoyuanz	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/17/12	liaoyuanz	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/17/12	liaoyuanz	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	95	70-145	
4-Bromofluorobenzene (SUR)	98	70-145	
Dibromodifluoromethane (SUR)	94	70-145	
Toluene-d8 (SUR)	100	70-145	

Method: EPA 8260M

Prep Method: EPA 5030B

QCBatchID: QC1130929

1,2,3-Trichloropropane	ND	0.5	1	0.005	0.005	ug/L	10/26/12	akk
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Analyte	% Recovery	Limits	Notes
Toluene-d8 (SUR)	98	50-150	High amount of Surr3, but no hits for 1,2,3-TCP

Method: SM 2320-B

Prep Method: Method

QCBatchID: QC1130512

Bicarbonate (HCO3)	336	1	1	5	mg/L	10/15/12	hanhkhong
Carbonate (CO3)	ND	1	0.7	5	mg/L	10/15/12	hanhkhong
Hydroxide (OH)	ND	1	0.3	5	mg/L	10/15/12	hanhkhong

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB: 00020

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 12:41	Site:	Notes:
Sample #: 311995-010	Client Sample #: B1CW17	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Total Alkalinity (as CaCO3)	275	1	1.8	5	mg/L	10/15/12	hanhkhong	
Method: SM 2510-B	Prep Method: Method						QCBatchID:	
Specific Conductance	1000	1		1	umhos/cm	10/12/12	ame	
Method: SM 2540-C	Prep Method: Method						QCBatchID: QC1130496	
Total Dissolved Solids	554	1	5.7	10	mg/L	10/12/12	rvenal	
Method: SM 4500-H+B	Prep Method: Method						QCBatchID:	
pH	7.24	1			pH Units	10/12/12	robert	
Method: SM 4500-Si-C	Prep Method: Method						QCBatchID: QC1130558	
Silica	29.6	5	0.5	5	mg/L	10/16/12	cathy	
Method: SM 5310B	Prep Method: Method						QCBatchID: QC1130627	
Total Organic Carbon (TOC)	0.5	1		0.5	mg/L	10/15/12	quang	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB : 00021

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 12:41	Site:	Notes:
Sample #: 311995-011	Client Sample #: B-1-CW17 Duplicate	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 218.6	Prep Method: EPA 218.6							QCBatchID: QC1130675
Hexavalent Chromium	25.1	1		1	ug/L	10/16/12	rybechay	
Method: EPA 6010 NELAC	Prep Method: EPA 3010A/Filtered							QCBatchID: QC1130580
Chromium	0.026	1	0.002	0.01	mg/L	10/17/12	nina	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

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ALAB : 00022

ASSOCIATED LABORATORIES

806 North Batavia • Orange, CA 92668
Phone: (714) 771-6900 • Fax: (714) 538-1209

Chain of Custody Record



Lab Job No. 312080
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CUSTOMER INFORMATION

PROJECT INFORMATION

REQUIRED TURN AROUND TIME:

Standard: X

72 Hours:

48 Hours:

24 Hours:

COMPANY: ARCADIS
SEND REPORT TO: Eric Griser

PROJECT NAME: BOU Fairbank
NUMBER:

EMAIL: file
ADDRESS: 11 Hollister Way

ADDRESS: Chattanooga, GA
PO #: 060361891.0000.00001

PHONE:

SAMPLED BY: H. Anderson, H. Armstrong

Sample ID

Date

Time

Matrix

Container Number/Size

Pres.

ANALYSIS REQUEST

Test Instructions & Comments

REQUIRED TURN AROUND TIME:

Standard:

72 Hours:

48 Hours:

24 Hours:

VOC's 8200B + 1700
1,2,3 TCP
1,4 Dioxane
Total chrome (A10)
Hexavalent chrome (A10)
Thallium (A10)
Nitrate/Nitrite
TDS
General Minerals

Sample ID	Date	Time	Matrix	Container Number/Size	Pres.	ANALYSIS REQUEST	Test Instructions & Comments
10-1-CW25	10/11/12	1035	W	3 VOA5	HCL	X	
10-1-CW25	10/12/12	0710	W	2 VOA5	HCL	X	
10-1-CW25	10/12/12	0830	W	11 Variations	HCL	X	
10-1-CW25	10/12/12	1040	W	11 Variations	HCL	X	
10-1-CW25	10/12/12	1300	W	8 Variations	HCL	X	
10-1-CW25	10/12/12	1410	W	8 Variations	HCL	X	
10-1-CW25	10/12/12	1304	W	3 VOA5	HCL	X	
10-1-CW25	10/12/12	1515	W	8 Variations	HCL	X	
10-1-CW25	10/12/12	1505	W	8 Variations	HCL	X	
10-1-CW25	10/12/12	1504	W	2 VOA5	HCL	X	
10-1-CW25	10/12/12	1155	W	6 VOA5	HCL	X	
10-1-CW25	10/12/12	1157	W	3 VOA5	HCL	X	
10-1-CW25	10/12/12	0933	W		HCL	X	
10-1-CW25	10/12/12	0934	W		HCL	X	
10-1-CW25	10/12/12	0810			HCL	X	

Total No. of Samples:

Method of Shipment:

Preservative: 1 = Ice 2 = HCl 3 = HNO3 4 = H2SO4 5 = NaOH 6 = Other

Relinquished By	Received By	Relinquished By	Received By	Relinquished By	Received By
Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>	Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>	Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>	Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>	Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>	Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Date: <u>10/12/12</u> Time: <u>1548</u>

Matrix: Water
Sampled: 10/11/2012 16:35
Sample #: 312080-001

Client: ARCADIS
Site:
Client Sample #: B-1-CW25

Collector: Client
Notes:

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Method: EPA 8260 NELAC		Prep Method: EPA 5030B		QCBatchID: QC1130740				
1,1,1,2-Tetrachloroethane	ND	1	0.122	0.5	ug/L	10/21/12	nicollez	
1,1,1-Trichloroethane	ND	1	0.063	0.5	ug/L	10/21/12	nicollez	
1,1,2,2-Tetrachloroethane	ND	1	0.063	0.5	ug/L	10/21/12	nicollez	
1,1,2-Trichloroethane	ND	1	0.045	0.5	ug/L	10/21/12	nicollez	
1,1,2-Trichlorotrifluoroethane	0.5	1	0.119	0.5	ug/L	10/21/12	nicollez	
1,1-Dichloroethane	ND	1	0.078	0.5	ug/L	10/21/12	nicollez	
1,1-Dichloroethene	0.8	1	0.13	0.5	ug/L	10/21/12	nicollez	
1,1-Dichloropropene	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
1,2,3-Trichlorobenzene	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
1,2,3-Trichloropropane	ND	1	0.073	0.5	ug/L	10/21/12	nicollez	
1,2,4-Trichlorobenzene	ND	0.5	0.068	0.5	ug/L	10/21/12	nicollez	
1,2,4-Trimethylbenzene	ND	1	0.078	0.5	ug/L	10/21/12	nicollez	
1,2-Dibromo-3-chloropropane	ND	1	0.08	0.5	ug/L	10/21/12	nicollez	
1,2-Dibromoethane	ND	1	0.043	0.5	ug/L	10/21/12	nicollez	
1,2-Dichlorobenzene	ND	1	0.051	0.5	ug/L	10/21/12	nicollez	
1,2-Dichloroethane	ND	1	0.066	0.5	ug/L	10/21/12	nicollez	
1,2-Dichloropropane	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
1,3,5-Trimethylbenzene	ND	1	0.097	0.5	ug/L	10/21/12	nicollez	
1,3-Dichlorobenzene	ND	1	0.052	0.5	ug/L	10/21/12	nicollez	
1,3-Dichloropropane	ND	1	0.68	0.5	ug/L	10/21/12	nicollez	
1,4-Dichlorobenzene	ND	1	0.12	0.5	ug/L	10/21/12	nicollez	
2,2-Dichloropropane	ND	1	0.11	0.5	ug/L	10/21/12	nicollez	
2-Butanone (MEK)	ND	0.5	0.3	5	ug/L	10/21/12	nicollez	
2-Chloroethyl Vinyl Ether	ND	1	0.23	0.5	ug/L	10/21/12	nicollez	
2-Chlorotoluene	ND	1	0.079	0.5	ug/L	10/21/12	nicollez	
4-Chlorotoluene	ND	1	0.08	0.5	ug/L	10/21/12	nicollez	
4-Isopropyltoluene	ND	1	0.091	0.5	ug/L	10/21/12	nicollez	
4-Methyl-2-pentanone (MIBK)	ND	0.5	0.16	5	ug/L	10/21/12	nicollez	
Acetone	ND	0.5	0.2	10	ug/L	10/21/12	nicollez	
Allyl Chloride	ND	1	0.08	0.5	ug/L	10/21/12	nicollez	
Benzene	ND	1	0.071	0.5	ug/L	10/21/12	nicollez	
Bromobenzene	ND	1	0.073	1	ug/L	10/21/12	nicollez	
Bromochloromethane	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
Bromodichloromethane	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
Bromoform	ND	1	0.053	0.5	ug/L	10/21/12	nicollez	
Bromomethane	ND	1	0.13	1	ug/L	10/21/12	nicollez	
Carbon Tetrachloride	ND	1	0.045	0.5	ug/L	10/21/12	nicollez	
Chlorobenzene	ND	1	0.075	0.5	ug/L	10/21/12	nicollez	
Chlorodibromomethane	ND	1	0.045	0.5	ug/L	10/21/12	nicollez	
Chloroethane	ND	0.5	0.4	0.5	ug/L	10/21/12	nicollez	
Chloroform	0.9	1	0.044	0.5	ug/L	10/21/12	nicollez	
Chloromethane	ND	1	0.055	0.5	ug/L	10/21/12	nicollez	
cis-1,2-Dichloroethene	ND	1	0.055	0.5	ug/L	10/21/12	nicollez	
cis-1,3-dichloropropene	ND	1	0.061	0.5	ug/L	10/21/12	nicollez	
cis-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/21/12	nicollez	
Dibromomethane	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
Dichlorodifluoromethane	ND	1	0.062	0.5	ug/L	10/21/12	nicollez	
Di-isopropyl ether (DIPE)	ND	1	0.17	0.5	ug/L	10/21/12	nicollez	
Ethylbenzene	ND	1	0.091	0.5	ug/L	10/21/12	nicollez	
Ethyl-tertbutylether (ETBE)	ND	1	0.25	0.5	ug/L	10/21/12	nicollez	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report

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ALAB : 000003

Matrix: Water	Client: ARCADIS	Collector: Client
Sampled: 10/11/2012 16:35	Site:	Notes:
Sample #: 312080-001	Client Sample #: B-1-CW25	

Analyte	Result	DF	MDL	RDL	Units	Analyzed	By	Notes
Hexachlorobutadiene	ND	1	0.073	1	ug/L	10/21/12	nicollez	
Isopropylbenzene	ND	1	0.089	0.5	ug/L	10/21/12	nicollez	
m and p-Xylene	ND	1	0.17	0.5	ug/L	10/21/12	nicollez	
Methylene chloride	ND	1	0.15	0.5	ug/L	10/21/12	nicollez	
Methyl-t-butyl Ether (MTBE)	ND	1	0.068	0.5	ug/L	10/21/12	nicollez	
Naphthalene	ND	1	0.061	0.5	ug/L	10/21/12	nicollez	
N-butylbenzene	ND	1	0.094	0.5	ug/L	10/21/12	nicollez	
N-propylbenzene	ND	1	0.09	0.5	ug/L	10/21/12	nicollez	
o-Xylene	ND	1	0.075	0.5	ug/L	10/21/12	nicollez	
Sec-butylbenzene	ND	1	0.077	0.5	ug/L	10/21/12	nicollez	
Styrene	ND	1	0.088	0.5	ug/L	10/21/12	nicollez	
t-Butyl alcohol (TBA)	ND	1	5	5	ug/L	10/21/12	nicollez	
Tert-amylmethylether (TAME)	ND	1	0.13	0.5	ug/L	10/21/12	nicollez	
Tert-butylbenzene	ND	1	0.092	0.5	ug/L	10/21/12	nicollez	
Tetrachloroethene	650	10	1.5	5	ug/L	10/21/12	nicollez	
Toluene	ND	1	0.078	0.5	ug/L	10/21/12	nicollez	
trans-1,2-dichloroethene	ND	1	0.17	0.5	ug/L	10/21/12	nicollez	
trans-1,3-dichloropropene	ND	1	0.056	0.5	ug/L	10/21/12	nicollez	
trans-1,4-dichloro-2-butene	ND	1	0.075	5	ug/L	10/21/12	nicollez	
Trichloroethene	78	1	0.078	0.5	ug/L	10/21/12	nicollez	
Trichlorofluoromethane	ND	1	0.06	0.5	ug/L	10/21/12	nicollez	
Vinyl Chloride	ND	1	0.08	0.5	ug/L	10/21/12	nicollez	
Xylenes (Total)	ND	1	0.25	0.5	ug/L	10/21/12	nicollez	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	115	70-145	
4-Bromofluorobenzene (SUR)	113	70-145	
Dibromodifluoromethane (SUR)	104	70-145	
Toluene-d8 (SUR)	100	70-145	

ND = Not Detected or < MDL MDL = Method Detection Limit RDL = Reporting Detection Limit DF = Dilution Factor

ASSOCIATED LABORATORIES

Analytical Results Report
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ALAB : 000004

CONFIDENTIAL

LMC-PET-00002298