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Technical Memorandum

EF/NAES 09/30/2013

Action Info 24097011.10001

Jeff Drumm, City of Tucson
Lori Ehman, City of Tucson
Gretchen Wagenseller, ADEQ

From William Neese

Date April 9, 2013

Subject Comparison of Passive Diffusion Sampler Results to Discrete Depth Sampler Results at Six Wells for the Broadway-Pantano WQARF Site

The purpose of this memo is to provide a summary of data collection activities conducted in support of determining if a change from discrete bailing sampling methods to passive diffusion samplers (PDSs) is feasible at the site for all sampling wells. The use of PDSs for sampling of volatile organic compounds (VOCs) is well documented; *User's Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* USGS, Columbia South Carolina, 2001, was referenced prior to commencing the sampling event.

These documents, among others, indicate all site contaminants of concern (COCs) are amenable to PDSs sampling with the exception of methylene chloride. In a literature search, URS was not able to find a document that specifically listed methylene chloride as being amenable to PDSs sampling. However, in a similar fashion, it is also not listed as a chemical that is unfavorable to the PDSs sampling. Additionally, methylene chloride has not been detected at the site since 2005 and exceeded the Aquifer Water Quality Standard (AWQS) in only two wells at the Broadway North Landfill. Therefore, based on this review, PDSs would appear to be an appropriate and efficient sampling method for the compounds remaining at the Broadway-Pantano Water Quality Assurance Revolving Fund (WQARF) site.

In an effort to determine the feasibility of this transition, six wells across the site were chosen as test wells for paired sampling via both methods. The chosen wells included: WR-180A, SJ-01, WR-704A, BP-24A, WR-358A, and WR-274A. The paired sampling consisted of sampling each well with both a PDS and a Solinst™ discrete bailer.

Dedicated PDSs were purchased and installed in each of the proposed wells. Wells with dedicated transducers had the transducer briefly removed from the well and then re-inserted after the PDS was installed. PDSs were installed to a depth of 25 feet below the water surface.

- PDSs were installed on December 4, 2012. The PDSs were allowed to equilibrate for approximately two weeks in the wells.
- The field sampling of the PDSs was conducted on December 19, 2012. Samples were immediately placed on ice and kept under custody by URS until after the discrete



Summary of Passive Diffusion Sampler Results to Discrete Bailer Sample Results

April 9, 2013

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sampling activities were conducted in order to provide a single work order to the analytical laboratory.

- The discrete sampling activities took place on December 20 and 21, 2012. Samples were immediately placed on ice in the same coolers as the PDS samples and submitted to Accutest for analysis via United States Environmental Protection Agency (USEPA) method 8260B. Discrete samples were collected at the same depth (25 feet) below the water surface as the PDSs.
- Sampling of the PDSs was performed in accordance with the attached URS sampling standard operating procedure (SOP).
- Sampling with Solinst™ bailer was performed in accordance with the attached Arizona Department of Environmental Quality (ADEQ) Sampling SOP, with the exception of Section 8.2. The sampler was lowered and removed using hand methods as opposed to a well development rig.
- Immediately following the Solinst™ sampling, the PDSs in wells SJ-01, WR-180A, and WR-704A were refilled with water and reinstalled in the wells to allow for equilibration and sampling at the next sampling event.
- The Solinst™ was decontaminated between each well sample in accordance with the attached ADEQ Sampling SOP.

The final analytical results were received on January 17, 2013. URS performed data verification of the results and a direct comparison on the sampling results from the two methods. The attached [Data Verification Memorandum](#) provides a detailed explanation of the review. Based on the review, all data were adequate and usable for the intended purpose.

The comparison of sampling methods showed generally good agreement between the two methods. The comparison method used was similar to that of comparison between field duplicates for soils. This is likely conservative as the comparison of field duplicates assumes samples are collected at the same time from the same matrix sample. A few outliers from the developed criteria were noted; however, 83% of the analyte comparisons passed the relative percent difference (RPD) screen of 35%. More specifically, the comparison indicated only 2 outliers for site COCs. These were both from Well WR-274A and include:



Summary of Passive Diffusion Sampler Results to Discrete Bailer Sample Results

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Analyte	PDB / DB (µg/L)	RPD	Absolute Difference	2 x RL	Criteria Met	Criteria Discussion
cis-1,2-Dichloroethylene	27.7 / 41.7	40	-	-	No	RPD was 5% beyond established criteria. RPDs for all analytes at this well were generally higher than other comparison wells.
Tetrachloroethylene	82.8 / 122	38	-	-	No	RPD was 3% beyond established criteria. RPDs for all analytes at this well were generally higher than other comparison wells.

Additionally, the PDSs equilibrate with the aquifer over time whereas the discrete bailing captures only a snapshot of the aquifer. PDSs then, over time, may provide more representative samples of the aquifer from sampling event to sampling event. Based on the data as a whole and the ease of implementation of the field activities for PDSs; URS recommends transition from discrete bailer methods to PDS methods for sampling at the Broadway-Pantano WQARF site.

ATTACHMENTS

[DATA VERIFICATION MEMORANDUM](#)
[DECEMBER 2012 ANALYTICAL RESULTS](#)
[URS SAMPLING SOP](#)
[ADEQ SAMPLING SOP](#)



Data Verification Memorandum

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Phoenix, Arizona 85020
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Action	Info	File
To:	Will Neese	24097098
From:	Marianne Burrus, QA/QC	
Date:	April 9, 2013, revised	
Subject :	Data Verification of Broadway & Pantano – December 2012 Sampling Event	

This report summarizes the verification of analytical data for the 12 aqueous samples, 1 field duplicate, 1 equipment blank and 1 trip blank collected during the Broadway & Pantano December 2012 sampling event. The sample identification numbers, sample collection dates, and analyses are summarized in Table 1. The samples were analyzed by Accutest Laboratories (Accutest) located in San Jose, California. Accutest operates under Arizona Department of Health Services (ADHS) laboratory licensure number AZ0762.

The following comments refer to the performance of Accutest in meeting the quality assurance and control specifications outlined in the analytical method and the criteria specified in the United States Environmental Protection Agency (EPA) document: National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). In addition, the data were reviewed in accordance with the Quality Assurance/ Quality Control (QA/QC) objectives outlined in the project document: *Revised Quality Assurance Project Plan [QAPP], Collection & Analysis of Groundwater Samples, Broadway-Pantano WQARF Site* (September 2011). The qualifiers and reason codes used to identify data that did not meet the criteria set forth in the previously referenced documents are listed in Appendix A.

A list of the data review parameters is given in Section 2. A preceding “▶” signifies areas where issues were raised during the course of the validation review, and should be considered to determine any impact on data quality and usability.

1 Executive Summary

The data are acceptable in all areas of review and are useable for their intended purpose with qualifications summarized below.

Sample ID	Parameters	Probable Bias Direction	Qualifier, Reason Code	Reference Section
WR-274A-PDB	Dichlorodifluoromethane	High	J, 1	2.6

Because none of the report results were rejected the analytical completeness for this data group is 100%.

2 Volatile Organic Compounds (Method 8260B)

Data Completeness
Preservation and Holding Times

- Blanks
- Surrogates
- Matrix Spike/Matrix Spike Duplicate (MS/MSD)
 - ▶ Blank Spike/Blank Spike Duplicate (BS/BSD)
- Field Duplicate (FD)
 - ▶ Additional Evaluation

2.1 Data Completeness

The analyses were performed as requested on the Chain-of-Custody Records.

2.2 Preservation and Holding Times

The samples were preserved according to the method and were analyzed within the method specified holding time. Therefore, data qualification was not necessary.

2.3 Blanks

The associated method, equipment and trip blanks were reported as non-detect for all target analytes. Therefore, data qualification was not necessary based on the blank results.

2.4 Surrogates

The surrogate recoveries were within the laboratory established control limits. Therefore, data qualification was not necessary based on the surrogate results.

2.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD)

The MS/MSD analyses were not performed on a sample from the project; therefore, matrix effect could not be evaluated. The BS/BSD was used to evaluate laboratory precision and accuracy.

2.6 Blank Spike/Blank Spike Duplicate (BS/BSD)

The BS/BSD percent recoveries and relative percent difference (RPD) values were within the method specified control limits, except where noted below.

Batch	Analyte	LCS/LCSD %Rec (Limits)	Associated Samples	Qualifier
VU318	1,3,5-Trimethylbenzene	124/131 (60-130)	SJ-01-DB	None ¹
			WR-294A-DB	
			WR-358A-DB	
			BP-24A-DB	
			WR-180A-DB	
	Equipment Blank			
VW1269	Dichlorodifluoromethane	121/133 (60-130)	WR-274A-PDB	J, 1
None ¹ Percent recovery above the upper control limits and analyte was not detected in the associated sample. Therefore, no qualification of the data was necessary.				

2.7 Field Duplicate (FD)

The field duplicate for this sampling event was collected at WR-704A-PDB. No significant differences were noted between the primary sample and field duplicate, indicating acceptable field precision.

2.8 Additional Evaluation

URS collected the samples using two different sampling methods. The sampling method designation was indicated as an extension to the sample numbers [passive diffusion bag (PDB) and discrete bailer (DB)].

Precision is evaluated by measuring the agreement among individual measurements of the same property under similar conditions and is expressed as RPD. The project-specific QAPP designates the RPD criteria for the MS/MSD and BS/BSD as 20%. No specific RPD value limit is given for the FD analyses in the QAPP. The FD RPD value criteria would likely be less stringent and based on URS' experience is generally established between 25% and 30% for aqueous samples. Given this and because no specific criteria could be found for the comparison of sampling methods, URS used the following criteria:

- Criterion of $\leq 35\%$ RPD was applied for cases in which both the values were greater than 5 times the reporting limit (RL).
- When either value was below 5 times the RL, the absolute difference between the sample results was compared to the criteria of ± 2 times the RL.

The following table summarizes the comparison of the results. This comparison of the analytes reported above the detection limit in either sample is provided for informational purposes only. No data was qualified based on this evaluation.

Sample ID	Analyte	PDB / DB ($\mu\text{g/L}$)	RPD	Absolute Difference	2 x RL	Criteria Met
SJ-01	Dichlorodifluoromethane	1.3 / 2.1	-	0.8	1.0	Yes
	Tetrachloroethylene	5.6 / 5.9	5.2	-	-	Yes
WR-358A	Benzene	1.6 / 1.7	-	0.1	2.0	Yes
	1,1-Dichloroethane	0.74 / 0.87	-	0.13	1.0	Yes
	Dichlorodifluoromethane	27.6 / 42.7	43	-	-	No
	cis-1,2-Dichloroethylene	10.1 / 13.4	28	-	-	Yes
	trans-1,2-Dichloroethylene	<0.5 / 0.75	-	0.25	1.0	Yes
	Tetrachloroethylene	45.1 / 51.8	14	-	-	Yes
	Trichloroethylene	10.4 / 12.0	14	-	-	Yes
	Trichlorofluoromethane	2.3 / 3.0	-	0.7	1.0	Yes
	Vinyl chloride	2.1 / 2.2	-	0.1	1.0	Yes
WR-274A	Dichlorodifluoromethane	5.9 / 8.2	33	-	-	Yes
	cis-1,2-Dichloroethylene	27.7 / 41.7	40	-	-	No
	p-Dichlorobenzene	<1.0 / 1.2	-	0.2	2.0	Yes
	Tetrachloroethylene	82.8 / 122	38	-	-	No

Sample ID	Analyte	PDB / DB (µg/L)	RPD	Absolute Difference	2 x RL	Criteria Met
WR-274A	Trichloroethylene	31.7 / 37.9	18	-	-	Yes
BP-24A	Dichlorodifluoromethane	3.4 / 5.1	40	-	-	No
	cis-1,2-Dichloroethylene	<0.5 / 0.55	-	0.05	1.0	Yes
	Tetrachloroethylene	15.4 / 14.3	7.4	-	-	Yes
	Trichloroethylene	3.2 / 3.3	3.1	-	-	Yes
WR-180A	No analytes were detected					
WR-704A	Dichlorodifluoromethane	4.5 / 4.9	8.5	-	-	Yes
	Tetrachloroethylene	8.9 / 11.1	22	-	-	Yes
	Trichloroethylene	0.78 / 0.75	-	0.03	1.0	Yes
	Trichlorofluoromethane	0.69 / 0.82	-	0.13	1.0	Yes

APPENDIX A
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
ASSIGNED BY URS' DATA REVIEW TEAM

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

REASON CODE DEFINITIONS

- a Analytical sequence deficiency or omission.
- b Gross compound breakdown (4,4'-DDT/Endrin).
- c Calibration failure; poor or unstable response.
- d Laboratory duplicate imprecision.
- e Laboratory duplicate control sample imprecision.
- f Field duplicate imprecision.
- g Poor chromatography.
- h Holding time violation.
- i Internal standard failure.
- j Poor mass spectrographic performance.
- k Serial dilution imprecision.
- l Laboratory control sample recovery failure.
- m Matrix spike/matrix spike duplicate recovery failure.
- n Interference check sample recovery failure.
- o Calibration blank contamination (metals/inorganics only).
- p Preparation blank contamination (metals/inorganics only).
- q Quantitation outside of linear range.
- r Linearity failure in initial calibration.
- s Surrogate spike recovery failure (organics only).
- t Instrument tuning failure.
- u No confirmation column present (GC organics only).
- w Retention time (RT) outside of RT window.
- x Equipment blank contamination.
- y Trip blank contamination.
- z Method blank contamination.
- Q Other

TABLE 1

Consultant: URS Corporation
 Project: Broadway & Pantano
 Laboratory: Accutest – San Jose, California

Field Sample Identification	Laboratory Identification Number	Sample Date	VOCs (Method 8260B)
SJ-01-PDB	C25485-1	12/19/12	X
WR-358A-PDB	C25485-2	12/19/12	X
WR-274A-PDB	C25485-3	12/19/12	X
BP-24A-PDB	C25485-4	12/19/12	X
WR-180A-PDB	C25485-5	12/19/12	X
WR-704A-PDB	C25485-6	12/19/12	X
WR-704A-PDB-DUP Field duplicate	C25485-7	12/19/12	X
SJ-01-DB	C25485-8	12/20/12	X
WR-294A-DB	C25485-9	12/20/12	X
WR-358A-DB	C25485-10	12/20/12	X
BP-24A-DB	C25485-11	12/20/12	X
WR-180A-DB	C25485-13	12/20/12	X
WR-704A-DB	C25485-14	12/21/12	X
Equipment Blank	C25485-12	12/20/12	X
Trip Blank	C25485-15	12/19/12	X

VOCs: Volatile Organic Compounds

Note: Level IV Data Validation was not performed on any of the samples listed.

Technical Report for

City of Tucson Environmental Services

URSAZT: Broadway & Pantano

24097098.10001

Accutest Job Number: C25485

Sampling Dates: 12/19/12 - 12/21/12

Report to:

City of Tucson - Env.Services

jeffrey.drumm@tucsonaz.gov
lori.ehman@tucsonaz.gov
ATTN: Jeff Drumm

Total number of pages in report: 74



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Beth Proffitt 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.



January 16, 2013

Jeff Drumm
City of Tucson – Env. Services
4400 S. Park Ave., Bldg 1 P.O. Box 27210
Tucson, AZ 85726

Re: Accutest Job # C25485 Reissue

Dear Mr. Drumm,

The final report for Accutest Job # **C25485**, original report dated 1/4/2013, has been edited to reflect requested corrections.

The reporting limit for Methylene Chloride has been lowered to 5 ug/L as per your request. Revised result pages have been incorporated into this revised report.

We apologize for any inconvenience the above issue may have caused you. Please contact us at 408-588-0200 if we can be of further assistance in this matter, or if you have any questions regarding this data report.

Sincerely,

Accutest Laboratories

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Sample Summary

City of Tucson Environmental Services

Job No: C25485

URSAZT: Broadway & Pantano
 Project No: 24097098.10001

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C25485-1	12/19/12	09:30 MF	12/24/12	AQ	Ground Water	SJ-01-PDB
C25485-2	12/19/12	10:35 MF	12/24/12	AQ	Ground Water	WR-358A-PDB
C25485-3	12/19/12	11:20 MF	12/24/12	AQ	Ground Water	WR-274A-PDB
C25485-4	12/19/12	12:00 MF	12/24/12	AQ	Ground Water	BP-24A-PDB
C25485-5	12/19/12	13:20 MF	12/24/12	AQ	Ground Water	WR-180A-PDB
C25485-6	12/19/12	14:00 MF	12/24/12	AQ	Ground Water	WR-704A-PDB
C25485-7	12/19/12	14:05 MF	12/24/12	AQ	Ground Water	WR-704A-PDB-DUP
C25485-8	12/20/12	07:00 MF	12/24/12	AQ	Ground Water	SJ-01-DB
C25485-9	12/20/12	10:20 MF	12/24/12	AQ	Ground Water	WR-274A-DB
C25485-10	12/20/12	10:58 MF	12/24/12	AQ	Ground Water	WR-358A-DB
C25485-11	12/20/12	11:40 MF	12/24/12	AQ	Ground Water	BP-24A-DB
C25485-12	12/20/12	11:45 MF	12/24/12	AQ	Equipment Blank	EQUIPMENT BLANK
C25485-13	12/20/12	13:00 MF	12/24/12	AQ	Ground Water	WR-180A-DB



Sample Summary

(continued)

City of Tucson Environmental Services

Job No: C25485

URSAZT: Broadway & Pantano

Project No: 24097098.10001

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C25485-14	12/21/12	08:45 MF	12/24/12	AQ	Ground Water	WR-704A-DB
C25485-15	12/19/12	00:00 MF	12/24/12	AQ	Trip Blank Water	TRIP BLANK



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: City of Tucson Environmental Services

Job No: C25485

Site: URSAZT: Broadway & Pantano

Report Date 1/4/2013 1:29:02 PM

14 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected between 12/19/2012 and 12/21/2012 and were received at Accutest on 12/24/2012 properly preserved, at 3 Deg. C and intact. These Samples received an Accutest job number of C25485. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ	Batch ID: VQ487
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- Sample(s) C25483-1MS, C25483-1MSD were used as the QC samples indicated.

Matrix: AQ	Batch ID: VQ490
-------------------	------------------------

- Sample(s) C25474-9MS, C25474-9MSD were used as the QC samples indicated.

Matrix: AQ	Batch ID: VU318
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- Sample(s) C25432-3MS, C25432-3MSD were used as the QC samples indicated.

Matrix: AQ	Batch ID: VW1269
-------------------	-------------------------

- Blank Spike Duplicate Recovery for Dichlorodifluoromethane outside laboratory control limits.

Accutest Laboratories Northern California (ALNCA) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALNCA and as stated on the COC. ALNCA certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALNCA Quality Manual except as noted above. This report is to be used in its entirety. ALNCA is not responsible for any assumptions of data quality if partial data packages are used

Summary of Hits

Job Number: C25485
Account: City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano
Collected: 12/19/12 thru 12/21/12

Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
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C25485-1 SJ-01-PDB

Dichlorodifluoromethane	1.3	0.50	ug/l	SW846 8260B
Tetrachloroethylene	5.6	0.50	ug/l	SW846 8260B

C25485-2 WR-358A-PDB

Benzene	1.6	1.0	ug/l	SW846 8260B
1,1-Dichloroethane	0.74	0.50	ug/l	SW846 8260B
Dichlorodifluoromethane	27.6	0.50	ug/l	SW846 8260B
cis-1,2-Dichloroethylene	10.1	0.50	ug/l	SW846 8260B
Tetrachloroethylene	45.1	0.50	ug/l	SW846 8260B
Trichloroethylene	10.4	0.50	ug/l	SW846 8260B
Trichlorofluoromethane	2.3	0.50	ug/l	SW846 8260B
Vinyl chloride	2.1	0.50	ug/l	SW846 8260B

C25485-3 WR-274A-PDB

Dichlorodifluoromethane	5.9	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene	27.7	1.0	ug/l	SW846 8260B
Tetrachloroethylene	82.8	1.0	ug/l	SW846 8260B
Trichloroethylene	31.7	1.0	ug/l	SW846 8260B

C25485-4 BP-24A-PDB

Dichlorodifluoromethane	3.4	0.50	ug/l	SW846 8260B
Tetrachloroethylene	15.4	0.50	ug/l	SW846 8260B
Trichloroethylene	3.2	0.50	ug/l	SW846 8260B

C25485-5 WR-180A-PDB

No hits reported in this sample.

C25485-6 WR-704A-PDB

Dichlorodifluoromethane	4.5	0.50	ug/l	SW846 8260B
Tetrachloroethylene	8.9	0.50	ug/l	SW846 8260B
Trichloroethylene	0.78	0.50	ug/l	SW846 8260B
Trichlorofluoromethane	0.69	0.50	ug/l	SW846 8260B

C25485-7 WR-704A-PDB-DUP

Dichlorodifluoromethane	4.6	0.50	ug/l	SW846 8260B
Tetrachloroethylene	8.9	0.50	ug/l	SW846 8260B
Trichloroethylene	0.79	0.50	ug/l	SW846 8260B

Summary of Hits

Job Number: C25485
Account: City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano
Collected: 12/19/12 thru 12/21/12



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
		Trichlorofluoromethane	0.77	0.50	ug/l	SW846 8260B
C25485-8	SJ-01-DB					
		Dichlorodifluoromethane	2.1	0.50	ug/l	SW846 8260B
		Tetrachloroethylene	5.9	0.50	ug/l	SW846 8260B
C25485-9	WR-274A-DB					
		Dichlorodifluoromethane	8.2	1.0	ug/l	SW846 8260B
		cis-1,2-Dichloroethylene	41.7	1.0	ug/l	SW846 8260B
		p-Dichlorobenzene	1.2	1.0	ug/l	SW846 8260B
		Tetrachloroethylene	122	1.0	ug/l	SW846 8260B
		Trichloroethylene	37.9	1.0	ug/l	SW846 8260B
C25485-10	WR-358A-DB					
		Benzene	1.7	1.0	ug/l	SW846 8260B
		1,1-Dichloroethane	0.87	0.50	ug/l	SW846 8260B
		Dichlorodifluoromethane	42.7	0.50	ug/l	SW846 8260B
		cis-1,2-Dichloroethylene	13.4	0.50	ug/l	SW846 8260B
		trans-1,2-Dichloroethylene	0.75	0.50	ug/l	SW846 8260B
		Tetrachloroethylene	51.8	0.50	ug/l	SW846 8260B
		Trichloroethylene	12.0	0.50	ug/l	SW846 8260B
		Trichlorofluoromethane	3.0	0.50	ug/l	SW846 8260B
		Vinyl chloride	2.2	0.50	ug/l	SW846 8260B
C25485-11	BP-24A-DB					
		Dichlorodifluoromethane	5.1	0.50	ug/l	SW846 8260B
		cis-1,2-Dichloroethylene	0.55	0.50	ug/l	SW846 8260B
		Tetrachloroethylene	14.3	0.50	ug/l	SW846 8260B
		Trichloroethylene	3.3	0.50	ug/l	SW846 8260B
C25485-12	EQUIPMENT BLANK					
No hits reported in this sample.						
C25485-13	WR-180A-DB					
No hits reported in this sample.						
C25485-14	WR-704A-DB					
		Dichlorodifluoromethane	4.9	0.50	ug/l	SW846 8260B

Summary of Hits

Job Number: C25485
Account: City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano
Collected: 12/19/12 thru 12/21/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
		11.1	0.50		ug/l	SW846 8260B
		0.75	0.50		ug/l	SW846 8260B
		0.82	0.50		ug/l	SW846 8260B

C25485-15 TRIP BLANK

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: SJ-01-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-1		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12418.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	1.3	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SJ-01-PDB	Date Sampled:	12/19/12
Lab Sample ID:	C25485-1	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	5.6	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		60-130%
2037-26-5	Toluene-D8	100%		60-130%
460-00-4	4-Bromofluorobenzene	92%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-358A-PDB	Date Sampled: 12/19/12
Lab Sample ID: C25485-2	Date Received: 12/24/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSAZT: Broadway & Pantano	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12419.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	1.6	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.74	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	27.6	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	10.1	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-358A-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-2		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	45.1	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	10.4	0.50	ug/l	
75-69-4	Trichlorofluoromethane	2.3	0.50	ug/l	
75-01-4	Vinyl chloride	2.1	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	92%		60-130%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: WR-274A-PDB	Date Sampled: 12/19/12
Lab Sample ID: C25485-3	Date Received: 12/24/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSAZT: Broadway & Pantano	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W36455.D	2	12/28/12	KN	n/a	n/a	VW1269
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	40	ug/l	
71-43-2	Benzene	ND	2.0	ug/l	
108-86-1	Bromobenzene	ND	2.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	4.0	ug/l	
135-98-8	sec-Butylbenzene	ND	4.0	ug/l	
98-06-6	tert-Butylbenzene	ND	4.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	4.0	ug/l	
106-43-4	p-Chlorotoluene	ND	4.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	5.9	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	27.7	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WR-274A-PDB	Date Sampled:	12/19/12
Lab Sample ID:	C25485-3	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	20	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	20	ug/l	
74-83-9	Methyl bromide	ND	4.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	10	ug/l	
103-65-1	n-Propylbenzene	ND	4.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	4.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	4.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	4.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	4.0	ug/l	
127-18-4	Tetrachloroethylene	82.8	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	31.7	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BP-24A-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-4		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12421.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	3.4	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BP-24A-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-4		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	15.4	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	3.2	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	91%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: WR-180A-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-5		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12422.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID:	WR-180A-PDB	Date Sampled:	12/19/12
Lab Sample ID:	C25485-5	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	92%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-704A-PDB		Date Sampled: 12/19/12
Lab Sample ID: C25485-6		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12423.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	4.5	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WR-704A-PDB	Date Sampled:	12/19/12
Lab Sample ID:	C25485-6	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	8.9	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	0.78	0.50	ug/l	
75-69-4	Trichlorofluoromethane	0.69	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	92%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-704A-PDB-DUP		Date Sampled: 12/19/12
Lab Sample ID: C25485-7		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12424.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	4.6	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WR-704A-PDB-DUP	Date Sampled:	12/19/12
Lab Sample ID:	C25485-7	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	8.9	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	0.79	0.50	ug/l	
75-69-4	Trichlorofluoromethane	0.77	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	92%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SJ-01-DB		Date Sampled: 12/20/12
Lab Sample ID: C25485-8		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8369.D	1	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	2.1	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SJ-01-DB	Date Sampled:	12/20/12
Lab Sample ID:	C25485-8	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	5.9	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		60-130%
2037-26-5	Toluene-D8	95%		60-130%
460-00-4	4-Bromofluorobenzene	90%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-274A-DB		Date Sampled: 12/20/12
Lab Sample ID: C25485-9		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8368.D	2	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	40	ug/l	
71-43-2	Benzene	ND	2.0	ug/l	
108-86-1	Bromobenzene	ND	2.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	4.0	ug/l	
135-98-8	sec-Butylbenzene	ND	4.0	ug/l	
98-06-6	tert-Butylbenzene	ND	4.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	4.0	ug/l	
106-43-4	p-Chlorotoluene	ND	4.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	8.2	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	41.7	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	1.2	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-274A-DB		Date Sampled: 12/20/12
Lab Sample ID: C25485-9		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	20	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	20	ug/l	
74-83-9	Methyl bromide	ND	4.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	10	ug/l	
103-65-1	n-Propylbenzene	ND	4.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	4.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	4.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	4.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	4.0	ug/l	
127-18-4	Tetrachloroethylene	122	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	37.9	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	94%		60-130%
460-00-4	4-Bromofluorobenzene	90%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-358A-DB	Date Sampled: 12/20/12
Lab Sample ID: C25485-10	Date Received: 12/24/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSAZT: Broadway & Pantano	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8370.D	1	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	1.7	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.87	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	42.7	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	13.4	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WR-358A-DB	Date Sampled:	12/20/12
Lab Sample ID:	C25485-10	Date Received:	12/24/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	0.75	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	51.8	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	12.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	3.0	0.50	ug/l	
75-01-4	Vinyl chloride	2.2	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		60-130%
2037-26-5	Toluene-D8	93%		60-130%
460-00-4	4-Bromofluorobenzene	89%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BP-24A-DB		Date Sampled: 12/20/12
Lab Sample ID: C25485-11		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8371.D	1	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	5.1	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.55	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BP-24A-DB		Date Sampled: 12/20/12
Lab Sample ID: C25485-11		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	14.3	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	3.3	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		60-130%
2037-26-5	Toluene-D8	91%		60-130%
460-00-4	4-Bromofluorobenzene	86%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EQUIPMENT BLANK	Date Sampled:	12/20/12
Lab Sample ID:	C25485-12	Date Received:	12/24/12
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8372.D	1	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EQUIPMENT BLANK	Date Sampled:	12/20/12
Lab Sample ID:	C25485-12	Date Received:	12/24/12
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		60-130%
2037-26-5	Toluene-D8	93%		60-130%
460-00-4	4-Bromofluorobenzene	88%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-180A-DB	Date Sampled: 12/20/12
Lab Sample ID: C25485-13	Date Received: 12/24/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSAZT: Broadway & Pantano	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U8373.D	1	12/27/12	YP	n/a	n/a	VU318
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-180A-DB	
Lab Sample ID: C25485-13	Date Sampled: 12/20/12
Matrix: AQ - Ground Water	Date Received: 12/24/12
Method: SW846 8260B	Percent Solids: n/a
Project: URSAZT: Broadway & Pantano	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		60-130%
2037-26-5	Toluene-D8	87%		60-130%
460-00-4	4-Bromofluorobenzene	86%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-704A-DB		Date Sampled: 12/21/12
Lab Sample ID: C25485-14		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12494.D	1	01/03/13	TN	n/a	n/a	VQ490
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 Special List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	4.9	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WR-704A-DB		Date Sampled: 12/21/12
Lab Sample ID: C25485-14		Date Received: 12/24/12
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 Special List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	11.1	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	0.75	0.50	ug/l	
75-69-4	Trichlorofluoromethane	0.82	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-117%
2037-26-5	Toluene-D8	106%		84-114%
460-00-4	4-Bromofluorobenzene	98%		84-112%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK		Date Sampled: 12/19/12
Lab Sample ID: C25485-15		Date Received: 12/24/12
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q12416.D	1	12/27/12	TN	n/a	n/a	VQ487
Run #2							

Run #1	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK		Date Sampled: 12/19/12
Lab Sample ID: C25485-15		Date Received: 12/24/12
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSAZT: Broadway & Pantano		

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	91%		60-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

EDF Tracking # 82770 8237 9900
Accutest Quote #
Bottle Order Control #
Accutest NC Job #: C 25485

Client / Reporting Information		Project Information		Requested Analysis										Matrix Codes				
Company Name City of Tucson-Env Services		Project Name Broadway - Ponteno		<div style="display: flex; justify-content: space-between;"> VOCs 8200 B </div>										WW- Wastewater GW- Ground Water SW- Surface Water SO- Soil OL- Oil WP- Wipe LIQ- Non-aqueous Liquid AIR DW- Drinking Water (Perchlorate Only)				
Address 333 E Wetmore Rd ste 400		Street																
City State Zip Tucson AZ 85705		City State																
Project Contact: Jeff Drumm		Project # 24097098 10001																
Phone #		EMAIL: Michelle.Frendsen@urs.com																
Sampler's Name Michelle Frendsen		Client Purchase Order #		LAB USE ONLY														
Accutest Sample ID	Sample ID / Field Point / Point of Collection	Date	Time	Sampled by	Matrix	# of bottles	VP	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS	PHOS
-10	WP-38A-DB	12/20/12	10:53	MF	1b0	3	X											
-11	BP-24A-DB	12/20/12	1140	MF	1b0	3	X											
-12	Equipment Blank	12/20/12	1145	MF	1b0	3	X											
-13	WR-180A-DB	12/20/12	1300	MF	1b0	3	X											
-14	WR-704A-DB	12/21/12	845	MF	1b0	3	X											
-15	Trip Blank																	

Turnaround Time (Business days)	Approved By / Date:	<input type="checkbox"/> Commercial "A" - Results only <input type="checkbox"/> Commercial "B" - Results with QC summaries <input type="checkbox"/> Commercial "B+" - Results, QC, and chromatograms <input type="checkbox"/> FULT1 - Level 4 data package <input type="checkbox"/> EDF for Geotracker <input type="checkbox"/> EDD Format _____ Provide EDF Global ID _____ Provide EDF Logcode: _____	Comments / Remarks Low Level Detects
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Emergency TJA data available VIA Lablink				Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
1 [Signature]	12/21/12 10:00	1 Kerri Collins	12/21/12 11:05	2 Kerri Collins	12/21/12 11:05	2 FedEx	
Relinquished by:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
3 FedEx	12/21/12 9:35	3 [Signature]		4		4	
Relinquished by:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
5		5		5		5	

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C25485 **Client:** CITY OF TUCSON ENVIRONMENTAL SER **Project:** BORADWAY PANTENO
Date / Time Received: 12/24/2012 **Delivery Method:** FedEx **Airbill #'s:** 8770 8237 9900

Cooler Temps (Initial/Adjusted): #1: (3/3): 0

<u>Cooler Security</u>	<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input type="checkbox"/>	4. Smp'l Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

5.1
5

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-MB	U8359.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-MB	U8359.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	Result	RL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	109%	60-130%
2037-26-5	Toluene-D8	96%	60-130%
460-00-4	4-Bromofluorobenzene	90%	60-130%

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ487-MB	Q12415.D	1	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ487-MB	Q12415.D	1	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	Result	RL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	89%	60-130%
2037-26-5	Toluene-D8	100%	60-130%
460-00-4	4-Bromofluorobenzene	93%	60-130%

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-MB	W36452.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-MB	W36452.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

CAS No.	Compound	Result	RL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	96%	60-130%
2037-26-5	Toluene-D8	99%	60-130%
460-00-4	4-Bromofluorobenzene	101%	60-130%

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-MB	W36452.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method:

C25485-3

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ490-MB	Q12489.D	1	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	20	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	

Method Blank Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ490-MB	Q12489.D	1	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	Result	RL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	93%	60-130%
2037-26-5	Toluene-D8	110%	60-130%
460-00-4	4-Bromofluorobenzene	99%	60-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ487-BS	Q12412.D	1	12/27/12	TN	n/a	n/a	VQ487
VQ487-BSD	Q12413.D	1	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	80	72.5	91	70.8	89	2	60-130/30
71-43-2	Benzene	20	21.4	107	22.1	111	3	60-130/30
108-86-1	Bromobenzene	20	22.5	113	22.6	113	0	60-130/30
74-97-5	Bromochloromethane	20	21.4	107	21.5	108	0	60-130/30
75-27-4	Bromodichloromethane	20	20.4	102	20.8	104	2	60-130/30
75-25-2	Bromoform	20	21.3	107	21.4	107	0	60-130/30
104-51-8	n-Butylbenzene	20	21.9	110	22.6	113	3	60-130/30
135-98-8	sec-Butylbenzene	20	22.5	113	23.5	118	4	60-130/30
98-06-6	tert-Butylbenzene	20	23.6	118	23.3	117	1	60-130/30
108-90-7	Chlorobenzene	20	21.5	108	21.9	110	2	60-130/30
75-00-3	Chloroethane	20	23.8	119	24.3	122	2	60-130/30
67-66-3	Chloroform	20	20.4	102	20.9	105	2	60-130/30
95-49-8	o-Chlorotoluene	20	23.0	115	23.5	118	2	60-130/30
106-43-4	p-Chlorotoluene	20	20.7	104	20.9	105	1	60-130/30
75-15-0	Carbon disulfide	20	22.0	110	23.0	115	4	60-130/30
56-23-5	Carbon tetrachloride	20	18.7	94	19.8	99	6	60-130/30
75-34-3	1,1-Dichloroethane	20	21.4	107	21.7	109	1	60-130/30
75-35-4	1,1-Dichloroethylene	20	20.8	104	22.1	111	6	60-130/30
563-58-6	1,1-Dichloropropene	20	20.8	104	21.9	110	5	60-130/30
96-12-8	1,2-Dibromo-3-chloropropane	20	20.1	101	19.5	98	3	60-130/30
106-93-4	1,2-Dibromoethane	20	21.9	110	22.0	110	0	60-130/30
107-06-2	1,2-Dichloroethane	20	18.5	93	18.3	92	1	60-130/30
78-87-5	1,2-Dichloropropane	20	22.3	112	22.4	112	0	60-130/30
142-28-9	1,3-Dichloropropane	20	21.6	108	21.7	109	0	60-130/30
594-20-7	2,2-Dichloropropane	20	19.6	98	20.1	101	3	60-130/30
124-48-1	Dibromochloromethane	20	21.3	107	21.8	109	2	60-130/30
75-71-8	Dichlorodifluoromethane	20	20.0	100	21.3	107	6	60-130/30
156-59-2	cis-1,2-Dichloroethylene	20	21.5	108	21.8	109	1	60-130/30
10061-01-5	cis-1,3-Dichloropropene	20	22.1	111	22.4	112	1	60-130/30
541-73-1	m-Dichlorobenzene	20	22.0	110	22.1	111	0	60-130/30
95-50-1	o-Dichlorobenzene	20	21.4	107	21.5	108	0	60-130/30
106-46-7	p-Dichlorobenzene	20	21.7	109	21.9	110	1	60-130/30
156-60-5	trans-1,2-Dichloroethylene	20	21.6	108	22.3	112	3	60-130/30
10061-02-6	trans-1,3-Dichloropropene	20	21.9	110	22.2	111	1	60-130/30
100-41-4	Ethylbenzene	20	21.4	107	22.2	111	4	60-130/30
591-78-6	2-Hexanone	80	81.2	102	79.5	99	2	60-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ487-BS	Q12412.D	1	12/27/12	TN	n/a	n/a	VQ487
VQ487-BSD	Q12413.D	1	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	20	19.0	95	20.2	101	6	60-130/30
98-82-8	Isopropylbenzene	20	21.6	108	22.3	112	3	60-130/30
99-87-6	p-Isopropyltoluene	20	22.7	114	23.4	117	3	60-130/30
108-10-1	4-Methyl-2-pentanone	80	82.1	103	81.1	101	1	60-130/30
74-83-9	Methyl bromide	20	23.5	118	23.5	118	0	60-130/30
74-87-3	Methyl chloride	20	22.8	114	23.8	119	4	60-130/30
74-95-3	Methylene bromide	20	20.4	102	20.4	102	0	60-130/30
75-09-2	Methylene chloride	20	20.2	101	20.5	103	1	60-130/30
78-93-3	Methyl ethyl ketone	80	81.3	102	79.5	99	2	60-130/30
1634-04-4	Methyl Tert Butyl Ether	20	21.6	108	21.4	107	1	60-130/30
91-20-3	Naphthalene	20	22.1	111	21.9	110	1	60-130/30
103-65-1	n-Propylbenzene	20	22.6	113	23.4	117	3	60-130/30
100-42-5	Styrene	20	23.8	119	24.2	121	2	60-130/30
630-20-6	1,1,1,2-Tetrachloroethane	20	20.7	104	21.2	106	2	60-130/30
71-55-6	1,1,1-Trichloroethane	20	19.8	99	20.7	104	4	60-130/30
79-34-5	1,1,2,2-Tetrachloroethane	20	22.9	115	22.5	113	2	60-130/30
79-00-5	1,1,2-Trichloroethane	20	21.6	108	21.9	110	1	60-130/30
87-61-6	1,2,3-Trichlorobenzene	20	20.8	104	21.1	106	1	60-130/30
96-18-4	1,2,3-Trichloropropane	20	20.3	102	20.0	100	1	60-130/30
120-82-1	1,2,4-Trichlorobenzene	20	20.8	104	21.2	106	2	60-130/30
95-63-6	1,2,4-Trimethylbenzene	20	22.4	112	22.8	114	2	60-130/30
108-67-8	1,3,5-Trimethylbenzene	20	22.9	115	23.5	118	3	60-130/30
127-18-4	Tetrachloroethylene	20	20.8	104	22.1	111	6	60-130/30
108-88-3	Toluene	20	22.0	110	22.7	114	3	60-130/30
79-01-6	Trichloroethylene	20	20.2	101	21.3	107	5	60-130/30
75-69-4	Trichlorofluoromethane	20	19.5	98	21.1	106	8	60-130/30
75-01-4	Vinyl chloride	20	23.2	116	23.9	120	3	60-130/30
1330-20-7	Xylene (total)	60	67.4	112	69.3	116	3	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	93%	92%	60-130%
2037-26-5	Toluene-D8	99%	99%	60-130%
460-00-4	4-Bromofluorobenzene	94%	94%	60-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-BS	U8357.D	1	12/27/12	YP	n/a	n/a	VU318
VU318-BSD	U8360.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	80	61.4	77	64.9	81	6	60-130/30
71-43-2	Benzene	20	21.2	106	21.0	105	1	60-130/30
108-86-1	Bromobenzene	20	21.6	108	22.5	113	4	60-130/30
74-97-5	Bromochloromethane	20	23.3	117	23.3	117	0	60-130/30
75-27-4	Bromodichloromethane	20	20.4	102	20.3	102	0	60-130/30
75-25-2	Bromoform	20	18.0	90	18.1	91	1	60-130/30
104-51-8	n-Butylbenzene	20	24.1	121	25.1	126	4	60-130/30
135-98-8	sec-Butylbenzene	20	22.6	113	23.7	119	5	60-130/30
98-06-6	tert-Butylbenzene	20	22.6	113	23.7	119	5	60-130/30
108-90-7	Chlorobenzene	20	19.9	100	20.3	102	2	60-130/30
75-00-3	Chloroethane	20	22.5	113	22.1	111	2	60-130/30
67-66-3	Chloroform	20	23.4	117	24.0	120	3	60-130/30
95-49-8	o-Chlorotoluene	20	22.1	111	22.9	115	4	60-130/30
106-43-4	p-Chlorotoluene	20	21.9	110	22.7	114	4	60-130/30
75-15-0	Carbon disulfide	20	20.8	104	20.5	103	1	60-130/30
56-23-5	Carbon tetrachloride	20	20.4	102	20.0	100	2	60-130/30
75-34-3	1,1-Dichloroethane	20	22.0	110	22.2	111	1	60-130/30
75-35-4	1,1-Dichloroethylene	20	23.0	115	23.0	115	0	60-130/30
563-58-6	1,1-Dichloropropene	20	21.0	105	20.9	105	0	60-130/30
96-12-8	1,2-Dibromo-3-chloropropane	20	21.1	106	21.6	108	2	60-130/30
106-93-4	1,2-Dibromoethane	20	20.8	104	21.2	106	2	60-130/30
107-06-2	1,2-Dichloroethane	20	19.7	99	19.8	99	1	60-130/30
78-87-5	1,2-Dichloropropane	20	19.8	99	19.7	99	1	60-130/30
142-28-9	1,3-Dichloropropane	20	20.8	104	20.8	104	0	60-130/30
594-20-7	2,2-Dichloropropane	20	23.2	116	24.2	121	4	60-130/30
124-48-1	Dibromochloromethane	20	19.3	97	19.7	99	2	60-130/30
75-71-8	Dichlorodifluoromethane	20	24.2	121	23.4	117	3	60-130/30
156-59-2	cis-1,2-Dichloroethylene	20	25.1	126	25.6	128	2	60-130/30
10061-01-5	cis-1,3-Dichloropropene	20	21.6	108	21.7	109	0	60-130/30
541-73-1	m-Dichlorobenzene	20	20.4	102	21.1	106	3	60-130/30
95-50-1	o-Dichlorobenzene	20	20.4	102	21.0	105	3	60-130/30
106-46-7	p-Dichlorobenzene	20	22.0	110	22.8	114	4	60-130/30
156-60-5	trans-1,2-Dichloroethylene	20	25.2	126	25.7	129	2	60-130/30
10061-02-6	trans-1,3-Dichloropropene	20	20.1	101	20.4	102	1	60-130/30
100-41-4	Ethylbenzene	20	21.6	108	22.0	110	2	60-130/30
591-78-6	2-Hexanone	80	65.3	82	67.8	85	4	60-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-BS	U8357.D	1	12/27/12	YP	n/a	n/a	VU318
VU318-BSD	U8360.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	20	20.0	100	20.7	104	3	60-130/30
98-82-8	Isopropylbenzene	20	20.5	103	21.1	106	3	60-130/30
99-87-6	p-Isopropyltoluene	20	22.2	111	23.3	117	5	60-130/30
108-10-1	4-Methyl-2-pentanone	80	64.0	80	66.2	83	3	60-130/30
74-83-9	Methyl bromide	20	24.5	123	24.1	121	2	60-130/30
74-87-3	Methyl chloride	20	19.1	96	18.1	91	5	60-130/30
74-95-3	Methylene bromide	20	20.0	100	20.1	101	0	60-130/30
75-09-2	Methylene chloride	20	23.5	118	23.6	118	0	60-130/30
78-93-3	Methyl ethyl ketone	80	82.6	103	86.7	108	5	60-130/30
1634-04-4	Methyl Tert Butyl Ether	20	24.1	121	25.0	125	4	60-130/30
91-20-3	Naphthalene	20	23.5	118	24.4	122	4	60-130/30
103-65-1	n-Propylbenzene	20	22.0	110	22.8	114	4	60-130/30
100-42-5	Styrene	20	23.4	117	24.0	120	3	60-130/30
630-20-6	1,1,1,2-Tetrachloroethane	20	20.1	101	20.5	103	2	60-130/30
71-55-6	1,1,1-Trichloroethane	20	24.5	123	24.8	124	1	60-130/30
79-34-5	1,1,2,2-Tetrachloroethane	20	22.5	113	23.6	118	5	60-130/30
79-00-5	1,1,2-Trichloroethane	20	20.0	100	20.5	103	2	60-130/30
87-61-6	1,2,3-Trichlorobenzene	20	20.5	103	21.3	107	4	60-130/30
96-18-4	1,2,3-Trichloropropane	20	18.3	92	18.8	94	3	60-130/30
120-82-1	1,2,4-Trichlorobenzene	20	21.9	110	22.7	114	4	60-130/30
95-63-6	1,2,4-Trimethylbenzene	20	24.1	121	25.1	126	4	60-130/30
108-67-8	1,3,5-Trimethylbenzene	20	24.7	124	26.1	131* a	6	60-130/30
127-18-4	Tetrachloroethylene	20	18.8	94	19.5	98	4	60-130/30
108-88-3	Toluene	20	22.1	111	22.5	113	2	60-130/30
79-01-6	Trichloroethylene	20	21.3	107	21.2	106	0	60-130/30
75-69-4	Trichlorofluoromethane	20	22.5	113	22.2	111	1	60-130/30
75-01-4	Vinyl chloride	20	24.0	120	23.8	119	1	60-130/30
1330-20-7	Xylene (total)	60	66.8	111	68.5	114	3	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	109%	60-130%
2037-26-5	Toluene-D8	94%	95%	60-130%
460-00-4	4-Bromofluorobenzene	94%	97%	60-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-BS	U8357.D	1	12/27/12	YP	n/a	n/a	VU318
VU318-BSD	U8360.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

(a) Outside control limits (high bias). Not detected in associated samples. AZ:L1

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-BS	W36449.D	1	12/28/12	KN	n/a	n/a	VW1269
VW1269-BSD	W36450.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	80	64.9	81	60.9	76	6	60-130/30
71-43-2	Benzene	20	20.9	105	21.3	107	2	60-130/30
108-86-1	Bromobenzene	20	20.0	100	20.8	104	4	60-130/30
74-97-5	Bromochloromethane	20	22.6	113	23.5	118	4	60-130/30
75-27-4	Bromodichloromethane	20	22.2	111	22.4	112	1	60-130/30
75-25-2	Bromoform	20	23.0	115	23.3	117	1	60-130/30
104-51-8	n-Butylbenzene	20	20.3	102	20.6	103	1	60-130/30
135-98-8	sec-Butylbenzene	20	19.0	95	19.0	95	0	60-130/30
98-06-6	tert-Butylbenzene	20	19.1	96	19.4	97	2	60-130/30
108-90-7	Chlorobenzene	20	19.2	96	19.4	97	1	60-130/30
75-00-3	Chloroethane	20	19.9	100	21.8	109	9	60-130/30
67-66-3	Chloroform	20	21.5	108	22.2	111	3	60-130/30
95-49-8	o-Chlorotoluene	20	19.6	98	20.0	100	2	60-130/30
106-43-4	p-Chlorotoluene	20	18.2	91	18.8	94	3	60-130/30
75-15-0	Carbon disulfide	20	22.5	113	23.2	116	3	60-130/30
56-23-5	Carbon tetrachloride	20	22.9	115	22.2	111	3	60-130/30
75-34-3	1,1-Dichloroethane	20	20.5	103	21.1	106	3	60-130/30
75-35-4	1,1-Dichloroethylene	20	20.5	103	20.7	104	1	60-130/30
563-58-6	1,1-Dichloropropene	20	22.9	115	22.6	113	1	60-130/30
96-12-8	1,2-Dibromo-3-chloropropane	20	20.5	103	21.3	107	4	60-130/30
106-93-4	1,2-Dibromoethane	20	21.8	109	21.8	109	0	60-130/30
107-06-2	1,2-Dichloroethane	20	22.4	112	22.4	112	0	60-130/30
78-87-5	1,2-Dichloropropane	20	20.8	104	21.5	108	3	60-130/30
142-28-9	1,3-Dichloropropane	20	20.9	105	21.2	106	1	60-130/30
594-20-7	2,2-Dichloropropane	20	21.8	109	22.2	111	2	60-130/30
124-48-1	Dibromochloromethane	20	21.5	108	21.6	108	0	60-130/30
75-71-8	Dichlorodifluoromethane	20	24.1	121	26.5	133* a	9	60-130/30
156-59-2	cis-1,2-Dichloroethylene	20	21.1	106	21.6	108	2	60-130/30
10061-01-5	cis-1,3-Dichloropropene	20	25.2	126	25.5	128	1	60-130/30
541-73-1	m-Dichlorobenzene	20	18.6	93	19.1	96	3	60-130/30
95-50-1	o-Dichlorobenzene	20	18.9	95	19.8	99	5	60-130/30
106-46-7	p-Dichlorobenzene	20	20.2	101	20.9	105	3	60-130/30
156-60-5	trans-1,2-Dichloroethylene	20	20.8	104	21.4	107	3	60-130/30
10061-02-6	trans-1,3-Dichloropropene	20	20.8	104	21.1	106	1	60-130/30
100-41-4	Ethylbenzene	20	20.6	103	20.8	104	1	60-130/30
591-78-6	2-Hexanone	80	85.0	106	79.7	100	6	60-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-BS	W36449.D	1	12/28/12	KN	n/a	n/a	VW1269
VW1269-BSD	W36450.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	20	20.0	100	21.2	106	6	60-130/30
98-82-8	Isopropylbenzene	20	19.5	98	19.4	97	1	60-130/30
99-87-6	p-Isopropyltoluene	20	18.8	94	19.0	95	1	60-130/30
108-10-1	4-Methyl-2-pentanone	80	85.4	107	82.5	103	3	60-130/30
74-83-9	Methyl bromide	20	20.6	103	22.6	113	9	60-130/30
74-87-3	Methyl chloride	20	17.8	89	20.8	104	16	60-130/30
74-95-3	Methylene bromide	20	22.4	112	22.8	114	2	60-130/30
75-09-2	Methylene chloride	20	21.2	106	21.7	109	2	60-130/30
78-93-3	Methyl ethyl ketone	80	83.3	104	79.2	99	5	60-130/30
1634-04-4	Methyl Tert Butyl Ether	20	22.5	113	23.5	118	4	60-130/30
91-20-3	Naphthalene	20	20.8	104	21.8	109	5	60-130/30
103-65-1	n-Propylbenzene	20	18.4	92	18.5	93	1	60-130/30
100-42-5	Styrene	20	21.7	109	22.0	110	1	60-130/30
630-20-6	1,1,1,2-Tetrachloroethane	20	21.8	109	22.2	111	2	60-130/30
71-55-6	1,1,1-Trichloroethane	20	22.2	111	22.5	113	1	60-130/30
79-34-5	1,1,2,2-Tetrachloroethane	20	20.9	105	21.4	107	2	60-130/30
79-00-5	1,1,2-Trichloroethane	20	20.6	103	21.0	105	2	60-130/30
87-61-6	1,2,3-Trichlorobenzene	20	20.3	102	21.7	109	7	60-130/30
96-18-4	1,2,3-Trichloropropane	20	19.8	99	19.5	98	2	60-130/30
120-82-1	1,2,4-Trichlorobenzene	20	20.0	100	21.2	106	6	60-130/30
95-63-6	1,2,4-Trimethylbenzene	20	20.8	104	21.3	107	2	60-130/30
108-67-8	1,3,5-Trimethylbenzene	20	21.2	106	21.6	108	2	60-130/30
127-18-4	Tetrachloroethylene	20	21.0	105	21.1	106	0	60-130/30
108-88-3	Toluene	20	21.0	105	21.1	106	0	60-130/30
79-01-6	Trichloroethylene	20	21.7	109	21.8	109	0	60-130/30
75-69-4	Trichlorofluoromethane	20	20.6	103	22.7	114	10	60-130/30
75-01-4	Vinyl chloride	20	22.2	111	24.8	124	11	60-130/30
1330-20-7	Xylene (total)	60	60.4	101	60.4	101	0	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	101%	102%	60-130%
2037-26-5	Toluene-D8	98%	97%	60-130%
460-00-4	4-Bromofluorobenzene	103%	101%	60-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-BS	W36449.D	1	12/28/12	KN	n/a	n/a	VW1269
VW1269-BSD	W36450.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

(a) Outside laboratory control limits. AZ:L1

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ490-BS	Q12486.D	1	01/03/13	TN	n/a	n/a	VQ490
VQ490-BSD	Q12490.D	1	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	80	74.3	93	74.6	93	0	60-130/30
71-43-2	Benzene	20	19.8	99	20.8	104	5	60-130/30
108-86-1	Bromobenzene	20	20.1	101	20.6	103	2	60-130/30
74-97-5	Bromochloromethane	20	19.0	95	19.7	99	4	60-130/30
75-27-4	Bromodichloromethane	20	16.8	84	17.9	90	6	60-130/30
75-25-2	Bromoform	20	19.1	96	19.5	98	2	60-130/30
104-51-8	n-Butylbenzene	20	23.4	117	22.4	112	4	60-130/30
135-98-8	sec-Butylbenzene	20	21.1	106	21.6	108	2	60-130/30
98-06-6	tert-Butylbenzene	20	21.7	109	22.3	112	3	60-130/30
108-90-7	Chlorobenzene	20	18.7	94	19.0	95	2	60-130/30
75-00-3	Chloroethane	20	21.5	108	22.3	112	4	60-130/30
67-66-3	Chloroform	20	17.8	89	18.8	94	5	60-130/30
95-49-8	o-Chlorotoluene	20	19.7	99	20.9	105	6	60-130/30
106-43-4	p-Chlorotoluene	20	19.5	98	18.7	94	4	60-130/30
75-15-0	Carbon disulfide	20	21.9	110	23.5	118	7	60-130/30
56-23-5	Carbon tetrachloride	20	17.6	88	19.1	96	8	60-130/30
75-34-3	1,1-Dichloroethane	20	18.7	94	20.0	100	7	60-130/30
75-35-4	1,1-Dichloroethylene	20	19.6	98	20.7	104	5	60-130/30
563-58-6	1,1-Dichloropropene	20	20.9	105	22.2	111	6	60-130/30
96-12-8	1,2-Dibromo-3-chloropropane	20	19.4	97	18.1	91	7	60-130/30
106-93-4	1,2-Dibromoethane	20	19.6	98	20.2	101	3	60-130/30
107-06-2	1,2-Dichloroethane	20	15.8	79	17.0	85	7	60-130/30
78-87-5	1,2-Dichloropropane	20	19.4	97	20.4	102	5	60-130/30
142-28-9	1,3-Dichloropropane	20	19.8	99	20.1	101	2	60-130/30
594-20-7	2,2-Dichloropropane	20	18.6	93	19.5	98	5	60-130/30
124-48-1	Dibromochloromethane	20	18.5	93	18.9	95	2	60-130/30
75-71-8	Dichlorodifluoromethane	20	19.6	98	20.2	101	3	60-130/30
156-59-2	cis-1,2-Dichloroethylene	20	19.6	98	20.4	102	4	60-130/30
10061-01-5	cis-1,3-Dichloropropene	20	21.6	108	23.0	115	6	60-130/30
541-73-1	m-Dichlorobenzene	20	18.5	93	18.9	95	2	60-130/30
95-50-1	o-Dichlorobenzene	20	20.2	101	18.6	93	8	60-130/30
106-46-7	p-Dichlorobenzene	20	19.7	99	20.3	102	3	60-130/30
156-60-5	trans-1,2-Dichloroethylene	20	20.7	104	21.7	109	5	60-130/30
10061-02-6	trans-1,3-Dichloropropene	20	19.0	95	19.7	99	4	60-130/30
100-41-4	Ethylbenzene	20	20.9	105	21.3	107	2	60-130/30
591-78-6	2-Hexanone	80	83.6	105	81.8	102	2	60-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ490-BS	Q12486.D	1	01/03/13	TN	n/a	n/a	VQ490
VQ490-BSD	Q12490.D	1	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	20	20.3	102	19.4	97	5	60-130/30
98-82-8	Isopropylbenzene	20	19.9	100	20.3	102	2	60-130/30
99-87-6	p-Isopropyltoluene	20	21.1	106	21.4	107	1	60-130/30
108-10-1	4-Methyl-2-pentanone	80	82.9	104	81.7	102	1	60-130/30
74-83-9	Methyl bromide	20	20.6	103	21.4	107	4	60-130/30
74-87-3	Methyl chloride	20	21.6	108	22.4	112	4	60-130/30
74-95-3	Methylene bromide	20	17.3	87	18.3	92	6	60-130/30
75-09-2	Methylene chloride	20	18.6	93	19.4	97	4	60-130/30
78-93-3	Methyl ethyl ketone	80	80.2	100	79.9	100	0	60-130/30
1634-04-4	Methyl Tert Butyl Ether	20	18.9	95	19.9	100	5	60-130/30
91-20-3	Naphthalene	20	21.1	106	20.3	102	4	60-130/30
103-65-1	n-Propylbenzene	20	20.3	102	20.7	104	2	60-130/30
100-42-5	Styrene	20	22.4	112	22.8	114	2	60-130/30
630-20-6	1,1,1,2-Tetrachloroethane	20	19.3	97	19.7	99	2	60-130/30
71-55-6	1,1,1-Trichloroethane	20	18.5	93	19.8	99	7	60-130/30
79-34-5	1,1,2,2-Tetrachloroethane	20	20.1	101	20.7	104	3	60-130/30
79-00-5	1,1,2-Trichloroethane	20	18.9	95	19.5	98	3	60-130/30
87-61-6	1,2,3-Trichlorobenzene	20	19.5	98	19.6	98	1	60-130/30
96-18-4	1,2,3-Trichloropropane	20	18.7	94	18.7	94	0	60-130/30
120-82-1	1,2,4-Trichlorobenzene	20	20.2	101	19.8	99	2	60-130/30
95-63-6	1,2,4-Trimethylbenzene	20	21.9	110	22.5	113	3	60-130/30
108-67-8	1,3,5-Trimethylbenzene	20	23.1	116	23.6	118	2	60-130/30
127-18-4	Tetrachloroethylene	20	21.1	106	21.3	107	1	60-130/30
108-88-3	Toluene	20	21.5	108	22.0	110	2	60-130/30
79-01-6	Trichloroethylene	20	18.6	93	19.8	99	6	60-130/30
75-69-4	Trichlorofluoromethane	20	18.4	92	19.1	96	4	60-130/30
75-01-4	Vinyl chloride	20	23.3	117	24.3	122	4	60-130/30
1330-20-7	Xylene (total)	60	63.3	106	64.2	107	1	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	96%	99%	60-130%
2037-26-5	Toluene-D8	110%	108%	60-130%
460-00-4	4-Bromofluorobenzene	102%	100%	60-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU318-LCS	U8358.D	1	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	60-130%
2037-26-5	Toluene-D8	99%	60-130%
460-00-4	4-Bromofluorobenzene	98%	60-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ487-LCS	Q12414.D	1	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	89%	60-130%
2037-26-5	Toluene-D8	101%	60-130%
460-00-4	4-Bromofluorobenzene	93%	60-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1269-LCS	W36451.D	1	12/28/12	KN	n/a	n/a	VW1269

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-3

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	60-130%
2037-26-5	Toluene-D8	99%	60-130%
460-00-4	4-Bromofluorobenzene	103%	60-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ490-LCS	Q12488.D	1	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	92%	60-130%
2037-26-5	Toluene-D8	110%	60-130%
460-00-4	4-Bromofluorobenzene	99%	60-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25432-3MS	U8376.D	400	12/27/12	YP	n/a	n/a	VU318
C25432-3MSD	U8377.D	400	12/27/12	YP	n/a	n/a	VU318
C25432-3	U8366.D	400	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	C25432-3 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
67-64-1	Acetone	ND		32000	23000	72	24100	75	5	60-130/25
71-43-2	Benzene	247	J	8000	8020	97	7900	96	2	60-130/25
108-86-1	Bromobenzene	ND		8000	8410	105	8180	102	3	60-130/25
74-97-5	Bromochloromethane	ND		8000	8930	112	8560	107	4	60-130/25
75-27-4	Bromodichloromethane	ND		8000	7660	96	7500	94	2	60-130/25
75-25-2	Bromoform	ND		8000	5910	74	6080	76	3	60-130/25
104-51-8	n-Butylbenzene	ND		8000	9070	113	8910	111	2	60-130/25
135-98-8	sec-Butylbenzene	ND		8000	8750	109	8560	107	2	60-130/25
98-06-6	tert-Butylbenzene	ND		8000	8800	110	8520	107	3	60-130/25
108-90-7	Chlorobenzene	ND		8000	7700	96	7540	94	2	60-130/25
75-00-3	Chloroethane	ND		8000	8460	106	8450	106	0	60-130/25
67-66-3	Chloroform	829		8000	9760	112	9550	109	2	60-130/25
95-49-8	o-Chlorotoluene	ND		8000	8380	105	8320	104	1	60-130/25
106-43-4	p-Chlorotoluene	ND		8000	8220	103	7980	100	3	60-130/25
75-15-0	Carbon disulfide	118	J	8000	7050	87	7060	87	0	60-130/25
56-23-5	Carbon tetrachloride	ND		8000	8090	101	7660	96	5	60-130/25
75-34-3	1,1-Dichloroethane	996		8000	8900	99	8870	98	0	60-130/25
75-35-4	1,1-Dichloroethylene	1530		8000	10100	107	9880	104	2	60-130/25
563-58-6	1,1-Dichloropropene	ND		8000	7800	98	7640	96	2	60-130/25
96-12-8	1,2-Dibromo-3-chloropropane	ND		8000	8020	100	8160	102	2	60-130/25
106-93-4	1,2-Dibromoethane	ND		8000	7970	100	7930	99	1	60-130/25
107-06-2	1,2-Dichloroethane	6780		8000	14700	99	14400	95	2	60-130/25
78-87-5	1,2-Dichloropropane	ND		8000	7100	89	7100	89	0	60-130/25
142-28-9	1,3-Dichloropropane	ND		8000	7650	96	7750	97	1	60-130/25
594-20-7	2,2-Dichloropropane	ND		8000	8570	107	8270	103	4	60-130/25
124-48-1	Dibromochloromethane	ND		8000	6990	87	7060	88	1	60-130/25
75-71-8	Dichlorodifluoromethane	ND		8000	10400	130	10100	126	3	60-130/25
156-59-2	cis-1,2-Dichloroethylene	28000		8000	37500	119	36500	106	3	60-130/25
10061-01-5	cis-1,3-Dichloropropene	ND		8000	7780	97	7740	97	1	60-130/25
541-73-1	m-Dichlorobenzene	ND		8000	7790	97	7730	97	1	60-130/25
95-50-1	o-Dichlorobenzene	ND		8000	7780	97	7750	97	0	60-130/25
106-46-7	p-Dichlorobenzene	ND		8000	8420	105	8250	103	2	60-130/25
156-60-5	trans-1,2-Dichloroethylene	274	J	8000	9640	117	9450	115	2	60-130/25
10061-02-6	trans-1,3-Dichloropropene	ND		8000	7290	91	7440	93	2	60-130/25
100-41-4	Ethylbenzene	ND		8000	8290	104	8110	101	2	60-130/25
591-78-6	2-Hexanone	ND		32000	23800	74	24700	77	4	60-130/25

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25432-3MS	U8376.D	400	12/27/12	YP	n/a	n/a	VU318
C25432-3MSD	U8377.D	400	12/27/12	YP	n/a	n/a	VU318
C25432-3	U8366.D	400	12/27/12	YP	n/a	n/a	VU318

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-8, C25485-9, C25485-10, C25485-11, C25485-12, C25485-13

CAS No.	Compound	C25432-3 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	ND	8000	7380	92	7290	91	1	60-130/25
98-82-8	Isopropylbenzene	ND	8000	7940	99	7780	97	2	60-130/25
99-87-6	p-Isopropyltoluene	ND	8000	8590	107	8330	104	3	60-130/25
108-10-1	4-Methyl-2-pentanone	ND	32000	23500	73	24100	75	3	60-130/25
74-83-9	Methyl bromide	ND	8000	9650	121	9550	119	1	60-130/25
74-87-3	Methyl chloride	ND	8000	6820	85	6730	84	1	60-130/25
74-95-3	Methylene bromide	ND	8000	7690	96	7520	94	2	60-130/25
75-09-2	Methylene chloride	ND	8000	8400	105	8420	105	0	60-130/25
78-93-3	Methyl ethyl ketone	ND	32000	30300	95	31100	97	3	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND	8000	8800	110	8950	112	2	60-130/25
91-20-3	Naphthalene	ND	8000	8630	108	9200	115	6	60-130/25
103-65-1	n-Propylbenzene	ND	8000	8290	104	8110	101	2	60-130/25
100-42-5	Styrene	ND	8000	9000	113	8900	111	1	60-130/25
630-20-6	1,1,1,2-Tetrachloroethane	ND	8000	7850	98	7510	94	4	60-130/25
71-55-6	1,1,1-Trichloroethane	ND	8000	9470	118	9080	114	4	60-130/25
79-34-5	1,1,2,2-Tetrachloroethane	ND	8000	8400	105	8410	105	0	60-130/25
79-00-5	1,1,2-Trichloroethane	ND	8000	7510	94	7580	95	1	60-130/25
87-61-6	1,2,3-Trichlorobenzene	ND	8000	7400	93	7760	97	5	60-130/25
96-18-4	1,2,3-Trichloropropane	ND	8000	6420	80	6770	85	5	60-130/25
120-82-1	1,2,4-Trichlorobenzene	ND	8000	8020	100	8190	102	2	60-130/25
95-63-6	1,2,4-Trimethylbenzene	ND	8000	9250	116	9050	113	2	60-130/25
108-67-8	1,3,5-Trimethylbenzene	ND	8000	9540	119	9280	116	3	60-130/25
127-18-4	Tetrachloroethylene	ND	8000	7400	93	7230	90	2	60-130/25
108-88-3	Toluene	559	8000	8970	105	8880	104	1	60-130/25
79-01-6	Trichloroethylene	148	J 8000	8390	103	8090	99	4	60-130/25
75-69-4	Trichlorofluoromethane	ND	8000	9840	123	9410	118	4	60-130/25
75-01-4	Vinyl chloride	25800	8000	34200	105	33500	96	2	60-130/25
1330-20-7	Xylene (total)	ND	24000	26200	109	25600	107	2	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C25432-3	Limits
1868-53-7	Dibromofluoromethane	108%	104%	107%	60-130%
2037-26-5	Toluene-D8	91%	93%	98%	60-130%
460-00-4	4-Bromofluorobenzene	93%	97%	93%	60-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25483-1MS	Q12431.D	20	12/27/12	TN	n/a	n/a	VQ487
C25483-1MSD	Q12432.D	20	12/27/12	TN	n/a	n/a	VQ487
C25483-1	Q12425.D	20	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	C25483-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
67-64-1	Acetone	ND		1600	1440	90	1390	87	4	60-130/25
71-43-2	Benzene	1010		400	1350	85	1420	103	5	60-130/25
108-86-1	Bromobenzene	ND		400	410	103	423	106	3	60-130/25
74-97-5	Bromochloromethane	ND		400	402	101	382	96	5	60-130/25
75-27-4	Bromodichloromethane	ND		400	365	91	360	90	1	60-130/25
75-25-2	Bromoform	ND		400	308	77	322	81	4	60-130/25
104-51-8	n-Butylbenzene	10.2	J	400	393	96	412	100	5	60-130/25
135-98-8	sec-Butylbenzene	6.0	J	400	413	102	427	105	3	60-130/25
98-06-6	tert-Butylbenzene	ND		400	410	103	424	106	3	60-130/25
108-90-7	Chlorobenzene	ND		400	401	100	400	100	0	60-130/25
75-00-3	Chloroethane	ND		400	469	117	430	108	9	60-130/25
67-66-3	Chloroform	ND		400	391	98	367	92	6	60-130/25
95-49-8	o-Chlorotoluene	ND		400	420	105	422	106	0	60-130/25
106-43-4	p-Chlorotoluene	ND		400	382	96	397	99	4	60-130/25
75-15-0	Carbon disulfide	ND		400	334	84	341	85	2	60-130/25
56-23-5	Carbon tetrachloride	ND		400	345	86	340	85	1	60-130/25
75-34-3	1,1-Dichloroethane	ND		400	407	102	386	97	5	60-130/25
75-35-4	1,1-Dichloroethylene	ND		400	397	99	379	95	5	60-130/25
563-58-6	1,1-Dichloropropene	ND		400	382	96	384	96	1	60-130/25
96-12-8	1,2-Dibromo-3-chloropropane	ND		400	377	94	392	98	4	60-130/25
106-93-4	1,2-Dibromoethane	ND		400	413	103	420	105	2	60-130/25
107-06-2	1,2-Dichloroethane	ND		400	350	88	340	85	3	60-130/25
78-87-5	1,2-Dichloropropane	ND		400	412	103	403	101	2	60-130/25
142-28-9	1,3-Dichloropropane	ND		400	407	102	405	101	0	60-130/25
594-20-7	2,2-Dichloropropane	ND		400	310	78	287	72	8	60-130/25
124-48-1	Dibromochloromethane	ND		400	351	88	357	89	2	60-130/25
75-71-8	Dichlorodifluoromethane	ND		400	407	102	372	93	9	60-130/25
156-59-2	cis-1,2-Dichloroethylene	ND		400	408	102	385	96	6	60-130/25
10061-01-5	cis-1,3-Dichloropropene	ND		400	381	95	380	95	0	60-130/25
541-73-1	m-Dichlorobenzene	ND		400	400	100	411	103	3	60-130/25
95-50-1	o-Dichlorobenzene	ND		400	399	100	403	101	1	60-130/25
106-46-7	p-Dichlorobenzene	ND		400	394	99	403	101	2	60-130/25
156-60-5	trans-1,2-Dichloroethylene	ND		400	409	102	390	98	5	60-130/25
10061-02-6	trans-1,3-Dichloropropene	ND		400	381	95	381	95	0	60-130/25
100-41-4	Ethylbenzene	82.4		400	481	100	494	103	3	60-130/25
591-78-6	2-Hexanone	ND		1600	1510	94	1600	100	6	60-130/25

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25483-1MS	Q12431.D	20	12/27/12	TN	n/a	n/a	VQ487
C25483-1MSD	Q12432.D	20	12/27/12	TN	n/a	n/a	VQ487
C25483-1	Q12425.D	20	12/27/12	TN	n/a	n/a	VQ487

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-1, C25485-2, C25485-4, C25485-5, C25485-6, C25485-7, C25485-15

CAS No.	Compound	C25483-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	ND	400	321	80	349	87	8	60-130/25
98-82-8	Isopropylbenzene	33.2	400	433	100	442	102	2	60-130/25
99-87-6	p-Isopropyltoluene	ND	400	404	101	421	105	4	60-130/25
108-10-1	4-Methyl-2-pentanone	ND	1600	1510	94	1540	96	2	60-130/25
74-83-9	Methyl bromide	ND	400	454	114	415	104	9	60-130/25
74-87-3	Methyl chloride	ND	400	437	109	406	102	7	60-130/25
74-95-3	Methylene bromide	ND	400	377	94	372	93	1	60-130/25
75-09-2	Methylene chloride	ND	400	385	96	366	92	5	60-130/25
78-93-3	Methyl ethyl ketone	ND	1600	1530	96	1540	96	1	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND	400	407	102	388	97	5	60-130/25
91-20-3	Naphthalene	286	400	691	101	736	113	6	60-130/25
103-65-1	n-Propylbenzene	61.3	400	468	102	491	107	5	60-130/25
100-42-5	Styrene	ND	400	439	110	443	111	1	60-130/25
630-20-6	1,1,1,2-Tetrachloroethane	ND	400	387	97	388	97	0	60-130/25
71-55-6	1,1,1-Trichloroethane	ND	400	378	95	359	90	5	60-130/25
79-34-5	1,1,2,2-Tetrachloroethane	ND	400	427	107	444	111	4	60-130/25
79-00-5	1,1,2-Trichloroethane	ND	400	407	102	408	102	0	60-130/25
87-61-6	1,2,3-Trichlorobenzene	ND	400	380	95	391	98	3	60-130/25
96-18-4	1,2,3-Trichloropropane	ND	400	347	87	354	89	2	60-130/25
120-82-1	1,2,4-Trichlorobenzene	ND	400	376	94	386	97	3	60-130/25
95-63-6	1,2,4-Trimethylbenzene	ND	400	411	103	422	106	3	60-130/25
108-67-8	1,3,5-Trimethylbenzene	9.2	J 400	430	105	445	109	3	60-130/25
127-18-4	Tetrachloroethylene	ND	400	386	97	396	99	3	60-130/25
108-88-3	Toluene	22.9	400	433	103	437	104	1	60-130/25
79-01-6	Trichloroethylene	ND	400	386	97	377	94	2	60-130/25
75-69-4	Trichlorofluoromethane	ND	400	404	101	380	95	6	60-130/25
75-01-4	Vinyl chloride	ND	400	465	116	432	108	7	60-130/25
1330-20-7	Xylene (total)	16.0	J 1200	1270	105	1280	105	1	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C25483-1	Limits
1868-53-7	Dibromofluoromethane	94%	91%	94%	60-130%
2037-26-5	Toluene-D8	98%	102%	100%	60-130%
460-00-4	4-Bromofluorobenzene	96%	96%	93%	60-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25474-9MS	Q12505.D	5	01/03/13	TN	n/a	n/a	VQ490
C25474-9MSD	Q12506.D	5	01/03/13	TN	n/a	n/a	VQ490
C25474-9	Q12492.D	5	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	C25474-9 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	400	387	97	415	104	7	38-159/24
71-43-2	Benzene	ND	100	100	100	104	104	4	77-122/16
108-86-1	Bromobenzene	ND	100	99.2	99	103	103	4	76-126/17
74-97-5	Bromochloromethane	ND	100	98.0	98	103	103	5	77-130/17
75-27-4	Bromodichloromethane	ND	100	85.0	85	88.5	89	4	75-127/16
75-25-2	Bromoform	ND	100	73.8	74	76.1	76	3	69-141/17
104-51-8	n-Butylbenzene	ND	100	107	107	107	107	0	72-129/18
135-98-8	sec-Butylbenzene	ND	100	103	103	102	102	1	74-128/18
98-06-6	tert-Butylbenzene	ND	100	105	105	107	107	2	73-127/18
108-90-7	Chlorobenzene	ND	100	92.5	93	95.4	95	3	77-122/16
75-00-3	Chloroethane	ND	100	111	111	110	110	1	69-133/18
67-66-3	Chloroform	ND	100	95.2	95	100	100	5	74-126/17
95-49-8	o-Chlorotoluene	ND	100	100	100	104	104	4	72-127/20
106-43-4	p-Chlorotoluene	ND	100	89.9	90	92.8	93	3	68-127/18
75-15-0	Carbon disulfide	ND	100	92.4	92	91.8	92	1	56-137/19
56-23-5	Carbon tetrachloride	ND	100	90.0	90	88.1	88	2	71-133/19
75-34-3	1,1-Dichloroethane	ND	100	99.5	100	104	104	4	71-125/17
75-35-4	1,1-Dichloroethylene	ND	100	100	100	101	101	1	66-125/20
563-58-6	1,1-Dichloropropene	ND	100	106	106	106	106	0	75-124/18
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	86.2	86	90.8	91	5	65-131/20
106-93-4	1,2-Dibromoethane	ND	100	97.9	98	101	101	3	75-135/17
107-06-2	1,2-Dichloroethane	ND	100	85.8	86	89.3	89	4	71-131/17
78-87-5	1,2-Dichloropropane	ND	100	100	100	104	104	4	78-124/16
142-28-9	1,3-Dichloropropane	ND	100	99.8	100	103	103	3	78-123/16
594-20-7	2,2-Dichloropropane	ND	100	87.4	87	87.4	87	0	70-131/19
124-48-1	Dibromochloromethane	ND	100	82.3	82	85.2	85	3	76-132/16
75-71-8	Dichlorodifluoromethane	ND	100	108	108	97.7	98	10	32-168/28
156-59-2	cis-1,2-Dichloroethylene	ND	100	100	100	106	106	6	73-126/17
10061-01-5	cis-1,3-Dichloropropene	ND	100	98.5	99	103	103	4	72-130/16
541-73-1	m-Dichlorobenzene	ND	100	90.9	91	94.0	94	3	75-124/16
95-50-1	o-Dichlorobenzene	ND	100	90.2	90	93.6	94	4	76-124/16
106-46-7	p-Dichlorobenzene	ND	100	97.1	97	101	101	4	75-124/16
156-60-5	trans-1,2-Dichloroethylene	ND	100	105	105	109	109	4	71-126/18
10061-02-6	trans-1,3-Dichloropropene	ND	100	84.6	85	87.2	87	3	71-126/16
100-41-4	Ethylbenzene	ND	100	103	103	104	104	1	76-126/17
591-78-6	2-Hexanone	ND	400	410	103	432	108	5	67-150/22

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C25485
Account: CTESAZT City of Tucson Environmental Services
Project: URSAZT: Broadway & Pantano

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C25474-9MS	Q12505.D	5	01/03/13	TN	n/a	n/a	VQ490
C25474-9MSD	Q12506.D	5	01/03/13	TN	n/a	n/a	VQ490
C25474-9	Q12492.D	5	01/03/13	TN	n/a	n/a	VQ490

The QC reported here applies to the following samples:

Method: SW846 8260B

C25485-14

CAS No.	Compound	C25474-9 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	ND	100	91.3	91	91.7	92	0	69-135/20
98-82-8	Isopropylbenzene	ND	100	96.7	97	97.2	97	1	61-125/17
99-87-6	p-Isopropyltoluene	ND	100	101	101	102	102	1	68-127/18
108-10-1	4-Methyl-2-pentanone	ND	400	387	97	410	103	6	71-142/21
74-83-9	Methyl bromide	ND	100	104	104	107	107	3	68-132/18
74-87-3	Methyl chloride	ND	100	111	111	112	112	1	39-150/28
74-95-3	Methylene bromide	ND	100	90.1	90	94.6	95	5	77-127/16
75-09-2	Methylene chloride	ND	100	96.1	96	101	101	5	67-128/18
78-93-3	Methyl ethyl ketone	ND	400	402	101	436	109	8	56-155/23
1634-04-4	Methyl Tert Butyl Ether	ND	100	98.3	98	104	104	6	73-132/17
91-20-3	Naphthalene	ND	100	98.3	98	104	104	6	70-136/20
103-65-1	n-Propylbenzene	ND	100	97.7	98	99.5	100	2	71-127/17
100-42-5	Styrene	ND	100	105	105	108	108	3	72-134/16
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	94.4	94	97.9	98	4	77-130/16
71-55-6	1,1,1-Trichloroethane	ND	100	98.0	98	99.6	100	2	74-128/19
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	101	101	106	106	5	77-129/17
79-00-5	1,1,2-Trichloroethane	ND	100	96.0	96	101	101	5	77-125/16
87-61-6	1,2,3-Trichlorobenzene	ND	100	94.1	94	98.0	98	4	70-133/18
96-18-4	1,2,3-Trichloropropane	ND	100	77.3	77	81.9	82	6	69-126/18
120-82-1	1,2,4-Trichlorobenzene	ND	100	93.9	94	98.9	99	5	68-129/17
95-63-6	1,2,4-Trimethylbenzene	ND	100	106	106	110	110	4	74-129/17
108-67-8	1,3,5-Trimethylbenzene	ND	100	111	111	113	113	2	77-129/17
127-18-4	Tetrachloroethylene	ND	100	99.7	100	100	100	0	69-127/20
108-88-3	Toluene	ND	100	105	105	108	108	3	75-122/17
79-01-6	Trichloroethylene	ND	100	95.5	96	98.2	98	3	78-123/17
75-69-4	Trichlorofluoromethane	ND	100	99.8	100	91.3	91	9	65-136/23
75-01-4	Vinyl chloride	ND	100	120	120	117	117	3	57-146/22
1330-20-7	Xylene (total)	ND	300	309	103	317	106	3	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C25474-9	Limits
1868-53-7	Dibromofluoromethane	103%	104%	95%	80-117%
2037-26-5	Toluene-D8	108%	107%	108%	84-114%
460-00-4	4-Bromofluorobenzene	103%	103%	99%	84-112%

* = Outside of Control Limits.

URS Standard Operating Procedure:

Passive Diffusion Samplers

A passive diffusion sampler (PDS) consists of low-density polyethylene (LDPE) tubing, containing laboratory-grade water, and sealed at both ends. LDPE is permeable to some types of VOCs. Therefore, VOCs in groundwater (if present) will diffuse through the LDPE and into the laboratory-grade water until the VOC concentration within the PDS is in equilibrium with the VOC concentration in the surrounding groundwater. PDSs will be placed in the selected wells a minimum of two weeks prior to the start of each sampling event, but typically a new PDS will be placed in the well after each sample is collected.

PDSs will be obtained, already constructed, from an analytical laboratory. Prior to deployment the tubes will be filled with ASTM Type II certified, laboratory-grade, analyte-free, deionized water, being careful to avoid large air bubbles. The PDSs will be furnished with a re-sealable cap to allow for filling and sample collection. The tubes will be encased with LDPE mesh tubing to provide abrasion resistance. The PDSs should be malleable enough to bend at least 90 degrees without bursting and have approximately 12 to 13 inches of ASTM water enclosed. Samplers not meeting this standard, or leaking samplers, will be discarded.

PDS Deployment

The procedures for installing the diffusion samplers are as follows:

- Before starting PDS deployment activities, check well for security damage or evidence of tampering, record pertinent observations.
- Protect equipment by laying out on a clean surface (for example plastic sheeting, aluminum foil, or similar).
- Measure the static water level in the well.
- Verify well total depth.
- Remove a diffusive sampler from the packaging.
- Attach the sample bag to the well-specific length stainless steel cable using the stainless steel snap hooks. If multiple bags are used, they will be "daisy-chained" together with an appropriate length cable between adjacent bags so that the target depths are monitored.
- Secure a stainless-steel weight to the stainless-steel snap hooks on the bottom of the lower sampler to prevent the sampler(s) from floating above the desired interval(s).
- Slowly lower the diffusion bag sampler(s) down the well until the appropriate depth is reached. PDSs will be hung from a measured length of nylon rope or stainless steel cable sufficient to situate the middle of the sampler at the appropriate target depth(s).
- Secure the line either to the casing of the well's stickup or to the locking cap. Place the plastic safety disc outside or on top of the well casing to prevent dropping of the harness.
- The well cover will be closed and the PDS(s) left in the well until the next scheduled sampling event, or for a minimum of two weeks before sample collection.

Sample Collection

After a minimum waiting period (normally at least 2 weeks), sample collection may begin using the following procedures:

- Follow steps 1 through 4 from the PDS deployment procedures.
- Remove the sampler(s) from the well by gently raising on the attached line.
- Remove the sample-filled polyethylene bag(s) from the protective screen and dry with a clean paper towel.
- Samples will be collected by removing the dedicated PDS cap. Water samples will be poured, as slowly as feasibly possible to reduce aeration, directly into pre-preserved sampling containers (VOA vials). Sample vials will be placed in a cooler containing wet ice immediately after collection.
- Re-fill water of a quality as specified in the initial fill procedure, will be used to re-fill the PDS. The dedicated cap will be replaced and the PDS re-lowered in the well to the specified depth in preparation for the next sampling event.

ATTACHMENT J
STANDARD OPERATING PROCEDURES
BROADWAY-PANTANO WQARF SITE
TUCSON, ARIZONA

June16, 2011

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APPENDICES

Appendix A	Field Documentation Forms
Appendix B	Sampling Apparatus Diagram and Operating Instructions

This Standard Operating Procedure (SOP) discusses the procedures for collecting groundwater monitoring well samples and measuring fluid levels at the Broadway-Pantano WQARF Site in Tucson, Arizona.

1 SCOPE AND APPLICATION

- 1.1 This SOP describes activities and protocols for collecting groundwater samples and measuring fluid levels from wells.
- 1.2 This SOP is intended to be detailed enough that all field personnel following these procedures will deliver samples to the laboratory that are equally reliable and consistent. Field documentation forms and guidance are presented in Appendix A of this SOP. Diagrams of sampling apparatus are presented in Appendix B of this SOP.

2 PROCEDURE SUMMARY

- 2.1 Fluid level measurements will be collected as closely in time as feasible. A complete round of fluid level measurements will be completed prior to sampling any monitoring wells.
- 2.2 Monitoring well sampling is designed to obtain depth discrete, non-purge samples that are representative of the formation water at the monitoring well location.
- 2.3 Measurements of field water quality parameters (temperature, pH, specific conductivity and dissolved oxygen [DO]) will be made and recorded during sample collecting activities.
- 2.4 Sample containers will be filled in a predetermined order [e.g., volatile organic analysis (VOA) vials first] to ensure that reliable and consistent samples are collected.
- 2.5 An Arizona Department of Health Services (ADHS)-licensed laboratory will be used to analyze collected groundwater samples, equipment blanks and duplicate QA/QC samples.

3 DEFINITIONS

- 3.1 Water Sample Collection Field Sheet (SCFS) is used to record appropriate information about samples collected from the site (e.g., date, time, location, sample depth, sample number, and requested laboratory analyses).
- 3.2 Groundwater Monitoring/Gauging Field Measurements Sheet is used to record fluid levels measured in the field and observations concerning monitoring well conditions and integrity of the wellhead.
- 3.3 Chain-of-Custody – The Chain-of-Custody (COC) is used to record pertinent (sample identification, date, analyses, etc.) information and accompanies the samples from the sample collection point location through analyses. The COC documents transfer of custody between field personnel, the transfer between field personnel and the shipper and finally transfer from the shipper to the laboratory. The COC also serves as a check for the laboratory to ensure sample integrity and identifies the analytical parameters selected for the environmental samples.

4 HEALTH AND SAFETY WARNINGS

- 4.1 Material Safety Data Sheets (MSDS) will be reviewed prior to handling sample preservations in the field. When possible, sample containers with preservatives added should be obtained from the analytical laboratory. Health and safety warnings should be heeded for these reagents.
- 4.2 Procedures described in the project-specific health and safety plan (HASP) must be followed at all times.
- 4.3 Use a photo ionization detector (PID) or flame ionization detector (FID) and respiratory protection as specified in the HASP.

5 CAUTIONS

- 5.1 Care should be taken to avoid cross contamination of sampling locations. Previous sampling results should be used as a guide to sample from the least contaminated wells (first in the sampling order) to the most contaminated wells (last in the sampling order).
- 5.2 Care should be taken to avoid contamination of sample containers from organic fumes in the laboratory, exhaust, or other organic fumes in the field.
- 5.3 Sample containers should be stored in an area free of organic fumes and dust, and these containers should not be opened in the presence of exhaust, other fumes, or dust in the field.
- 5.4 Vials, bottles and lids for collection of samples should be certified precleaned containers. The containers should remain capped until opened to receive samples.
- 5.5 Field QA/QC samples should be prepared in the same manner as field samples.

6 EQUIPMENT AND MATERIALS REQUIRED FOR PROCEDURE

The following equipment might be used during fluid level monitoring well sampling activities:

- Personal protective equipment (PPE) as proscribed in the HASP.
- Well keys.
- Water level indicator with 0.01-foot increments.
- Assorted tools (knife, screwdriver, etc.).
- Depth discrete sampling device.
- Thermometer, pH meter (with automatic temperature compensation) and conductivity meter or meter containing a combination of these three.
- DO meter.
- Plastic squeeze bottle filled with HPLC or organic-free water.
- Polyethylene or glass container (for field parameter measurements).
- Paper towels or Kimwipes™.
- Calculator.
- Field notebook, field sheets and COC forms.
- Waterproof and permanent marker.
- Plastic sheeting for placement around the well or on working surfaces (e.g., pick-up truck tailgate).
- Sample containers and labels. Sample containers with preservatives added will be obtained from the analytical laboratory. Several extra sample containers will be obtained in case of breakage or other problems.
- Coolers and ice. (Note: Blue ice will not be used)
- Zip-lock® type bags.
- Bubble wrap or similar packing material for sample containers.

7. INSTRUMENT OR METHOD CALIBRATION

- 7.1 Before going into the field, sampling personnel shall verify that field instruments are operating properly. The pH and specific conductivity meters require calibration prior to use every day. Calibration times and readings will be recorded in the field notebook by the field sampling personnel. Specific instructions for calibrating the instruments and acceptable levels of allowed variation, (e.g., ± 0.1 ph units) are given in the manufacturer's manual.
- 7.2 Field health and safety monitoring equipment, including PIDs, FIDs or other equipment should be calibrated according to the manufacturer's recommendations. Calibration times and readings will be recorded in the field notebook by the field sampling personnel.

8 FIELD PROCEDURES FOR FLUID LEVEL MONITORING AND GROUNDWATER SAMPLE COLLECTION

Before any fluid level monitoring or sampling begins, all well probes and other sampling equipment will be decontaminated following the procedures specified in Section 9 of this SOP.

- 8.1 Static fluid level measurements are made using a calibrated fluid level indicator (sounder). Measurements are obtained by measuring the distance from the surveyors mark on the well casing (or, if the surveyors mark is not evident, the north side of the well casing) to the static fluid level of the well. Three measurements will be made and recorded in the field notebook. The average of the three measurements will be recorded on the Groundwater Monitoring/Gauging Field Measurements Form. Measurements will be recorded to the nearest 0.01-foot.
- 8.2 For wells that are not equipped with pumps, depth discrete groundwater samples will be collected using a Solinst Model 425 Discrete Interval Sampler or equivalent (Appendix B). The sampling device will be pressurized in accordance with the manufacturers operating instructions (Appendix B) and be lowered to the predetermined sampling depth by attaching the sampling device to the wireline cable of a well development rig. After reaching the desired depth, the sample device will be activated in accordance with the manufacturers operating instructions.
 - 8.2.1 VOC sample vials should be completely filled from the sample release device at the bottom of the sampler (Appendix B) so the water forms a convex meniscus at the top then capped so that no air space exists in the vial. Turn the vial over and tap it to check for bubbles, which indicate air space. If air bubbles are observed in the sample vial, add more sample and repeat the procedure until no air bubbles appear.
- 8.3 For wells that are equipped with pumps, samples will be collected from sampling ports. Care will be taken to minimize disturbance of the sample at the sampling points by opening the port slowly.
 - 8.3.1 VOC sample vials should be completely filled from the sampling port so the water forms a convex meniscus at the top then capped so that no air space exists in the vial. Turn the vial over and tap it to check for bubbles, which indicate air space. If air bubbles are observed in the sample vial, add more sample and repeat the procedure until no air bubbles appear.

9 EQUIPMENT DECONTAMINATION

All sampling equipment including fluid level indicators will be decontaminated between sampling locations. Sampling equipment decontamination will be completed using the following procedures:

Step 1 Wash with an Alconox™ or equivalent and tap water solution.

Step 2 Rinse with tap water.

Step 3 Rinse with distilled water.

Step 4 Allow to air dry.

10 PERSONNEL DECONTAMINATION

Personnel decontamination will be conducted in accordance with the HASP.

11 SITE RESTORATION

All disposable sampling equipment such as rope, plastic sheeting, and plastic tubing will be removed from the site and containerized for proper disposal.

APPENDIX A
FIELD DOCUMENTATION FORMS

GROUNDWATER SAMPLE COLLECTION

GENERAL INFORMATION

SITE NAME Broadway-Pantano WQARF Site PROJECT NO. 185902046
 WELL NO. _____ PERSONNEL _____
 DATE COLLECTED _____ WEATHER _____
 SAMPLE METHOD Depth Discrete/Well Head

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
40-mL vials (three per sample)	HCL, ice	Volatile Organic Compounds (EPA 8260B -all samples)
250-mL bottle	ice	Nitrate (SDWA Method 300.0)
500-mL bottle	nitric acid	Metals

FIELD EQUIPMENT AND CALIBRATION

Instrument	Model	Calibration
Water Level Probe	_____	Checked against calibrated length
Water Quality Meter	_____	
Dissolved Oxygen Meter	_____	
Discrete Interval Sampler	_____	

SAMPLE INFORMATION AND FIELD MEASUREMENTS

Depth to Fluid: _____

Sample ID	Depth (bgs)	Time	D.O. (mg/L)	pH	Conductivity (mS/cm)	Temperature (°F / °C)

Note – sample ID format example: WR177A-5 (-5 = depth below water); duplicates always end in -600 i.e. WR177A-600

GENERAL COMMENTS

Well Diameter = _____
 Screen Interval = _____
 Notes: _____

Depth to Water Measurements - Broadway Pantano WQARF Site

Date: _____
 Stantec Personnel: _____
 Subcontractors: _____
 Time Arrived: _____
 Time Departed: _____
 Equipment Used: _____

Well ID	Time	Measuring Point Elevation (feet amsl)	Measured DTW	GW Elevation	Transducer Elevation Reading	Well Pumping	Time Well Locked	Photo Taken	Well Sampled	Comments	Access Notes
BP-1		2535.40	-	=							
BP-2		2540.45	-	=							
BP-3		2533.48	-	=							
BP-4		2547.26	-	=							
BP-5		2570.31	-	=							
BP-7		2579.34	-	=							
BP-8		2602.64	-	=							13
BP-9		2581.61	-	=							
BP-10		2594.77	-	=							
BP-11		2606.78	-	=							
BP-15		2595.45	-	=							
BP-16		2602.53	-	=							6
BP-19		2545.43	-	=							
BP-20		2532.21	-	=							
BP-21		2533.69	-	=							17
BP-22		2605.69	-	=							
BP-23		2599.90	-	=							
BP-24A		2567.74	-	=							15
BP-24B		2568.01	-	=							15
BP-24C		2568.28	-	=							15
BP-25		2550.16	-	=							
C-020B		2562.70	-	=							14
C-022A		2585.26	-	=							14
C-026A		2540.15	-	=							11,14
C-026B	NA	2539.24	-	=							2,8,14

Depth to Water Measurements - Broadway Pantano WQARF Site

Well ID	Time	Measuring Point Elevation (feet amsl)	Measured DTW	GW Elevation	Transducer Elevation Reading	Well Pumping	Time Well Locked	Photo Taken	Well Sampled	Comments	Access Notes
C-056A		2532.30	-	=							14
C-058A		2542.44	-	=							10,14
C-114A	NA	2550.96	-	=							1,7,14
D-021A		2578.72	-	=							14,14
D-022A		2578.82	-	=							14
D-039A		2618.06	-	=							14
D-040A		2637.04	-	=							14
D-041A		NM	-	=							14
R-068A		2577.89	-	=							
R-069B		2561.56	-	=							
R-090A	NA	2552.74									2,8
R-091A	NA	2554.17									2,8
R-092A	NA	2561.96									2,8
R-124A		2620.03	-	=							
R-125A		2612.58	-	=							
SE-001		2544.09	-	=							4
SJ-001		2583.73	-	=							16
SJ-002		2589.16	-	=							
WR-155A		2538.92	-	=							
WR-177A		2586.85	-	=							
WR-178A		2560.59	-	=							
WR-179A		2597.91	-	=							
WR-180A		2560.13	-	=							
WR-181A		2548.82	-	=							13
WR-186A		2545.49	-	=							
WR-207B		2577.25	-	=							
WR-273A		2555.89	-	=							
WR-274A		2568.54	-	=							
WR-275A		2574.58	-	=							

Depth to Water Measurements - Broadway Pantano WQARF Site

Well ID	Time	Measuring Point Elevation (feet amsl)	Measured DTW			GW Elevation	Transducer Elevation Reading	Well Pumping	Time Well Locked	Photo Taken	Well Sampled	Comments	Access Notes
WR-352A		2558.62	-			=							
WR-353A		2553.10	-			=							
WR-354A		2564.84	-			=							
WR-358A		2549.91	-			=							18
WR-367A		2600.76	-			=							
WR-435A		2619.53	-			=							
WR-458A		2542.49	-			=							
WR-459A		2536.43	-			=							
411-P St. Joe's Pump ON		2565.42	-			=							3.9
411-P St. Joe's Pump OFF		2565.42	-			=							
416-P Simoniz	NA			NA	NA	NA							5

Access Notes:

- 1 Tucson Water to gauge depth to water. Contact Chuck Faas one day prior at 520 791-5080 Ext. 1405.
- 2 URS to provide depth to water data. Send e-mail to Jerry Fordham at URS on day following event to request data.
- 3 Contact Raoul Pizanna at St. Joe's Hospital to arrange time for on-site visit (520 873-3710); check water level twice-pumping and non-pumping
- 4 Stantec personnel must sign in at School Administrative Office prior to visiting on-site well. Or sample well at end of day.
- 5 Well inaccessible for gauging. Well to be sampled quarterly.
- 6 Well to be gauged only during site-wide and WCS sampling events
- 7 Indicate if well is pumping. If yes, contact Chuck Faas to determine rate (520 791-5080 Ext. 1405)
- 8 Indicate if well is extracting/injecting. Jerry Ford will provide pumping rate per note 2.
- 9 Indicate if well is pumping. If yes, request the pumping rate from Raoul Pizanna at time of visit.
- 10 Indicate if well C-058B is pumping.
- 11 Note if well/well pair/adjacent well was pumping and pump rate at time of gauging.
- 12 Inform K-Mart [lessee] store manager (Jim) prior to sampling at 520-546-6565.
- 13 Contact John Paul (landowner) prior to accessing this well at 520-290-9800 between 07:00-17:00 hours.
- 14 Obtain key to compound from Gretchen Wagenseller at ADEQ prior to gauging
- 15 Gauge all BP-24 wells even if sampling only one
- 16 Gauge and sample well first thing in the morning, cars will park on top of well
- 17 Gauge and sample well preferably in middle of day to a void homeowner
- 18 Access is through gate on landfill. Stantec combination lock interlocked with Tucson Electric Power lock.

APPENDIX B
SAMPLING APPARATUS DIAGRAM
AND OPERATING INSTRUCTION

Solinst® Discrete Interval Sampler Operating Instructions

Model 425

Operating Principles

The Discrete Interval Sampler allows samples to be taken from distinct levels within a well. The sampler is pressurized at the surface to prevent water from entering the device as it is being lowered to the desired sampling depth. The pressure is then released allowing the Sampler and tubing to fill under hydrostatic pressure. The Sampler is repressurized to maintain chemical stability of the sample as the Discrete Interval Sampler is retrieved.

At the surface, the sample is removed using the Sample Release Device, or in the case of the transportable model, sealed for transport straight to a laboratory.

Assembly

1. Take the Sample Release Device End Piece and lubricate the o-ring.
2. Lubricate the o-ring on the SRD Stem and slip the SRD Stem through the SRD End Piece from the threaded end until the pin reaches the threads.
3. Thread the SRD into the bottom of the Lower End Plug until it is finger tight.
4. Lubricate the Lower End Plug o-ring.
5. Lubricate the o-ring on the Valve Body and thread into the top of the Lower End Plug.
6. Lubricate the o-ring on the Valve Poppet and drop into the Valve Body, narrow end in first.
7. Lubricate the o-ring for the Central Rod Connector and thread into the Valve Body.
8. Take the Central Rod and thread approximately 4 rotations to just get it started at this point.
9. Slide the Sampler Body over the Central Rod until completely butted up against the Lower End Plug.
10. Lubricate the o-ring on the Upper End Plug.
11. Lubricate the o-ring on the Central Rod Connector and thread into the Upper End Plug until finger tight.
12. Line up the Central Rod Connector on the Upper End Plug with the threaded portion of the Central Rod in the Sampler Body and begin to thread together.
13. Tighten the Top and Bottom End Plugs until the Sampler Body is completely butted up against both of these to form a good seal.
14. Unscrew the Compression Fitting and carefully remove so as to not lose the Ferrules inside the fitting.
15. Place the Lowering Bracket over the threaded portion of the Compression Fitting (Optional).
16. Take the nut of the Compression fitting and slide onto the tubing. Slide the Hat shaped Ferrule over the tubing and then the Cone shaped Ferrule until you have about 2 inches of tubing exposed.
17. Butt the tubing into the Compression Fitting.
18. Slide the Ferrules down until they are butted together at the top of the Compression Fitting.
19. Slide the Nut of the Compression fitting down the tube and thread onto the Upper End Plug until finger tight. Then take a 9/16" wrench and tighten the Compression fitting another 1 1/4 turns.

Sampling with the Discrete Interval Sampler

1. Before using the Discrete Interval Sampler, there are two important pieces of information needed.
 - i) Desired Sampling Depth
 - ii) Static Water Level
2. With the tubing connected to the Discrete Interval Sampler, and the air pump assembled, connect the air pump to the Pressure Inlet.
3. Turn the Pressure/Vent Valve to Pressure.
4. At this point you must make a calculation to ensure that you are operating at the proper pressure using one of the following formulae.

Setting the Operating Pressure

Feet	Metres
sampler depth below grade(ft) - static water level below grade (ft) $\times 0.43 + 10\text{psi}$	sampler depth below grade(m) - static water level (m) $\times 9.8 + 70\text{kPa}$

Example:

Sampling Depth is 100 ft. - Static Water Level at 30 ft. $\times 0.43 + 10 \text{ psi} = 40 \text{ psi}$

Therefore the Discrete Interval Sampler should be pressurized to 40 psi for proper operation.

5. Using the air pump, pressurize the Discrete Interval Sampler to the proper pressure.
6. Disconnect the air pump from the reel before lowering into the well.
7. Lower the Discrete Interval Sampler down the well to the desired sampling depth. If you have not marked your tubing, you may want to attach a measuring tape to the Discrete Interval Sampler Body to measure to the proper sampling depth.
8. Once the sampler is at the desired sampling depth, turn the Pressure/Vent Valve to Vent. Wait for 1-3 minutes to allow the Discrete Interval Sampler and tubing to fill to static water level completely.
9. Turn the Pressure/Vent Valve to Pressure.
10. Connect the air pump to the Pressure Inlet on the reel and repressurize the system using the same pressure as before.
11. Once pressurized, disconnect the air pump and bring sampler to the surface.
12. When the sampler is at the surface you are ready to retrieve your sample from the Discrete Interval Sampler. Turn the Pressure/Vent Valve to Vent.
13. Hold the Discrete Interval Sampler over your sample bottle and press the SRD Stem up into the SRD End Piece until sample begins to flow from the sampler. The flow rate can be regulated by simply adjusting the amount of the Stem inserted into the End Piece.

Note: If no sample is coming out of the Discrete Interval Sampler, loosen the Compression Fitting to allow venting and then take your sample.