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Technical Memorandum

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From William Neese

Date February 5, 2016

Subject Summary of Operational Data for Broadway-Pantano Western Containment System for 2015 (January 1, 2015 to December 31, 2015)

The purpose of this memo is to provide a summary of flow and analytical data collected at the Broadway-Pantano Western Groundwater Containment System for the time period January 1, 2015 to December 31, 2015. This system consists of two groundwater extraction wells (C-026B & R-092A) and two groundwater injection wells (R-090A & R-091A). Summary reports are submitted on an annual basis as directed by the City of Tucson and the Arizona Department of Environmental Quality (ADEQ).

The system was shut down on October 12, 2012 and converted to a one day a month operational maintenance schedule. At the request of the City of Tucson, the frequency of groundwater sampling was reduced to a semi-annual basis for the July 2013 through December 2013 time period for both extraction wells (C-026A & R-092A) and the injection well (R-090A) via Passive Diffusion Bags (PDB), at four discreet depths. These samples were collected and analyzed for volatile organic compounds only. This change in frequency resulted in one sampling event for the second half of 2013. Beginning in 2014, sampling continued on a quarterly basis at discreet depths via PDBs. According to the City of Tucson, due to suspect results, the sampling via PDB was reduced to one depth beginning in March 2015 for the injection wells. For the extraction wells, samples were collected from the spigot either directly before or after exercising the system.

A maintenance log for 2015 is attached as Table 1. The granular activated carbon (GAC) vessel media was last exchanged in vessel 1B on January 31, 2013 and in vessel 2B on February 28, 2013. It is our understanding that the system will be shut down for an extended period of time. Based on this, the nitrogen canisters were removed on January 7, 2016. The table below summarizes the day long operational runs for the treatment system. There were no abnormal shut downs during the single day runs in 2015.

System On	C-026B (GPM)	R-092A (GPM)	R-090A (GPM)	R-091A (GPM)
January 29 & 30, 2015	0	379	188	200
March 24 & 26, 2015	0	773	300	487
April 29 & 30, 2015	368	0	208	213
May 20 & 21, 2015	0	418	0	410
June 9 & 10, 2015	395	0	201	202
October 8 & 9, 2015	0	474	232	239
November 10 & 11, 2015	372	0	213	161
December 8 & 9, 2015	0	463	270	193

Note that the GPM (gallons per minute) is taken from the SCADA readings for accuracy. Reported value is the average of the readings taken.

The results of historical system sampling are summarized in the attached Table 2. The laboratory analytical reports for each of the sampling events are attached. Levels of trichloroethene (TCE) were non-detect in wells C-026B and R-092A. Tetrachloroethene (PCE) was non-detect in well C-026B. PCE was detected in R-092A during all sampling events beginning on March 26, 2015. PCE detections ranged from 1.3 to 1.7 micrograms per liter (µg/L). Nitrates were not sampled for in 2015. At the request of the City of Tucson, the January 5, 2016 sampling data was added to Table 2; however, these results were not included in the evaluation of the 2015 data.

Figure 1 is a historical graph showing the cumulative volume of water treated in each GAC system before breakthrough of PCE along with a plot of PCE concentration measured in the effluent of the lead GAC vessel for each system. During 2015, the system was only run eight times, at approximately 24-hour cycles. The total volume of flow was insignificant compared to the historical flow totals. For this reason the volume of flow on Figure 1 was not updated. The GAC system was not sampled during 2015 because of the limited run time.

The following table provides a summary of the total volume of water extracted and injected into the wells, used for irrigation, and discharged to the Alamo Wash/onsite depression during injection well rehabilitation, backflushing, and GAC vessel back washing since the project began:

LOCATION	Year 2015 (gallons)	Project Total (gallons)
Extraction C-026B:	1,762,000	1,446,941,000
Extraction R-092A:	4,669,000	1,738,551,000
Total Extracted	**6,431,000**	**3,185,492,000**
Injection R-090A:	2,702,000	1,405,581,000
Injection R-091A:	3,722,000	1,781,748,000

LOCATION	Year 2015 (gallons)	Project Total (gallons)
Total Injected	**6,424,000**	**3,187,329,000**
Estimated Irrigation at Injection Site:	--	251,620
Pumped from Wells during Rehab, Backflushing, or GAC Backwash	--	5,510,480

A flow summary of each quarterly and annual flow for each well for the length of the project is attached as Table 3. Total volumes from the extraction and injection wells were calculated using the flow and volume information generated in the system's SCADA program. There was no flow from irrigation, well rehab, backflushing or GAC backwashing during 2015. There was a 7,000 gallon difference in the amount of water that was extracted and injected during 2015. This is equivalent to about 0.11% of the total extracted flow, which is within the +/- 2.0% combined accuracy of the four flow meters (each of the individual flow meters has an accuracy of +/- 0.5%).

Hydrographs showing the flow rate in gallons per minute for extraction wells R-092A and C-026B, injection wells R-090A and R-091A, and total combined flow of R-092A and C-026B are provided in the attached Figures 2 through 6.

The following table provides an estimate of the PCE in pounds removed from the groundwater during 2015, and since the project began:

	Year 2015 (pounds)	Project Total (pounds)
Pounds of PCE Removed	0.07	55.59

Values provided are rounded to the nearest hundredth

The attached Table 4, Total PCE Removal Calculation Summary, provides a detailed breakdown of the estimates of the PCE removed by the system for each quarter since the start of the project.

Figure 7 presents a chart showing the specific capacity for injection wells R-090A and R-091A for the reporting period. The specific capacity for R-090A and R-091A on January 30, 2015, was approximately 2.19 gallons per minute/foot (gpm/ft) and 5.63 gpm/ft, respectively. Specific capacities for R-090A and R-091A decreased on June 10, 2015 to approximately 2.04 gpm/ft and 6.10 gpm/ft, respectively. Specific capacities on December 09, 2015 were recorded at 2.08 gpm/ft and 6.19 gpm/ft in R-090A and R-091A, respectively.

Figure 8 presents a chart showing the specific capacities of both injection wells from the start of the system until the present. The backflushing events are labeled on the chart. In general, specific capacities for the injection wells decline over time and show improvements following backflushing or rehabilitation events. However, all wells slowly degrade and the data from the wells show reducing efficiency of backflushing events over time. Eventually a well rehabilitation is required to provide a greater restoration of well efficiency over backflushing. Because the system will be shut down for an extended period of time, well rehabilitation should be completed

prior to a full system start-up. A list of action items provided by Verdad for the long term shutdown of the Western Containment System is attached. This list of recommendations has not been reviewed by URS and has been provided at the request of the City of Tucson.

Water level (i.e. depths to water) measurements obtained in 2015 are summarized on the following table.

DATE	R-090A Water Level (ft)
11/19/2015	310.62
12/8/2015	310.85

ft – feet

A chart showing the collected SCADA data water levels in injection wells R-090A and R-091A is attached as Figure 9.

A chart showing the measured water levels in extraction wells C-026B and R-092A is attached as Figure 10. Additionally, Figure 10 demonstrates a consistency in the water levels in these wells over the length of the year and also indicates that they respond quickly following start-ups and shutdowns of the system.

Figures 11, 12, 13, and 14 present charts showing, respectively, the water level in both injection wells, the flow rates of both injection wells, the water level in both extraction wells, and the flow rates of both extraction wells, from the start of the system until the present. As with the previous report, and due to the increasing operational water level of the injections wells, URS recommends a backflushing of the injections wells if and when the system is restarted or sooner if funding is available.

Table 5 provides a summary of the electrical usage and cost. A summary of each of the monthly bills is provided along with a subtotal for each quarter. A total electrical usage and cost is provided beginning from August 15, 2003 to the end of 2015.

ATTACHMENTS

TABLE 1. 2015 ANNUAL SYSTEM MAINTENANCE
TABLE 2. TREATMENT SYSTEM PERFORMANCE TESTING ANALYTICAL DATA
TABLE 3. TOTAL CUMULATIVE FLOW CALCULATION SUMMARY
TABLE 4. TOTAL PCE REMOVAL CALCULATION SUMMARY
TABLE 5. ELECTRICAL USAGE AND COST SUMMARY
FIGURE 1. BROADWAY-PANTANO PCE VS TOTAL VOLUME TREATED IN GAC SYSTEMS PRIOR TO PCE BREAKTHROUGH
FIGURE 2. R-092A HYDROGRAPH – January 1, 2015 to December 31, 2015
FIGURE 3. C-026B HYDROGRAPH – January 1, 2015 to December 31, 2015
FIGURE 4. R-090A HYDROGRAPH – January 1, 2015 to December 31, 2015
FIGURE 5. R-091A HYDROGRAPH – January 1, 2015 to December 31, 2015
FIGURE 6. R-092A & C-026B HYDROGRAPH – January 1, 2015 to December 31, 2015
FIGURE 7. SPECIFIC CAPACITY CALCULATION – January 1, 2015to December 31, 2015 (R-090A & R-091A)
FIGURE 8. SPECIFIC CAPACITY -- Startup through December 31, 2015
FIGURE 9. INJECTION WELL WATER LEVEL – January 1, 2015 to December 31, 2015 (R-090A & R-091A)

TABLE 1
2015ANNUAL SYSTEM MAINTENANCE
BROADWAY PANTANO WESTERN CONTAINMENT SYSTEM

1/29/2015 0800	Verdad onsite, turn on r-92a, take meter readings, r92-a running at 400-420gpm, BT
1/30/2015 0800	Verdad onsite, turn off r-92a, take meter readings, MT
3/24/2015 0800	Verdad onsite, Meet w/Molly Collins and other city workers for pump test, run both c-26 and r-92a for testing and samples, turn off c-26 and run r-92a @ 800gpm, MT
3/26/2015 0800	Verdad onsite, turn off r-92a, take meter readings, MT
4/29/2015 0800	Verdad onsite, turn on c-26, take meter readings, c-26 running at 400-420gpm, MT
4/30/2015 0800	Verdad onsite, turn off c-26, take meter readings, MT
5/20/2015 0900	Verdad onsite, turn on r-92a, take sample, take meter readings, r92-a running at 400-420gpm, MT
5/21/2015 0900	Verdad onsite, take sample, turn off r-92a, take meter readings, MT
6/09/2015 0800	Verdad ondite, turn on c-26, take meter readings, running at 400-425GMP
6/10/2015 0800	Verdad onsite, turn off c-26 VFD, meter readings, MT
10/8/2015 1000	Verdad onsite, do meter readings, start VFD for r-92A, start system, check fir any leaks and air-vac's, take VOC sample from R-92a and meet currier, R-92a running @ 400-450gpm, MT
10/9/2015 1000	Verdad onsite, do meter readings, shut off r-92a, turn of VFD, MT
11/10/2015 0900	Verdad onsite, meter readings, turn on VFD for c-26a, meet with Lori and Arturo for run thru on starting and stopping system, take sample for c-26a, c-26a running @ 350-380gpm, MT
11/11/2015 0900	Verdad onsite, turm c-26a off, take meter readings, MT
12/8/2015 1100	Verdad onsite,take PDB sample r20-a, take, turn on r-92a, take sample r92-a, take meter readings, r92-a running at 400-420gpm, MT
12/9/2015 1100	Verdad onsite, turn off r-92a, take meter readings, MT

TABLE 2
TREATMENT SYSTEM PERFORMANCE TESTING ANALYTICAL DATA
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

	EXTRACTION WELLS								GAC SYSTEM L1												GAC SYSTEM L2											
	C-026B (SP-1A or SP-1B)				R-092A (SP-2)				Influent to L1-A (SP-3)				Effluent from L1-A (SP-4)				Effluent from L1-B (SP-6)				Influent to L2-A (SP-7)				Effluent from L2-A (SP-8)				Effluent from L2-B (SP-10)			
	VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)			
Sample Location & Date	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)
3/31/2003	1.6	ND	0.9	--	8.7	1.1	2.1	--	6.1	0.8	1.8	--	ND	ND	ND	--	ND	ND	ND	--	6.2	0.8	1.8	--	ND	ND	ND	--	ND	ND	ND	--
5/20/2003	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	1.4	--	--	--	--	--	--	--	--	--	ND	ND	1.4	--	--	--	--	1.5
6/12/2003	2.7	ND	1.1	--	6.5	0.7	1.2	--	--	--	--	--	ND	ND	1.2	--	ND	ND	0.8	--	--	--	--	--	ND	ND	1.2	--	ND	ND	0.8	--
7/18/2003	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	1.3	--	--	--	--	--	--	--	--	--	ND	ND	1.3	--	--	--	--	--
8/15/2003	2.9	ND	1.4	--	5.3	0.5	1.1	--	--	--	--	--	ND	ND	1.6	--	--	--	--	--	--	--	--	--	ND	ND	1.7	--	--	--	--	--
9/17/2003	2.8	ND	1.4	--	5.6	0.6	1.5	--	--	--	--	--	ND	ND	1.9	--	ND	ND	2.1	--	--	--	--	--	ND	ND	1.8	--	ND	ND	2.1	--
10/17/2003	3.1	ND	1.4	--	4.9	0.5	1.3	--	--	--	--	--	ND	ND	1.6	--	--	--	--	--	--	--	--	--	ND	ND	1.7	--	--	--	--	--
11/13/2003	3.6	ND	2	--	5.6	0.6	1.5	--	--	--	--	--	ND	ND	1.9	--	--	--	--	--	--	--	--	--	ND	ND	2.1	--	--	--	--	--
1/15/2004	2.3	ND	1.6	--	5.2	0.5	1.8	--	--	--	--	--	ND	ND	2.5	--	--	--	--	--	--	--	--	--	ND	ND	2.6	--	--	--	--	--
2/16/2004	3.5	ND	1.4	--	5.4	0.5	1.1	--	--	--	--	--	ND	ND	1.4	--	--	--	--	--	--	--	--	--	ND	ND	1.4	--	--	--	--	--
3/16/2004	3.3	ND	1.9	--	4.7	0.5	1.4	--	--	--	--	--	ND	ND	1.9	--	ND	ND	2	--	--	--	--	--	ND	ND	2	--	ND	ND	2	--
4/16/2004	3.8	ND	2.1	0.88	4.9	0.5	1.6	1.7	--	--	--	--	ND	ND	1.8	--	--	--	--	--	--	--	--	--	ND	ND	2	--	--	--	--	1.4
5/13/2004	3.8	ND	2.3	0.82	4.5	0.5	1.6	1.5	--	--	--	--	ND	ND	2.2	--	--	--	--	--	--	--	--	--	ND	ND	2.1	--	--	--	--	1.1
6/17/2004	3.2	ND	2.2	0.59	4	ND	1.5	1.4	--	--	--	--	ND	ND	2.2	--	ND	ND	1.7	--	--	--	--	--	ND	ND	2.2	--	ND	ND	1.8	1.4
7/20/2004	4.5	ND	1.9	0.85	4.2	ND	1.2	1.6	--	--	--	--	ND	ND	1.8	--	--	--	--	--	--	--	--	--	ND	ND	1.9	--	--	--	--	1.2
8/12/2004	4.3	ND	2.3	0.88	4.3	ND	1.2	1.6	--	--	--	--	ND	ND	1.8	--	--	--	--	--	--	--	--	--	ND	ND	1.8	--	--	--	--	1.2
9/21/2004	4.9	ND	2.2	0.97	4.2	ND	1	1.7	--	--	--	--	ND	ND	1.7	--	ND	ND	1.7	--	--	--	--	--	ND	ND	1.8	--	ND	ND	1.8	1.3
10/20/2004	4.8	ND	3.1	0.98	3.9	ND	1.3	1.6	--	--	--	--	ND	ND	2.3	--	--	--	--	--	--	--	--	--	ND	ND	2.4	--	--	--	--	1.3
[a] 11/24/2004	3.3	ND	ND	1.1	2.4	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.3
[a] 12/16/2004	3.6	ND	2.2	1.1	2.5	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.3
[a] 1/11/2005	5.6	ND	2	1.1	3.9	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 2/16/2005	4.2	ND	2.3	1.1	2.9	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.3
[a] 3/15/2005	4.1	ND	2.5	1	3	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	0.51	ND	2	--	ND	ND	ND	1.3
[a] 4/11/2005	4.4	ND	2.3	1.6	2.7	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	0.93	ND	ND	--	--	--	--	1.4
[a] 5/17/2005	4.4	ND	2.8	1.3	3	ND	ND	1.8	--	--	--	--	0.62	ND	2.1	--	--	--	--	--	--	--	--	--	3.4	ND	ND	--	--	--	--	1.5
[a] 6/16/2005	4.7	ND	ND	1.2	3.2	ND	ND	1.6	--	--	--	--	1.3	ND	ND	--	ND	ND	ND	--	--	--	--	--	4.1	0.52	ND	--	ND	ND	ND	1.4
[a] 7/19/2005	3.9	ND	2.4	1.1	2.9	ND	ND	1.7	--	--	--	--	1.6	ND	ND	--	ND	ND	ND	--	--	--	--	--	4.1	0.54	ND	--	ND	ND	ND	1.3
[a] 8/24/2005	3.8	ND	3	1.3	2.9	ND	ND	1.6	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.4
[a] 9/22/2005	4.6	ND	4.3	1.1	4.1	ND	2.8	1.1	--	--	--	--	4.7	0.6	3.6	--	ND	ND	3.4	--	--	--	--	--	6.2	0.63	3.5	--	ND	ND	3.7	1.4
[a] 10/18/2005	3.2	ND	2.9	1.1	2.6	ND	ND	1.6	--	--	--	--	--	--	--	--	ND	ND	2.3	--	--	--	--	--	--	--	--	--	ND	ND	2.3	1.3
[a] 11/15/2005	2.4	ND	ND	1.2	2.5	ND	ND	1.7	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.4
[a] 12/15/2005	2.9	ND	1.5	1.2	2.5	ND	ND	1.6	--	--	--	--	ND	ND	ND	--	ND	ND	1.3	--	--	--	--	--	ND	ND	ND	--	ND	ND	1.3	1.4
[a] 1/18/2006	2.6	ND	ND	1.1	2.4	ND	ND	1.6	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.3
[a] 2/16/2006	2.1	ND	ND	1.1	2	ND	ND	1.6	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.4
[a] 3/15/2006	2.4	ND	2.7	1.1	2.5	ND	2.1	1.6	--	--	--	--	ND	ND	ND	--	ND	ND	2.4	--	--	--	--	--	ND	ND	ND	--	ND	ND	2.5	1.4
[a] 4/19/2006	2.4	ND	ND	1.1	2.6	ND	ND	1.6	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.3
[a] 5/17/2006	2.1	ND	ND	1.2	2.2	ND	ND	1.7	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	1.4	ND	ND	ND	--
[a] 6/16/2006	1.9	ND	ND	1.2	2.1	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	0.65	ND	ND	--	--	--	--	--	ND	ND	ND	1.4	0.76	ND	ND	--
[a] 7/19/2006	1.7	ND	ND	1.1	1.9	ND	ND	1.6	--	--	--	--	--	--	--	--	0.89	ND	ND	--	--	--	--	--	--	--	--	1.4	1.1	ND	ND	--
[a] 8/22/2006	1.6	ND	ND	1.2	1.9	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	1.2	ND	ND	--	--	--	--	--	ND	ND	ND	1.5	1.4	ND	ND	--
[a] 9/14/2006	1.6	ND	ND	1.2	1.9	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	1.3	ND	ND	--	--	--	--	--	ND	ND	ND	1.5	2.1	ND	ND	--
[a] 5/3/2007	3.1	ND	ND	0.83	2.6	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	0.57	ND	ND	--	--	--	--	--	ND	ND	ND	1.3	0.92	ND	ND	--
[a] 6/20/2007	1.9	ND	ND	1.1	1.8	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	1.3	--	--	--	--
[a] 7/18/2007	1.7	ND	ND	1.1	1.8	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.4	--	--	--	--
[a] 8/16/2007	1.4	ND	ND	1.1	1.7	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.4	--	--	--	--
[a] 9/12/2007	--	--	--	--	1.6	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.7
[a] [b] 9/27/2007 Well Start: 15:27 Sample: 15:28	7.1	0.62	3.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
TREATMENT SYSTEM PERFORMANCE TESTING ANALYTICAL DATA
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

	EXTRACTION WELLS								GAC SYSTEM L1												GAC SYSTEM L2							
	C-026B (SP-1A or SP-1B)				R-092A (SP-2)				Influent to L1-A (SP-3)				Effluent from L1-A (SP-4)				Effluent from L1-B (SP-6)				Influent to L2-A (SP-7)				Effluent from L2-A (SP-8)				Effluent from L2-B (SP-10)			
	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)	VOCs (µg/L)			Nitrate (mg/L)
Sample Location & Date	PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12		PCE	TCE	Freon 12	
[a][b] 9/27/2007 Well Start: 15:27 Sample: 15:47	5.3	ND	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[a] 10/12/2007	1.7	ND	ND	1.2	1.6	ND	ND	1.9	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 11/13/2007	1.4	ND	ND	1.1	1.6	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.4
[a] 12/18/2007	1.3	ND	ND	1.2	1.5	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.6
[a] 1/15/2008	1.2	ND	ND	1.2	1.4	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 2/19/2008	1.5	ND	ND	1.2	1.7	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 3/18/2008	1.1	ND	ND	1.2	1.4	ND	ND	1.7	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.5
[a] 4/28/2008	1.1	ND	ND	1.2	1.4	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.6
[a] 5/19/2008	0.94	ND	ND	1.2	1.1	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 6/30/2008	0.93	ND	ND	1.2	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.2
[a] 7/28/2008	1	ND	ND	1.3	1.4	ND	ND	2	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.5
[a] 8/21/2008	1.2	ND	ND	1.2	1.5	ND	ND	1.9	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	1.6
[a] 9/17/2008	1	ND	ND	1.2	1.5	ND	ND	1.8	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.5
[a] 10/17/2008	1.1	ND	ND	1.2	1.4	ND	ND	1.9	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	0.8	ND	ND	--	ND	ND	ND	1.6
[a] 11/19/2008	0.81	ND	ND	1.2	1.1	ND	ND	1.9	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	0.79	ND	ND	--	--	--	--	1.6
[a] 12/16/2008	0.94	ND	ND	1.3	1.3	ND	ND	1.9	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	0.94	ND	ND	--	ND	ND	ND	1.6
[a] 1/22/2009	0.85	ND	ND	1.3	1.2	ND	ND	2	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	1.1	ND	ND	--	--	--	--	1.7
[a] 2/19/2009	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	1.3	ND	ND	--	ND	ND	ND	--
[a] 3/12/2009	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	0.81	ND	ND	--	ND	ND	ND	--
[a] 4/17/2009	0.78	ND	ND	--	1.1	ND	ND	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	0.71	ND	ND	--	ND	ND	ND	1.5
[a] 5/21/2009	--	--	--	--	--	--	--	--	--	--	--	--	0.56	ND	ND	--	--	--	--	--	--	--	--	--	0.76	ND	ND	--	ND	ND	ND	--
[a] 6/18/2009	--	--	--	--	--	--	--	--	--	--	--	--	0.7	ND	ND	--	ND	ND	ND	--	--	--	--	--	0.78	ND	ND	--	ND	ND	ND	1.5
7/31/2009	1.4	ND	ND	--	1.1	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
8/19/2009	--	--	--	--	--	--	--	--	--	--	--	--	0.68	ND	ND	--	ND	ND	ND	--	--	--	--	--	0.59	ND	ND	--	ND	ND	ND	--
9/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	1.5
10/16/2009	--	--	--	--	1.4	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
11/23/2009	0.78[c]	ND[c]	ND[c]	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
12/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.5
1/20/2010	0.59	ND	ND	--	0.91	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
2/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
3/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.5
4/21/2010	0.54	ND	ND	--	0.98	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
5/19/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
6/15/2010	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.5
7/19/2010	--	--	--	--	1.0	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
9/20/2010	0.62	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.58
10/21/2010	0.52	ND	ND	--	0.86	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
11/22/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
12/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.55
1/20/2011	ND	ND	ND	--	0.82	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
2/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
3/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	1.57
4/18/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
5/12/2011	--	--	--	--	0.87	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
[d] 6/3/2011	0.90	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	2.15
[d] 7/15/2011	0.97	ND	ND	--	1.07	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
8/11/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--

TABLE 2
TREATMENT SYSTEM PERFORMANCE TESTING ANALYTICAL DATA
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

	EXTRACTION WELLS								GAC SYSTEM L1												GAC SYSTEM L2											
	C-026B (SP-1A or SP-1B)				R-092A (SP-2)				Influent to L1-A (SP-3)				Effluent from L1-A (SP-4)				Effluent from L1-B (SP-6)				Influent to L2-A (SP-7)				Effluent from L2-A (SP-8)				Effluent from L2-B (SP-10)			
	VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)			
Sample Location & Date	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)
[b] 9/30/2011 Well Start: 10:12 Sample: 10:13	1.87	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
[b] 9/30/2011 Well Start: 10:12 Sample:10:25	3.53	ND	2.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[b] 9/30/2011 Well Start: 10:12 Sample: 10:40	2.64	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/25/2011	--	--	--	--	0.96	ND	ND	1.79	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	1.79	ND	ND	ND	--
11/22/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
12/20/2011	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--
[b] 1/6/2012 Well Start: 10:24 Sample: 10:25	1.04	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[b] 1/6/2012 Well Start: 10:24 Sample: 10:29	2.95	ND	3.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[b] 1/6/2012 Well Start: 10:24 Sample: 10:48	3.24	ND	2.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/19/2012	0.640	ND	ND	0.848	0.770	ND	ND	1.49	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	1.31	ND	ND	ND	--
2/24/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	ND	ND	ND	--
3/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	--	ND	ND	ND	--
4/24/2012	ND	ND	ND	1.15	ND	ND	ND	1.81	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	--	--	ND	ND	ND	1.57	ND	ND	ND	--
5/30/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.59	ND	ND	--	--	--	--	--	--	--	--	--	0.63	ND	ND	--
6/13/2012	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	0.71	ND	ND	--	--	--	--	--	ND	ND	ND	--	0.72	ND	ND	--
7/17/2012	ND	ND	ND	1.1	0.68	ND	ND	1.9	--	--	--	--	--	--	--	--	0.53	ND	ND	--	--	--	--	--	ND	ND	ND	1.8	0.52	ND	ND	--
8/27/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.70	ND	ND	--	--	--	--	--	--	--	--	--	0.63	ND	ND	--
9/20/2012	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	0.60	ND	ND	--	--	--	--	--	ND	ND	ND	--	0.62	ND	ND	--
[e, f] 12/27/2012	ND[g]	ND[g]	ND[g]	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[e, f] 12/27/2012	ND[g]	ND[g]	ND[g]	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[e, i] 12/27/2012	ND[g]	ND[g]	ND[g]	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 3/28/2013	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 5/23/2013	ND	ND	ND	--	0.99	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 11/19/2013	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[h] 2/19/2014	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 5/14/2014	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 5/15/2014	0.54	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 9/23/2014	0.53	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 11/21/2014	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[j] 3/3/2015	ND	ND	ND	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[k] 3/26/2015	--	--	--	--	1.4	ND	0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[k] 5/20/2015	--	--	--	--	1.3	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[l] 5/21/2015	--	--	--	--	1.3	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[K] 10/8/2015	--	--	--	--	1.5	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[K] 11/10/2015	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[K] 12/8/2015	--	--	--	--	1.7	ND	0.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
TREATMENT SYSTEM PERFORMANCE TESTING ANALYTICAL DATA
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

	EXTRACTION WELLS								GAC SYSTEM L1												GAC SYSTEM L2											
	C-026B (SP-1A or SP-1B)				R-092A (SP-2)				Influent to L1-A (SP-3)				Effluent from L1-A (SP-4)				Effluent from L1-B (SP-6)				Influent to L2-A (SP-7)				Effluent from L2-A (SP-8)				Effluent from L2-B (SP-10)			
	VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)				VOCs (µg/L)			
Sample Location & Date	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)	PCE	TCE	Freon 12	Nitrate (mg/L)
1/5/2016	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

PCE - Tetrachloroethene
TCE - Trichloroethene
Freon 12 - Dichlorodifluoromethane
ND - Non Detect
"--" - No Sample Collected
GAC Vessel Acting as Lead Contactor

[a] Indicates data was determined using method 8260B otherwise method 524.2.
[b] Time series testing:Restart sampling is used to track dilution and is not indicative of long term concentrations.
[c] Sample ID Mislabeled by Lab. Correct ID is SP-1B; Lab Reported as SP-2B in Work Order 09110437.
[d] Sample at SP-1B collected from water in pipeline. Not indicative of C-026B well operating conditions.
[e] Due to the restriction in run time for the system, only the discrete sampling was done for the 4th quarter.
[f] Analytical data from discrete sampling at 25 feet below water level.
[g] Analytical data from C-026A, C-026B can't be sampled with a bailer.
[h] Analytical data from discrete sampling at 50 feet below water level.
[i] Analytical data from discrete sampling at 75 feet below water level.
[j] Values are an average of four descrete depths in each well. Where analyte was non-detect, the detection limit was used for averaging purposes.
[k] Sample collected from spigot at the beginning of the 24 hr system exercise.
[l] Sample collected from spigot at the end of the 24 hr system exercise.

TABLE 3
TOTAL CUMULATIVE FLOW CALCULATION SUMMARY
BROADWAY PANTANO WESTERN CONTAINMENT SYSTEM

Time Period	C-026B (gallons)	R-092A (gallons)	R-090A (gallons)	R-091A (gallons)	Irrigation (gallons)	Discharge to Wash/Ground (gallons)
2nd Qtr 2003	49,046,000	92,573,000	52,317,000	89,702,000		
3rd Qtr 2003	28,920,000	53,645,000	-	82,063,000	55,000	
4th Qtr 2003	21,888,000	29,734,000	-	51,193,000	45,750	700,600
2003 Total	*99,854,000*	*175,952,000*	*52,317,000*	*222,958,000*	*100,750*	*700,600*
1st Qtr 2004	38,120,000	40,908,000	29,481,000	49,271,000	56,000	313,900
2nd Qtr 2004	42,234,000	37,513,000	28,866,000	50,805,000	37,830	-
3rd Qtr 2004	39,059,000	38,718,000	28,548,000	49,376,000	44,008	213,800
4th Qtr 2004	45,636,000	45,942,000	35,834,000	55,857,000	13,021	352,000
2004 Total	*165,049,000*	*163,081,000*	*122,729,000*	*205,309,000*	*150,859*	*879,700*
1st Qtr 2005	47,203,000	46,177,000	39,869,000	53,526,000	-	241,000
2nd Qtr 2005	49,549,000	48,118,000	41,866,000	55,918,000	-	14,500
3rd Qtr 2005	50,473,000	49,447,000	43,165,000	56,872,000	-	185,000
4th Qtr 2005	50,788,000	49,246,000	43,399,000	56,712,000	-	29,880
2005 Total	*198,013,000*	*192,988,000*	*168,299,000*	*223,028,000*	*-*	*470,380*
1st Qtr 2006	49,538,000	48,293,000	43,155,000	54,714,000	-	14,000
2nd Qtr 2006	49,556,000	47,933,000	44,059,000	53,627,000	-	410,000
3rd Qtr 2006	44,334,000	43,135,000	42,392,000	45,253,000	-	-
4th Qtr 2006	-	-	-	-	-	-
2006 Total	*143,428,000*	*139,361,000*	*129,606,000*	*153,594,000*	*-*	*424,000*
1st Qtr 2007	-	-	-	-	-	-
2nd Qtr 2007	37,083,000	37,080,000	36,196,000	37,923,000	-	16,800
3rd Qtr 2007	25,625,000	64,906,000	39,007,000	51,311,000	11	264,000
4th Qtr 2007	59,430,000	55,913,000	55,702,000	59,828,000	-	258,000
2007 Total	*122,138,000*	*157,899,000*	*130,905,000*	*149,062,000*	*11*	*538,800*
1st Qtr 2008	51,638,000	50,115,000	47,340,000	54,260,000	-	-
2nd Qtr 2008	44,679,000	32,630,000	33,129,000	44,182,000	-	101,000
3rd Qtr 2008	47,580,000	28,376,000	33,604,000	42,603,000	-	86,000
4th Qtr 2008	48,573,000	51,317,000	50,810,000	49,096,000	-	-
2008 Total	*192,470,000*	*162,438,000*	*164,883,000*	*190,141,000*	*-*	*187,000*
1st Qtr 2009	50,266,000	49,018,000	48,007,000	51,241,000	-	353,000
2nd Qtr 2009	46,712,000	48,995,000	45,621,000	50,056,000	-	-
3rd Qtr 2009	29,161,000	32,277,000	29,685,000	31,930,000	-	-
4th Qtr 2009	35,464,000	46,921,000	42,946,000	39,252,000	-	354,000
2009 Total	*161,603,000*	*177,211,000*	*166,259,000*	*172,479,000*	*-*	*707,000*
1st Qtr 2010	48,310,000	46,916,000	46,453,000	48,428,000	-	-
2nd Qtr 2010	45,724,000	44,780,000	43,977,000	46,348,000	-	361,000
3rd Qtr 2010	18,105,000	46,285,000	30,447,000	34,123,000	-	-
4th Qtr 2010	48,996,000	49,243,000	51,545,000	46,351,000	-	334,000
2010 Total	*161,135,000*	*187,224,000*	*172,422,000*	*175,250,000*	*-*	*695,000*
1st Qtr 2011	46,360,000	48,179,000	49,673,000	44,544,000	-	-
2nd Qtr 2011	219,000	61,960,000	30,971,000	31,423,000	-	338,000
3rd Qtr 2011	17,000	44,633,000	25,124,000	19,843,000	-	-
4th Qtr 2011	1,460,000	53,483,000	28,472,000	26,754,000	-	-
2011 Total	*48,056,000*	*208,255,000*	*134,240,000*	*122,564,000*	*-*	*338,000*
1st Qtr 2012	47,246,000	51,109,000	48,387,000	50,821,000	-	323,000
2nd Qtr 2012	48,361,000	49,775,000	47,562,000	51,278,000	-	-
3rd Qtr 2012	47,646,000	46,225,000	48,219,000	46,267,000	-	247,000
4th Qtr 2012	7,757,000	7,334,000	8,155,000	7,003,000	-	-
2012 Total	*151,010,000*	*154,443,000*	*152,323,000*	*155,369,000*	*-*	*570,000*
1st Qtr 2013	4,000	2,069,000	1,040,000	973,000	-	-
2nd Qtr 2013	-	2,262,000	1,198,000	1,006,000	-	-
3rd Qtr 2013	-	2,944,000	1,538,000	1,385,000	-	-
4th Qtr 2013	-	2,722,000	1,416,000	1,265,000	-	-
2013 Total	*4,000*	*9,997,000*	*5,192,000*	*4,629,000*	*-*	*-*
2014 Total	*2,419,000*	*5,033,000*	*3,704,000*	*3,643,000*	*-*	*-*
2015 Total	*1,762,000*	*4,669,000*	*2,702,000*	*3,722,000*	*-*	*-*
Project Total	**1,446,941,000**	**1,738,551,000**	**1,405,581,000**	**1,781,748,000**	**251,620**	**5,510,480**

Total Extraction: ***3,185,492,000*** ***Total Injection:*** ***3,187,329,000***

Net Extraction vs. Injection Difference: *(2,088,620)*

TABLE 4
TOTAL PCE REMOVAL CALCULATION SUMMARY
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

Time Period	R-092A PCE Average Conc. (µg/L)	R-092A Gallons of Water Pumped	R-092A PCE Removed (lbs)	C-026B PCE Average Conc. (µg/L)	C-026B Gallons of Water Pumped	C-026B PCE Removed (lbs)	Total PCE Removed	
							pounds	gallons
2nd Qtr 2003	7.6	92,573,000	**5.88**	2.15	49,046,000	**0.88**	**6.76**	**0.50**
3rd Qtr 2003	5.45	53,645,000	**2.44**	2.85	28,920,000	**0.69**	**3.13**	**0.23**
4th Qtr 2003	5.25	29,734,000	**1.31**	3.35	21,888,000	**0.61**	**1.92**	**0.14**
1st Qtr 2004	5.1	40,908,000	**1.74**	3.03	38,120,000	**0.97**	**2.71**	**0.20**
2nd Qtr 2004	4.47	37,513,000	**1.40**	3.6	42,234,000	**1.27**	**2.67**	**0.20**
3rd Qtr 2004	4.23	38,718,000	**1.37**	4.57	39,059,000	**1.49**	**2.86**	**0.21**
4th Qtr 2004	2.93	45,942,000	**1.13**	3.90	45,636,000	**1.49**	**2.61**	**0.19**
1st Qtr 2005	3.27	46,177,000	**1.26**	4.63	47,203,000	**1.83**	**3.09**	**0.23**
2nd Qtr 2005	2.97	48,097,000	**1.19**	4.50	49,529,000	**1.86**	**3.06**	**0.23**
3rd Qtr 2005	3.3	49,446,850	**1.36**	4.1	50,472,780	**1.73**	**3.09**	**0.23**
4th Qtr 2005	2.53	49,246,000	**1.04**	2.83	50,788,000	**1.20**	**2.25**	**0.17**
1st Qtr 2006	2.30	48,293,000	**0.93**	2.37	49,538,000	**0.98**	**1.91**	**0.14**
2nd Qtr 2006	2.30	47,933,000	**0.92**	2.13	49,556,000	**0.88**	**1.81**	**0.13**
3rd Qtr 2006	1.90	43,135,000	**0.69**	1.63	44,334,000	**0.61**	**1.29**	**0.10**
4th Qtr 2006	System Turned Off due to Break in Line from C-026B							
1st Qtr 2007								
2nd Qtr 2007	2.20	37,080,000	**0.68**	2.50	37,083,000	**0.78**	**1.46**	**0.11**
3rd Qtr 2007	1.70	64,906,000	**0.92**	1.55	25,625,000	**0.33**	**1.25**	**0.09**
4th Qtr 2007	1.57	55,913,000	**0.73**	1.47	59,430,000	**0.73**	**1.46**	**0.11**
1st Qtr 2008	1.50	50,115,000	**0.63**	1.27	51,638,000	**0.55**	**1.18**	**0.09**
2nd Qtr 2008	1.25	32,642,000	**0.34**	0.99	45,848,000	**0.38**	**0.72**	**0.05**
3rd Qtr 2008	1.47	28,376,000	**0.35**	1.07	47,580,000	**0.42**	**0.77**	**0.06**
4th Qtr 2008	1.27	51,317,000	**0.54**	0.95	48,573,000	**0.39**	**0.93**	**0.07**
1st Qtr 2009	1.20	49,018,000	**0.49**	0.85	50,266,000	**0.36**	**0.85**	**0.06**
2nd Qtr 2009	1.10	48,995,000	**0.45**	0.78	46,712,000	**0.30**	**0.76**	**0.06**
3rd Qtr 2009	1.10	32,277,000	**0.30**	1.40	29,161,000	**0.34**	**0.64**	**0.05**
4th Qtr 2009	1.40	46,921,000	**0.55**	0.78	35,464,000	**0.23**	**0.78**	**0.06**
1st Qtr 2010	0.91	46,916,000	**0.36**	0.59	48,310,000	**0.24**	**0.60**	**0.04**
2nd Qtr 2010	0.98	44,780,000	**0.37**	0.54	45,724,000	**0.21**	**0.57**	**0.04**
3rd Qtr 2010	1.00	46,285,000	**0.39**	0.62	18,105,000	**0.09**	**0.48**	**0.04**
4th Qtr 2010	0.86	49,243,000	**0.35**	0.52	48,996,000	**0.21**	**0.57**	**0.04**
1st Qtr 2011	0.82	48,179,000	**0.33**	*0.50*	46,360,000	**0.19**	**0.52**	**0.04**
2nd Qtr 2011	0.87	61,960,000	**0.45**	0.50 *	219,000	**0.00**	**0.45**	**0.03**
3rd Qtr 2011	1.07	44,651,000	**0.40**	0.97	17,000	**0.00**	**0.40**	**0.03**
4th Qtr 2011	0.96	53,483,000	**0.43**	2.64 **	1,460,000	**0.03**	**0.46**	**0.03**
1st Qtr 2012	0.77	51,109,000	**0.33**	0.64	47,246,000	**0.25**	**0.58**	**0.04**
2nd Qtr 2012	*0.50*	49,775,000	**0.21**	*0.50*	48,361,000	**0.20**	**0.41**	**0.03**
3rd Qtr 2012	0.68	46,225,000	**0.26**	*0.30*	47,646,000	**0.12**	**0.38**	**0.03**
4th Qtr 2012	*0.50*	7,334,000	**0.03**	*0.30*	7,757,000	**0.02**	**0.05**	**0.00**
1st Qtr 2013	*0.50*	2,069,000	**0.01**	*0.50*	4,000	**0.00**	**0.01**	**0.00**
2nd Qtr 2013	0.99	2,262,000	**0.02**	*0.50*	-	**0.00**	**0.02**	**0.00**
2nd Half 2013* **	*0.50*	5,666,000	**0.02**	*0.50*	-	**0.00**	**0.02**	**0.00**
2014	*0.50*	5,033,000	**0.02**	0.54	2,419,000	**0.01**	**0.03**	**0.00**
2015	1.44 ****	4,669,000	**0.06**	*0.50*	1,762,000	**0.01**	**0.07**	**0.01**
						2003 TOTAL	**11.81**	**0.87**
						2004 TOTAL	**10.86**	**0.80**
						2005 TOTAL	**11.49**	**0.85**
						2006 TOTAL	**5.00**	**0.37**
						2007 TOTAL	**4.17**	**0.31**
						2008 TOTAL	**3.60**	**0.27**
						2009 TOTAL	**3.02**	**0.22**
						2010 TOTAL	**2.22**	**0.16**
						2011 TOTAL	**1.84**	**0.14**
						2012 TOTAL	**1.42**	**0.11**
						2013 TOTAL	**0.05**	**0.00**
						2014 TOTAL	**0.03**	**0.00**
						2015 TOTAL	**0.07**	**0.01**
						TOTAL PCE REMOVED:	**55.59**	**4.10**

PCE was not detected above reporting limit, the value in table is the reporting limit. Reporting limit was used to calculate mass removal.
Indicates PCE was not detected above the MDL, the value in table is the MDL. MDL was used to calculate mass removal.

* : denotes previous analytical concentration was used
**: Taken from 9/30/2011 1040 hrs
***Sampling frequency reduced to a semi-annual basis, per City of Tucson
****Average PCE concentration of samples collected from spigot.
lbs = pounds µg/L = micrograms per liter

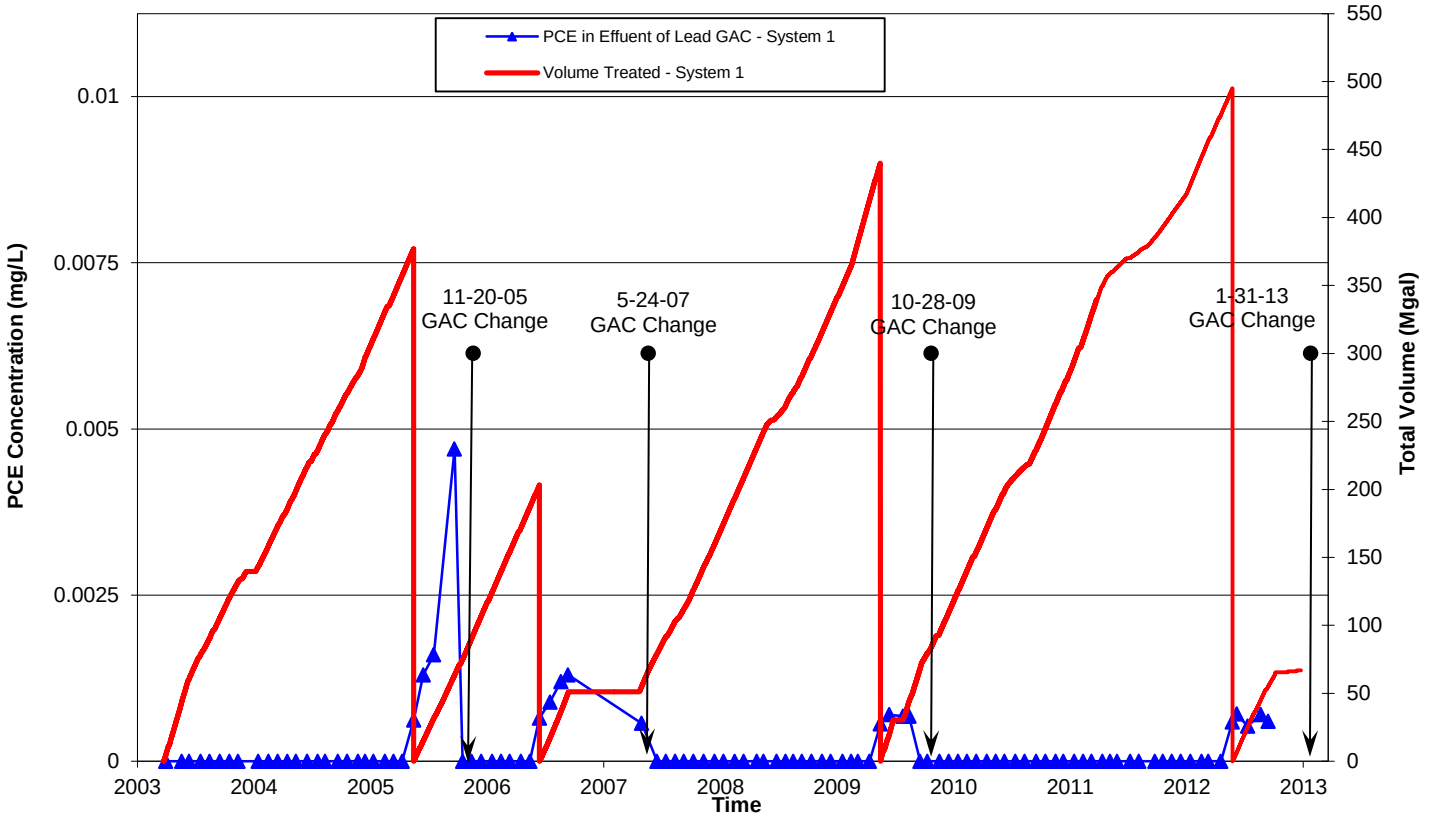
TABLE 5
ELECTRICAL USAGE AND COST SUMMARY
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

908 N. ALAMO AVE. C-026B Well Site Premise: 0973799823			6100 E 5TH ST. R-090A/R-091A Well Site Premise: 8009364866			554 N. WILMOT RD. R-092A Well Site Premise: 6637422296			PROJECT TOTALS	
	COST	KWH		COST	KWH		COST	KWH	COST	KWH
8/15/03 - 8/25/03	$644.95	6,880				8/15/03-8/26/03	$1,780.44	19,360	$2,425.39	26,240
8/25/03 - 9/24/03	$2,604.17	28,480	8/15/03 - 9/30/03	$42.16	300	8/26/03 - 9/25/03	$4,241.17	46,480	$6,887.50	75,260
3rd Qtr 2003	*$3,249.12*	*35,360*	*3rd Qtr 2003*	*$42.16*	*300*	*3rd Qtr 2003*	*$6,021.61*	*65,840*	*$9,312.89*	*101,500*
9/24/03 - 10/23/03	$2,691.45	29,440	9/30/03 - 10/30/03	$19.29	210	9/25/03 - 10/24/03	$4,459.44	48,880	$7,170.18	78,530
10/23/03-11/21/03	$1,943.96	22,000	10/30/03 - 12/1/03	$14.89	170	10/24/03 - 11/24/03	$3,402.06	38,720	$5,360.91	60,890
11/21/03 - 12/26/03	$1,000.31	11,440	12/1/03 - 1/2/04	$10.49	120	11/24/03 - 12/29/03	$1,840.82	21,120	$2,851.62	32,680
4th Qtr 2003	*$5,635.72*	*62,880*	*4th Qtr 2003*	*$44.67*	*500*	*4th Qtr 2003*	*$9,702.32*	*108,720*	*$15,382.71*	*172,100*
2003 Total	**$8,884.84**	**98,240**	**2003 Total**	**$86.83**	**800**	**2003 Total**	**$15,723.93**	**174,560**	**$24,695.60**	**273,600**
12/26/03 - 1/27/04	$1,702.42	19,520	1/2/04 - 2/2/04	$12.24	140	12/29/03 - 1/28/04	$3,003.34	34,560	$4,718.00	54,220
1/27/04 - 2/25/04	$2,608.91	30,000	2/2/04 - 3/2/04	$12.24	140	1/28/04 - 2/26/04	$4,214.29	48,560	$6,835.44	78,700
2/25/04 - 3/25/04	$3,204.01	36,880	3/2/04 - 3/31/04	$10.49	120	2/26/04 - 3/25/04	$3,681.47	42,400	$6,895.97	79,400
1st Qtr 2004	*$7,515.34*	*86,400*	*1st Qtr 2004*	*$34.97*	*400*	*1st Qtr 2004*	*$10,899.10*	*125,520*	*$18,449.41*	*212,320*
3/25/04 - 4/23/04	$2,442.84	28,080	3/31/04 - 4/29/04	$8.74	100	3/26/04 - 4/26/04	$4,276.56	49,280	$6,728.14	77,460
4/23/04 - 5/24/04	$3,546.90	39,280	4/29/04 - 5/28/04	$11.01	120	4/26/04 - 5/25/04	$3,909.11	43,120	$7,467.02	82,520
5/24/04 - 6/23/04	$3,469.95	38,000	5/28/04 - 6/29/04	$13.78	150	5/25/04 - 6/24/04	$3,986.52	43,680	$7,470.25	81,830
2nd Qtr 2004	*$9,459.69*	*105,360*	*2nd Qtr 2004*	*$33.53*	*370*	*2nd Qtr 2004*	*$12,172.19*	*136,080*	*$21,665.41*	*241,810*
6/23/04 - 7/23/04	$2,545.93	27,840	6/29/04-7/29/04	$12.85	140	6/24/04-7/26/04	$3,469.95	38,000	$6,028.73	65,980
7/23/04 - 8/23/04	$3,284.21	36,000	7/29/04 - 8/27/04	$12.84	140	7/26/04 - 8/24/04	$3,567.61	39,120	$6,864.66	75,260
8/23/04 - 9/22/04	$3,276.94	35,920	8/27/04 - 9/28/04	$11.02	120	8/24/04 - 9/23/04	$3,945.50	43,280	$7,233.46	79,320
3rd Qtr 2004	*$9,107.08*	*99,760*	*3rd Qtr 2004*	*$36.71*	*400*	*3rd Qtr 2004*	*$10,983.06*	*120,400*	*$20,126.85*	*220,560*
9/22/04 - 10/21/04	$3,327.82	36,480	9/28/04 - 10/27/04	$11.02	120	9/23/04 - 10/22/04	$3,749.32	41,120	$7,088.16	77,720
10-21/04 - 11/19/04	$3,228.63	36,560	10/27/04 - 11/29/04	$8.79	100	10/22/04 - 11/22/04	$4,391.25	49,920	$7,628.67	86,580
11/20/04 - 12/22/04	$3,995.10	46,080	11/30/04 - 12/30/04	$7.00	80	11/23/04 - 12/23/04	$4,347.58	50,160	$8,349.68	96,320
4th Qtr 2004	*$10,551.55*	*119,120*	*4th Qtr 2004*	*$26.81*	*300*	*4th Qtr 2004*	*$12,488.15*	*141,200*	*$23,066.51*	*260,620*
2004 Total	**$36,633.66**	**410,640**	**2004 Total**	**$132.02**	**1,470**	**2004 Total**	**$46,542.50**	**523,200**	**$83,308.18**	**935,310**
12/23/04 - 1/25/05	$3,995.10	46,080	12/31/04 - 1/31/05	$9.60	110	12/24/04 - 1/26/05	$4,796.83	55,360	$8,801.53	101,550
1/26/05 - 2/23/05	$4,174.79	48,160	2/1/05 - 3/1/05	$6.11	70	1/27/05 - 2/24/05	$4,008.91	46,240	$8,189.81	94,470
2/23/05 - 3/24/05	$2,958.36	34,080	3/1/05 - 3/30/05	$7.86	90	2/24/05 - 3/25/05	$3,608.03	41,600	$6,574.25	75,770
1st Qtr 2005	*$11,128.25*	*128,320*	*1st Qtr 2005*	*$23.57*	*270*	*1st Qtr 2005*	*$12,413.77*	*143,200*	*$23,565.59*	*271,790*
3/24/05 - 4/22/05	$3,608.03	41,600	3/30/05 - 4/28/05	$7.00	80	3/25/05 - 4/25/05	$4,458.16	51,440	$8,073.19	93,120
4/22/05 - 5/23/05	$4,118.33	45,760	4/28/05 - 5/27/05	$7.31	80	4/25/05 - 5/24/05	$4,423.96	48,960	$8,549.60	94,800
5/23/05 - 6/22/05	$3,654.83	40,080	5/27/05 - 6/28/05	$9.19	100	5/24/05 - 6/23/05	$4,192.60	46,000	$7,856.62	86,180
2nd Qtr 2005	*$11,381.19*	*127,440*	*2nd Qtr 2005*	*$23.50*	*260*	*2nd Qtr 2005*	*$13,074.72*	*146,400*	*$24,479.41*	*274,100*
6/22/05-7/22/05	$3,974.59	43,600	6/28/05-7/28/05	$8.26	90	6/23/05-7/25/05	$4,701.29	51,600	$8,684.14	95,290
7/22/05-8/22/05	$3,823.60	41,920	7/28/05-8/26/05	$7.34	80	7/25/05-8/23/05	$4,376.13	48,000	$8,207.07	90,000
8/22/05-9/21/05	$4,107.12	45,040	8/26/05-9/27/05	$9.20	100	8/23/05-9/22/05	$4,696.01	51,520	$8,812.33	96,660
3rd Qtr 2005	*$11,905.31*	*130,560*	*3rd Qtr 2005*	*$24.80*	*270*	*3rd Qtr 2005*	*$13,773.43*	*151,120*	*$25,703.54*	*281,950*
9/21/05-10/20/05	$3,627.31	39,760	9/27/05-10/26/05	$8.27	90	9/22/05-10/21/05	$4,150.76	45,520	$7,786.34	85,370
10/20/05-11/18/05	$3,806.61	43,040	10/26/05-11/28/05	$7.91	90	10/21/05-11/21/05	$4,618.19	52,400	$8,432.71	95,530
11/18/05-12/21/05	$4,252.62	49,040	11/28/05-12/29/05	$7.00	80	11/21/05-12/22/05	$4,626.01	53,360	$8,885.63	102,480
4th Qtr 2005	*$11,686.54*	*131,840*	*4th Qtr 2005*	*$23.18*	*260*	*4th Qtr 2005*	*$13,394.96*	*151,280*	*$25,104.68*	*283,380*
2005 Total	**$46,101.29**	**518,160**	**2005 Total**	**$95.05**	**1,060**	**2005 Total**	**$52,656.88**	**592,000**	**$98,853.22**	**1,111,220**
12/21/06-1/24/06	$4,079.76	47,040	12/29/05-1/30/06	$7.86	90	12/22/05-1/25/006	$4,729.71	54,560	$8,817.33	101,690
1/24/06-2/22/06	$3,706.36	42,720	1/30/06-2/28/06	$6.11	70	1/25/06-2/23/06	$4,183.46	48,240	$7,895.93	91,030
2/22/06-3/23/06	$3,582.27	41,280	2/28/06-3/29/06	$7.00	80	2/23/06-3/24/06	$4,087.10	47,120	$7,676.37	88,480
1st Qtr 2006	*$11,368.39*	*131,040*	*1st Qtr 2006*	*$20.97*	*240*	*1st Qtr 2006*	*$13,000.27*	*149,920*	*$24,389.63*	*281,200*
3/23/06-4/21/06	$3,333.33	38,400	3/29/06-4/27/06	$7.00	80	3/24/06-4/24/06	$4,190.82	48,320	$7,531.15	86,800
4/21/06-5/22/06	$4,171.24	46,400	4/27/06-5/26/06	$8.23	90	4/24/06-5/23/06	$4,447.55	49,280	$8,627.02	95,770
5/22/06-6/21/06	$4,005.74	43,920	5/26/06-6/27/06	$8.27	90	5/23/06-6/22/06	$4,274.78	46,880	$8,288.79	90,890
2nd Qtr 2006	*$11,510.31*	*128,720*	*2nd Qtr 2006*	*$23.50*	*260*	*2nd Qtr 2006*	*$12,913.15*	*144,480*	*$24,446.96*	*273,460*
6/21/06-7/21/06	$3,945.83	43,120	6/27/06-7/27/06	$8.30	90	6/22/06-7/24/06	$4,902.60	53,600	$8,856.73	96,810
7/21/06-8/21/06	$4,191.96	45,760	7/27/06-8/25/06	$8.30	90	7/24/06-8/22/06	$4,484.11	48,960	$8,684.37	94,810
8/21/06-9/20/06	$3,826.74	41,760	8/25/06-9/26/06	$9.24	100	8/22/06-9/21/06	$4,250.39	46,400	$8,086.37	88,260
3rd Qtr 2006	*$11,964.53*	*130,640*	*3rd Qtr 2006*	*$25.84*	*280*	*3rd Qtr 2006*	*$13,637.10*	*148,960*	*$25,627.47*	*279,880*
9/20/06-10/19/06	$51.65	560	9/26/06-10/25/06	$7.37	80	9/21/06-10/20/06	$147.61	1,600	$206.63	2,240
10/19/06-11/17/06	$28.69	320	10/25/06-11/27/06	$7.97	90	10/20/06-11/20/06	$121.52	1,360	$158.18	1,770
11/17/06-12/20/06	$35.10	400	11/27/06-12/28/06	$7.03	80	11/20/06-12/21/06	$98.31	1,120	$140.44	1,600
4th Qtr 2006	*$115.44*	*1,280*	*4th Qtr 2006*	*$22.37*	*250*	*4th Qtr 2006*	*$367.44*	*4,080*	*$505.25*	*5,610*
2006 Total	**$34,958.67**	**391,680**	**2006 Total**	**$92.68**	**1,030**	**2006 Total**	**$39,917.96**	**447,440**	**$74,969.31**	**840,150**
12/21/06-1/23/07	$14.03	160	12/29/06-1/29/07	$9.65	110	12/22/06-1/24/07	$105.33	1,200	$129.01	1,470
1/24/07-2/21/07	$21.06	240	1/30/07-2/27/07	$10.53	120	1/25/07-2/22/07	$91.29	1,040	$122.88	1,400
2/21/07-3/21/07	$35.10	400	2/27/07-3/27/07	$14.03	160	2/22/07-3/22/07	$98.31	1,120	$147.44	1,680
1st Qtr 2007	*$70.19*	*800*	*1st Qtr 2007*	*$34.21*	*390*	*1st Qtr 2007*	*$294.93*	*3,360*	*$399.33*	*4,550*
3/21/07-4/20/07	$28.10	320	3/27/07-4/26/07	$7.90	90	3/22/07-4/23/07	$119.36	1,360	$155.36	1,770
4/20/07-5/21/07	$3,364.03	37,280	4/26/07-5/25/07	$9.17	100	4/23/07-5/22/07	$4,243.67	46,880	$7,616.87	84,260
5/21/07-6/20/07	$3,965.54	43,280	5/25/07-6/26/07	$10.14	110	5/22/07-6/21/07	$4,520.64	49,360	$8,496.32	92,750
2nd Qtr 2007	*$7,357.67*	*80,880*	*2nd Qtr 2007*	*$27.21*	*300*	*2nd Qtr 2007*	*$8,883.67*	*97,600*	*$16,268.55*	*178,780*
6/20/07-7/20/07	$3,717.20	40,560	6/26/07-7/26/07	$8.30	90	6/21/07-7/23/07	$4,527.94	49,440	$8,253.44	90,090
7/20/07-8/20/07	$3,366.24	36,720	7/26/07-8/24/07	$7.37	80	7/23/07-8/21/07	$4,169.60	45,520	$7,543.21	82,320
8/20/07-9/19/07	$73.78	800	8/24/07-9/25/07	$9.24	100	8/21/07-9/20/07	$5,155.53	56,320	$5,238.55	57,220
3rd Qtr 2007	*$7,157.22*	*78,080*	*3rd Qtr 2007*	*$24.91*	*270*	*3rd Qtr 2007*	*$13,853.07*	*151,280*	*$21,035.20*	*229,630*
9/19/07-10/18/07	$2,774.68	30,240	9/25/07-10/24/07	$7.37	80	9/19/07-10/19/07	$4,812.29	52,560	$7,594.34	82,880
10/18/07-11/19/07	$28.66	320	10/24/07-11/27/07	$8.87	100	10/19/07-11/20/07	$4,396.53	49,520	$4,434.06	49,940
11/19/07-12/20/07	$42.12	480	11/27/07-12/28/07	$7.03	80	11/20/07-12/21/07	$4,292.78	49,280	$4,341.93	49,840
4th Qtr 2007	*$2,845.46*	*31,040*	*4th Qtr 2007*	*$23.27*	*260*	*4th Qtr 2007*	*$13,501.60*	*151,360*	*$16,370.33*	*182,660*
2007 Total	**$17,430.54**	**190,800**	**2007 Total**	**$109.60**	**1,220**	**2007 Total**	**$36,533.27**	**403,600**	**$54,073.41**	**595,620**
12/20/07-1/23/08	$12,100.02	139,200	12/28/07-1/29/08	$7.03	80	12/21/07-1/24/08	$4,994.32	57,360	$17,101.37	196,640
1/23/08-2/21/08	$3,653.77	41,920	1/29/08-2/27/08	$7.03	80	1/24/08-2/22/08	$4,126.07	47,360	$7,786.87	89,360
2/21/08-3/21/08	$35.10	400	2/27/08-3/27/08	$7.03	80	2/22/08-3/24/08	$4,535.91	52,080	$4,578.04	52,560
1st Qtr 2008	*$15,788.89*	*181,520*	*1st Qtr 2008*	*$21.09*	*240*	*1st Qtr 2008*	*$13,656.30*	*156,800*	*$29,466.28*	*338,560*
3/21/08-4/21/08	$7,675.45	88,240	3/27/08-4/25/08	$7.90	90	3/24/08-4/22/08	$4,258.05	48,880	$11,941.40	137,210
4/21/08-5/20/08	$3,912.32	43,360	4/25/08-5/27/08	$9.15	100	4/22/08-5/21/08	$4,473.74	49,520	$8,395.21	92,980
5/20/08-6/19/08	$2,561.84	27,600	5/27/08-6/25/08	$8.70	90	5/21/08-6/30/08	$1,393.34	14,800	$3,963.88	42,490
2nd Qtr 2008	*$14,149.61*	*159,200*	*2nd Qtr 2008*	*$25.75*	*280*	*2nd Qtr 2008*	*$10,125.13*	*113,200*	*$24,300.49*	*272,680*
6/19/08-7/22/08	$4,066.29	44,080	6/25/08-7/28/08	$9.68	100	6/20/08-7/23/08	$154.72	1,600	$4,230.69	45,780
7/22/08-8/20/08	$3,498.13	37,840	7/28/08-8/26/08	$8.71	90	7/23/08-8/21/08	$3,154.76	34,080	$6,661.60	72,010
8/20/08-9/19/08	$3,636.96	39,360	8/26/08-9/25/08	$8.71	90	8/21/08-9/22/08	$3,775.79	40,880	$7,421.46	80,330
3rd Qtr 2008	*$11,201.38*	*121,280*	*3rd Qtr 2008*	*$27.10*	*280*	*3rd Qtr 2008*	*$7,085.27*	*76,560*	*$18,313.75*	*198,120*
9/19/08-10/20/08	$3,987.68	43,200	9/25/08-10/24/08	$10.63	110	9/22/08-10/21/08	$4,038.81	43,760	$8,037.12	87,070
10/20/08-11/19/08	$3,922.07	43,840	10/24/08-11/25/08	$9.32	100	10/21/08-11/20/08	$4,184.15	46,880	$8,115.54	90,820
11/19/08-12/22/08	$4,288.11	48,720	11/25/08-12/30/08	$8.32	90	11/20/08-12/23/08	$4,839.66	55,040	$9,136.09	103,850
4th Qtr 2008	*$12,197.86*	*135,760*	*4th Qtr 2008*	*$28.27*	*300*	*4th Qtr 2008*	*$13,062.62*	*145,680*	*$25,288.75*	*281,740*
2008 Total	**$53,337.74**	**597,760**	**2008 Total**	**$102.21**	**1,100**	**2008 Total**	**$43,929.32**	**492,240**	**$97,369.27**	**1,091,100**
12/22/08-1/23/09	$3,936.12	44,160	12/30/08-1/29/09	$7.68	80	12/22/08-1/26/09	$4,746.18	53,440	$8,689.98	97,680
1/23/09-2/23/09	$4,124.66	46,320	1/29/09-2/27/09	$7.68	80	1/26/09-2/24/09	$4,355.13	48,960	$8,487.47	95,360
2/23/09-3/24/09	$3,971.03	44,560	2/27/09-3/30/09	$7.68	80	2/24/09-3/25/09	$4,550.65	51,200	$8,529.36	95,840
1st Qtr 2009	*$12,031.81*	*135,040*	*1st Qtr 2009*	*$23.04*	*240*	*1st Qtr 2009*	*$13,651.96*	*153,600*	*$25,706.81*	*288,880*
3/24/09-4/22/09	$3,971.03	44,560	3/30/09-4/28/09	$7.68	80	3/25/09-4/23/09	$4,543.67	51,120	$8,522.38	95,760
4/22/09-5/21/09	$4,007.45	40,560	4/28/09-5/28/09	$9.73	90	4/23/09-5/22/09	$5,037.23	50,960	$9,054.41	91,610
5/21/09-6/22/09	$4,168.95	40,000	5/28/09-6/26/09	$9.99	90	5/22/09-6/23/09	$5,441.06	52,480	$9,620.00	92,570
2nd Qtr 2009	*$12,147.43*	*125,120*	*2nd Qtr 2009*	*$27.40*	*260*	*2nd Qtr 2009*	*$15,021.96*	*154,560*	*$27,196.79*	*279,940*
6/22/09-7/22/09	$1,414.12	13,040	6/26/09-7/28/09	$11.10	100	6/23/09-7/23/09	$1,545.72	14,320	$2,970.94	27,460
7/22/09-8/20/09	$2,904.51	27,520	7/28/09-8/26/09	$10.02	90	7/23/09-8/21/09	$3,773.50	36,000	$6,688.03	63,610
8/20/09-9/22/09	$4,593.29	44,000	8/26/09-9/28/09	$11.13	100	8/21/09-9/23/09	$5,986.95	57,600	$10,591.37	101,700
3rd Qtr 2009	*$8,911.92*	*84,560*	*3rd Qtr 2009*	*$32.25*	*290*	*3rd Qtr 2009*	*$11,306.17*	*107,920*	*$20,250.34*	*192,770*
9/22/09-10/21/09	$1,034.52	9,280	9/28/09-10/27/09	$8.92	80	9/23/09-10/22/09	$4,749.08	45,520	$5,792.52	54,880
10/21/09-11/20/09	$3,065.25	31,920	10/27/09-11/30/09	$9.92	100	10/22/09-11/23/09	$3,821.02	40,320	$6,896.19	72,340
11/20/09-12/23/09	$4,156.79	45,840	11/30/09-12/31/09	$7.83	80	11/23/09-12/28/09	$5,144.68	56,960	$9,309.30	102,880
4th Qtr 2009	*$8,256.56*	*87,040*	*4th Qtr 2009*	*$26.67*	*260*	*4th Qtr 2009*	*$13,714.78*	*142,800*	*$21,998.01*	*230,100*
2009 Total	**$41,347.72**	**431,760**	**2009 Total**	**$109.36**	**1,050**	**2009 Total**	**$53,694.87**	**558,880**	**$95,151.95**	**991,690**

TABLE 5
ELECTRICAL USAGE AND COST SUMMARY
BROADWAY-PANTANO WESTERN CONTAINMENT SYSTEM

908 N. ALAMO AVE. C-026B Well Site Premise: 0973799823			6100 E 5TH ST. R-090A/R-091A Well Site Premise: 8009364866			554 N. WILMOT RD. R-092A Well Site Premise: 6637422296			PROJECT TOTALS	
	COST	KWH		COST	KWH		COST	KWH	COST	KWH
12/23/09-1/26/10	$4,461.48	48,480	12/31/09-2/1/10	$8.01	80	12/28/09-1/27/10	$4,442.62	48,080	$8,912.11	96,640
1/26/10-2/24/10	$3,961.05	42,560	2/1/10-3/2/10	$7.89	80	1/27/10-2/25/10	$4,408.83	47,600	$8,377.77	90,240
2/24/10-3/25/10	$3,416.71	35,680	3/2/10-3/31/10	$8.99	90	2/25/10-3/26/10	$3,829.36	40,240	$7,255.06	90,241
1st Qtr 2010	*$11,839.24*	*126,720*	*1st Qtr 2010*	*$24.89*	*250*	*1st Qtr 2010*	*$12,680.81*	*135,920*	*$24,544.94*	*277,121*
3/25/10-4/23/10	$3,968.14	42,640	3/31/10-4/29/10	$7.89	80	3/25/10-4/23/10	$3,968.14	42,640	$8,669.11	93,520
4/23/10-5/24/10	$4,819.28	46,000	4/29/10-5/28/10	$9.07	80	4/23/10-5/24/10	$4,819.28	46,000	$8,708.98	82,080
5/24/10-6/22/10	$3,966.57	35,760	5/28/10-6/24/10	$9.22	80	5/24/10-6/22/10	$3,966.57	35,760	$7,942.36	71,600
2nd Qtr 2010	*$12,753.99*	*124,400*	*2nd Qtr 2010*	*$26.18*	*240*	*2nd Qtr 2010*	*$12,753.99*	*124,400*	*$25,320.45*	*247,200*
6/22/10-7/23/10	$1,228.06	10,800	6/24/10-7/27/10	$11.37	100	6/24/10-7/27/10	$4,911.25	45,520	$6,150.68	56,420
7/23/10-8/24/10	$130.25	960	7/27/10-8/26/10	$10.43	90	7/27/10-8/26/10	$4,952.17	45,040	$5,092.85	46,090
8/24/10-9/24/10	$4,563.02	32,640	8/26/10-9/28/10	$20.36	100	8/26/10-9/28/10	$6,899.36	49,440	$11,482.74	82,180
3rd Qtr 2010	*$5,921.33*	*44,400*	*3rd Qtr 2010*	*$42.16*	*290*	*3rd Qtr 2010*	*$16,762.78*	*140,000*	*$22,726.27*	*184,690*
9/24/10-10/26/10	$6,546.53	47,440	9/28/10-10/28/10	$19.45	90	9/28/10-10/28/10	$7,027.76	50,160	$13,593.74	97,690
10/26/10-11/24/10	$5,391.89	41,600	10/28/10-11/30/10	$16.95	80	10/28/10-11/30/10	$6,699.43	53,680	$12,108.27	95,360
11/24/10-12/29/10	$5,477.58	44,080	11/30/10-1/3/11	$17.97	90	11/30/10-1/3/11	$6,149.41	48,720	$11,644.96	92,890
4th Qtr 2010	*$17,416.00*	*133,120*	*4th Qtr 2010*	*$54.37*	*260*	*4th Qtr 2010*	*$19,876.60*	*152,560*	*$37,346.97*	*285,940*
2010 Total	**$47,930.56**	**428,640**	**2010 Total**	**$147.60**	**1,040**	**2010 Total**	**$62,074.18**	**552,880**	**$109,938.63**	**994,951**
12/29/10-1/28/11	$5,378.82	42,480	1/3/11-2/1/11	$26.26	180	1/3/11-2/1/11	$5,890.89	47,520	$11,295.97	90,180
2/1/11-3/2/11	$4,819.62	37,840	2/1/11-3/2/11	$17.47	80	2/1/11-3/2/11	$6,095.49	47,600	$10,932.58	85,520
3/2/11-3/31/11	$5,429.52	43,680	3/2/11-3/31/11	$16.72	80	3/2/11-3/31/11	$5,131.56	41,200	$10,577.80	84,960
1st Qtr 2011	*$15,627.96*	*124,000*	*1st Qtr 2011*	*$60.45*	*340*	*1st Qtr 2011*	*$17,117.94*	*136,320*	*$32,806.35*	*260,660*
3/29/11-4/27/11	$163.65	1,280	3/31/11-4/29/11	$17.68	90	3/31/11-4/29/11	$8,438.02	68,720	$8,619.35	70,090
4/27/2011-5/26/11	$81.13	560	4/29/11-5/31/11	$20.28	100	4/29/11-5/31/11	$6,648.43	47,280	$6,749.84	47,940
5/26/11-6/27/11	$126.07	880	5/31/11-6/29/11	$18.19	80	5/31/11-6/29/11	$6,402.35	45,520	$6,546.61	46,480
2nd Qtr 2011	*$370.85*	*2,720*	*2nd Qtr 2011*	*$56.15*	*270*	*2nd Qtr 2011*	*$21,488.80*	*161,520*	*$21,915.80*	*164,510*
6/27/11-7/28/11	$59.66	400	6/29/11-8/1/11	$19.99	100	6/29/11-8/1/11	$5,109.28	36,800	$5,188.93	37,300
7/28/11-8/26/11	$59.55	400	8/1/11-8/30/11	$16.72	70	8/1/11-8/30/11	$4,862.91	34,960	$4,939.18	35,430
8/26/11-9/27/11	$68.27	480	8/30/11-9/29/11	$16.72	70	8/30/11-9/29/11	$6,202.08	44,960	$6,287.07	45,510
3rd Qtr 2011	*$187.48*	*1,280*	*3rd Qtr 2011*	*$53.43*	*240*	*3rd Qtr 2011*	*$16,174.27*	*116,720*	*$16,415.18*	*118,240*
9/27/11-10/27/11	$704.99	4,960	9/29/11-10/31/11	$18.09	80	9/29/11-10/31/11	$6,275.54	44,720	$6,998.62	49,760
10/27/11-11/29/11	$124.00	960	10/31/11-12/1/11	$14.80	60	10/31/11-12/1/11	$5,620.73	45,360	$5,759.53	46,380
11/29/11-12/30/11	$194.07	1,520	12/1/11-1/4/11	$15.76	70	12/1/11-1/4/12	$6,560.94	53,200	$6,770.77	54,790
4th Qtr 2011	*$1,023.06*	*7,440*	*4th Qtr 2011*	*$48.65*	*210*	*4th Qtr 2011*	*$18,457.21*	*143,280*	*$19,528.92*	*150,930*
2011 Total	**$17,209.35**	**135,440**	**2011 Total**	**$218.68**	**1,060**	**2011 Total**	**$73,238.22**	**557,840**	**$90,666.25**	**694,340**
12/30/11-1/31/12	$4,531.40	36,560	1/4/12-2/2/12	$14.80	60	1/4/12-2/2/12	$5,625.06	45,680	$10,171.26	82,300
1/31/12-2/29/12	$5,250.92	42,500	2/2/12-3/2/12	$14.80	60	2/2/12-3/2/12	$5,893.70	47,920	$11,159.42	90,480
2/29/12-3/29/12	$4,665.70	37,680	3/2/12-4/2/12	$16.36	70	3/2/12-4/2/12	$6,106.53	46,320	$10,788.59	84,070
1st Qtr 2012	*$14,448.02*	*116,740*	*1st Qtr 2012*	*$45.96*	*190*	*1st Qtr 2012*	*$17,625.29*	*139,920*	*$32,119.27*	*256,850*
3/29/12-4/27/12	$5,231.68	39,520	4/2/12-5/1/12	$16.40	70	4/2/12-5/1/12	$5,746.65	43,360	$10,994.73	82,950
4/27/12-5/29/12	$6,692.70	45,680	5/1/12-5/31/12	$17.62	70	5/1/12-5/31/12	$6,989.64	47,280	$13,699.96	93,030
5/29/12-6/28/12	$5,636.44	38,480	5/31/12-7/2/12	$18.52	80	5/31/12-7/2/12	$7,599.37	52,240	$13,254.33	90,800
2nd Qtr 2012	*$17,560.82*	*123,680*	*2nd Qtr 2012*	*$52.54*	*220*	*2nd Qtr 2012*	*$20,335.66*	*142,880*	*$37,949.02*	*266,780*
6/28/12-7/30/12	$6,389.67	43,760	7/2/12-8/1/12	$17.36	70	7/2/12-8/1/12	$6,942.09	47,600	$5,188.93	37,300
7/30/12-8/28/12	$5,400.36	36,800	8/1/12-8/30/12	$18.54	80	8/1/12-8/30/12	$5,937.12	40,560	$4,939.18	35,430
8/28/12-9/27/12	$5,834.34	39,840	8/30/12-10/1/12	$18.54	80	8/30/12-10/1/12	$7,090.53	48,640	$6,287.07	45,510
3rd Qtr 2012	*$17,624.37*	*120,400*	*3rd Qtr 2012*	*$54.44*	*230*	*3rd Qtr 2012*	*$19,969.74*	*136,800*	*$16,415.18*	*118,240*
9/27/12-10/29/12	$3,493.23	23,440	10/1/12-10/31/12	$17.36	70	10/1/12-10/31/12	$2,887.96	19,200	$6,998.62	49,760
10/29/12-11/29/12	$341.27	2,480	10/31/12-12/3/12	$19.49	100	10/31/12-12/3/12	$349.96	2,560	$5,759.53	46,380
11/29/12-1/2/13	$322.91	2,320	12/3/12-1/4/13	$18.77	90	12/3/12-1/4/13	$334.03	334	$6,770.77	54,790
4th Qtr 2012	*$4,157.41*	*28,240*	*4th Qtr 2012*	*$55.62*	*260*	*4th Qtr 2012*	*$3,571.95*	*22,094*	*$19,528.92*	*150,930*
2012 Total	**$53,790.62**	**389,060**	**2012 Total**	**$208.56**	**900**	**2012 Total**	**$61,502.64**	**441,694**	**$106,012.39**	**792,800**
1/2/2013-1/31/2013	$46.36	240	1/4/2013-2/4/2013	$257.09	1,840	1/4/2013-2/4/2013	$18.75	90	$322.20	2,170
1/31/2013-3/1/2013	$40.87	240	2/4/2013-3/5/2013	$306.18	2,240	2/4/2013-3/5/2013	$17.41	80	$364.46	2,560
3/1/2013-4/1/2013	$50.18	320	3/5/2013-4/3/2013	$423.71	3,040	3/5/2013-4/3/2013	$18.84	90	$492.73	3,450
1st Qtr 2013	*$137.41*	*800*	*1st Qtr 2013*	*$986.98*	*7,120*	*1st Qtr 2013*	*$55.00*	*260*	*$1,179.39*	*8,180*
4/1/2013-4/30/2013	$41.10	240	4/3/2013-5/2/2013	$421.45	3,040	4/3/2013-5/2/2013	$21.80	120	$484.35	3,400
4/30/2013-5/30/2013	$63.49	400	5/2/2013-6/3/2013	$601.27	4,000	5/2/2013-6/3/2013	$24.32	130	$689.08	4,530
5/30/2013-7/1/2013	$67.10	400	6/3/2013-7/3/2013	$178.49	1,200	6/3/2013-7/3/2013	$28.94	100	$274.53	1,700
2nd Qtr 2013	*$171.69*	*1,040*	*2nd Qtr 2013*	*$1,201.21*	*8,240*	*2nd Qtr 2013*	*$75.06*	*350*	*$1,447.96*	*9,630*
7/1/2013-7/31/2013	$79.41	400	7/3/2013-8/2/2013	$194.56	1,120	7/3/2013-8/2/2013	$30.67	90	$5,188.93	37,300
7/31/2013-8/29/2013	$79.62	400	8/2/2013-9/3/2013	$464.64	2,800	8/2/2013-9/2/2013	$32.08	100	$4,939.18	35,430
8/29/2013-9/30/2013	$89.22	480	9/3/2013-10/2/2013	$1,040.79	6,480	9/3/2013-10/2/2013	$30.02	90	$6,287.07	45,510
3rd Qtr 2013	*$248.25*	*1,280*	*3rd Qtr 2013*	*$1,699.99*	*10,400*	*3rd Qtr 2013*	*$92.77*	*280*	*$16,415.18*	*118,240*
9/30/2013-10/29/2013	$49.91	240	9/30/2013-10/31/2013	$582.40	4,240	10/2/2013-10/31/2013	$26.61	80	$6,998.62	49,760
10/29/2013-11/27/2013	$49.94	240	10/31/2013-12/3/2013	$323.64	2,320	10/31/2013-12/3/2013	$29.94	110	$5,759.53	46,380
11/27/2013-1/2/2014	$58.65	320	12/3/2013-1/6/2014	$323.64	2,320	12/3/2013-1/6/2014	$33.21	140	$6,770.77	54,790
4th Qtr 2013	*$158.50*	*800*	*4th Qtr 2013*	*$1,229.68*	*8,880*	*4th Qtr 2013*	*$89.76*	*330*	*$19,528.92*	*150,930*
2013 Total	**$715.85**	**3,920**	**2013 Total**	**$5,117.86**	**34,640**	**2013 Total**	**$312.59**	**1,220**	**$38,571.45**	**286,980**
1/2/2014-1/31/2014	$50.89	240	1/6/2014-2/4/2014	$317.23	2,240	1/6/2014-2/4/2014	$27.73	90	$395.85	2,570
1/31/2014-3/3/2014	$49.91	240	2/4/2014-3/6/2014	$334.41	2,400	2/4/2014-3/6/2014	$26.61	80	$410.93	2,720
3/3/2014-4/1/2014	$49.91	240	3/6/2014-4/3/2014	$302.10	2,160	3/6/2014-4/3/2014	$31.01	120	$383.02	2,520
1st Qtr 2014	*$150.71*	*720*	*1st Qtr 2014*	*$953.74*	*6,800*	*1st Qtr 2014*	*$85.35*	*290*	*$1,189.80*	*7,810*
4/1/2014-4/30/2014	$49.91	240	4/3/2014-5/2/2014	$323.20	2,240	4/3/2014-5/2/2014	$31.59	120	$404.70	2,600
4/30/2014-5/30/2014	$286.22	1,680	5/2/2014-6/3/2014	$103.15	560	5/2/2014-6/3/2014	$30.43	90	$419.80	2,330
5/30/2014-6/30/2014	$68.26	320	6/3/2014-7/2/2014	$312.34	1,840	6/3/2014-7/2/2014	$30.43	90	$411.03	2,250
2nd Qtr 2014	*$404.39*	*2,240*	*2nd Qtr 2014*	*$738.69*	*4,640*	*2nd Qtr 2014*	*$92.45*	*300*	*$1,235.53*	*7,180*
6/30/2014-7/30/2014	$90.56	480	7/2/2014-8/1/2014	$79.96	400	7/2/2014-8/1/2014	$32.04	100	$5,188.93	37,300
7/30/2014-8/28/2014	$68.73	320	8/1/2014-9/2/2014	$380.23	2,240	8/2/2014-9/2/2014	$32.04	100	$4,939.18	35,430
8/28/2014-9/29/2014	$79.96	400	9/2/2014-10/1/2014	$90.23	480	9/2/2014-10/1/2014	$30.08	100	$6,287.07	45,510
3rd Qtr 2014	*$239.25*	*1,200*	*3rd Qtr 2014*	*$550.42*	*3,120*	*3rd Qtr 2014*	*$94.16*	*300*	*$16,415.18*	*118,240*
9/29/2014-10/28/2014	$490.96	3,360	10/1/2014-10/30/2014	$79.06	480	10/1/2014-10/30/2014	$26.77	90	$6,998.62	49,760
10/28/2014-11/26/2014	$40.28	160	10/30/2014-12/2/2014	$88.55	560	10/30/2014-12/2/2014	$27.10	97	$5,759.53	46,380
11/26/2014-12/31/2014	$58.96	320	12/2/2014-1/5/2015	$293.66	2,000	12/2/2014-1/5/2015	$26.74	94	$6,770.77	54,790
4th Qtr 2014	*$590.20*	*3,840*	*4th Qtr 2014*	*$461.27*	*3,040*	*4th Qtr 2014*	*$80.61*	*281*	*$19,528.92*	*150,930*
2014 Total	**$1,384.55**	**8,000**	**2014 Total**	**$2,704.12**	**17,600**	**2014 Total**	**$352.57**	**1,171**	**$38,369.43**	**284,160**
12/31/2014-1/30/2015	$68.25	400	1/5/2015-2/3/2015	$24.86	78	1/5/2015-2/3/2015	$293.43	2,000	$386.54	2,478
1/30/2015-3/2/2015	$58.92	320	2/3/2015-3/4/2015	$28.96	113	2/3/2015-3/4/2015	$77.60	480	$165.48	913
3/2/2015-3/31/2015	$68.24	400	3/4/2015-4/2/2015	$33.94	133	3/4/2015-4/2/2015	$848.41	5,760	$950.59	6,293
1st Qtr 2015	*$195.41*	*1,120*	*1st Qtr 2015*	*$87.76*	*324*	*1st Qtr 2015*	*$1,219.44*	*8,240*	*$1,502.61*	*9,684*
3/31/2015-4/29/2015	$44.14	160	4/2/2015-5/1/2015	$35.14	137	4/2/2015-5/1/2014	$96.14	480	$175.42	777
4/29/2015-5/29/2015	$285.52	1,600	5/1/2015-6/2/2015	$33.77	103	5/1/2015-6/2/2015	$356.43	2,000	$675.72	3,703
5/29/2015-6/29/2015	$299.92	1,680	6/2/2015-7/1/2015	$31.70	93	6/2/2015-7/1/2015	$94.53	480	$426.15	2,253
2nd Qtr 2015	*$629.58*	*3,440*	*2nd Qtr 2015*	*$100.61*	*333*	*2nd Qtr 2015*	*$547.10*	*2,960*	*$1,277.29*	*6,733*
6/29/2015-7/29/2015	$94.53	480	7/1/2015-7/31/2015	$32.31	97	7/1/2015-7/31/2015	$94.53	480	$5,188.93	37,300
7/29/2015-8/31/2015	$71.25	320	7/31/2015-8/31/2015	$33.63	105	7/31/2015-8/31/2015	$94.92	480	$4,939.18	35,430
8/31/2015-9/29/2015	$83.09	400	8/31/2015-9/30/2015	$34.06	108	8/31/2015-9/30/2015	$94.92	480	$6,287.07	45,510
3rd Qtr 2015	*$248.87*	*1,200*	*3rd Qtr 2015*	*$100.00*	*310*	*3rd Qtr 2015*	*$284.37*	*1,440*	*$16,415.18*	*118,240*
9/29/2015-10/28/2015	$54.64	160	9/30/2015-10/29/2015	$28.49	105	9/30/2015-10/29/2015	$289.37	1,920	$6,998.62	49,760
10/28/2015-11/25/2105	$201.73	1,360	10/29/2015-12/1/2015	$28.95	109	10/29/2015-12/1/2015	$79.47	280	$5,759.53	46,380
11/25/2015-12/30/2015	$44.72	240	12/1/2015-1/4/2016	$28.72	107	12/1/2015-1/4/2016	$312.78	2,080	$6,770.77	54,790
4th Qtr 2015	*$301.09*	*1,760*	*4th Qtr 2015*	*$86.16*	*321*	*4th Qtr 2015*	*$681.62*	*4,280*	*$19,528.92*	*150,930*
2015 Total	**$1,374.95**	**7,520**	**2015 Total**	**$374.53**	**1,288**	**2015 Total**	**$2,732.53**	**16,920**	**$38,724.00**	**285,587**
TOTAL	***$361,100.34***	***3,611,620***	***TOTAL***	***$9,499.10***	***64,258***	***TOTAL***	***$489,211.46***	***4,763,645***	***$950,703.09***	***9,177,508***

FIGURE 1
Broadway-Pantano PCE vs Total Volume Treated in GAC System 1
Prior to PCE Break Through



Broadway-Pantano PCE vs Total Volume Treated in GAC System 2
Prior to PCE Break Through

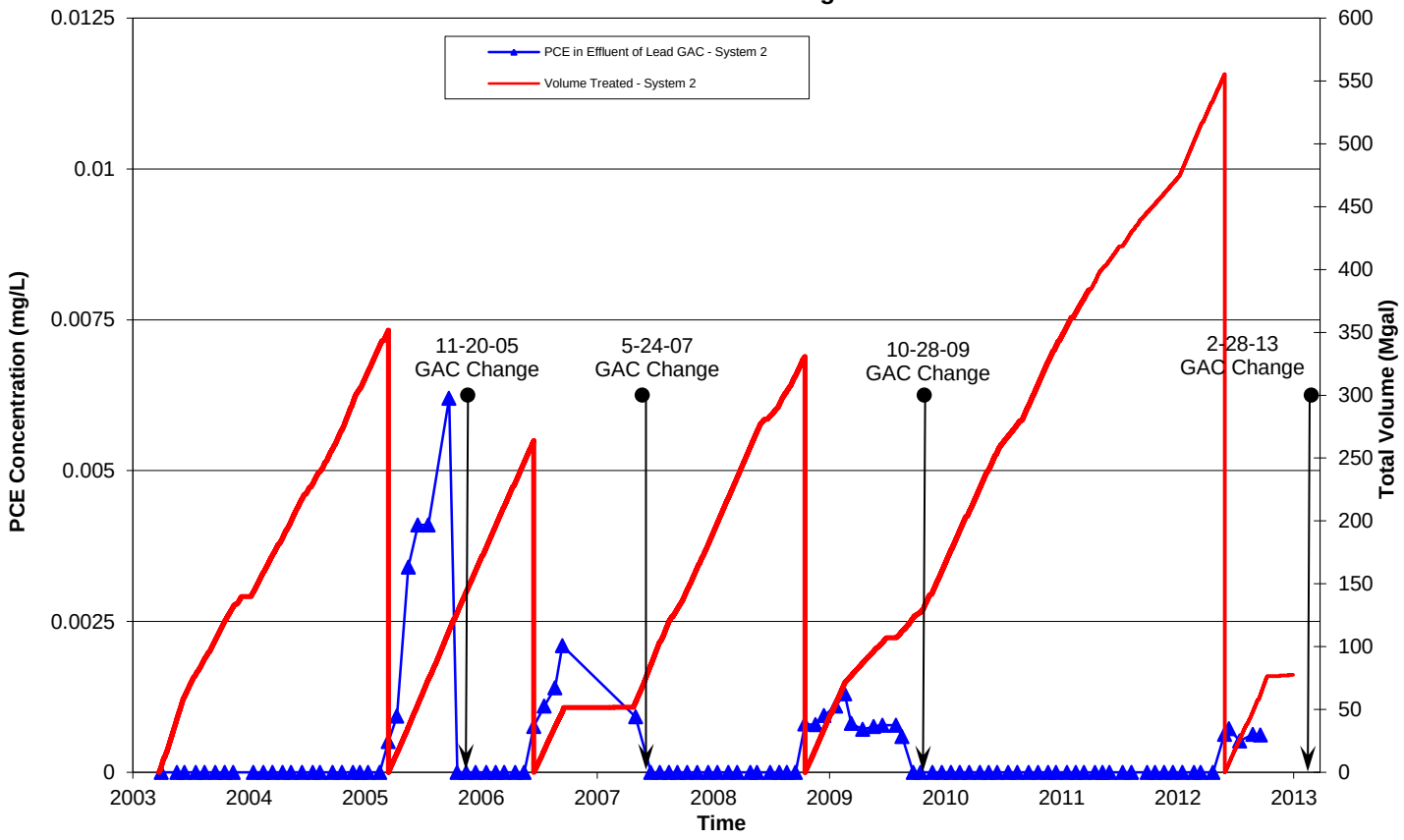


FIGURE 2. R-092A HYDROGRAPH -- January 1, 2015 to December 31, 2015

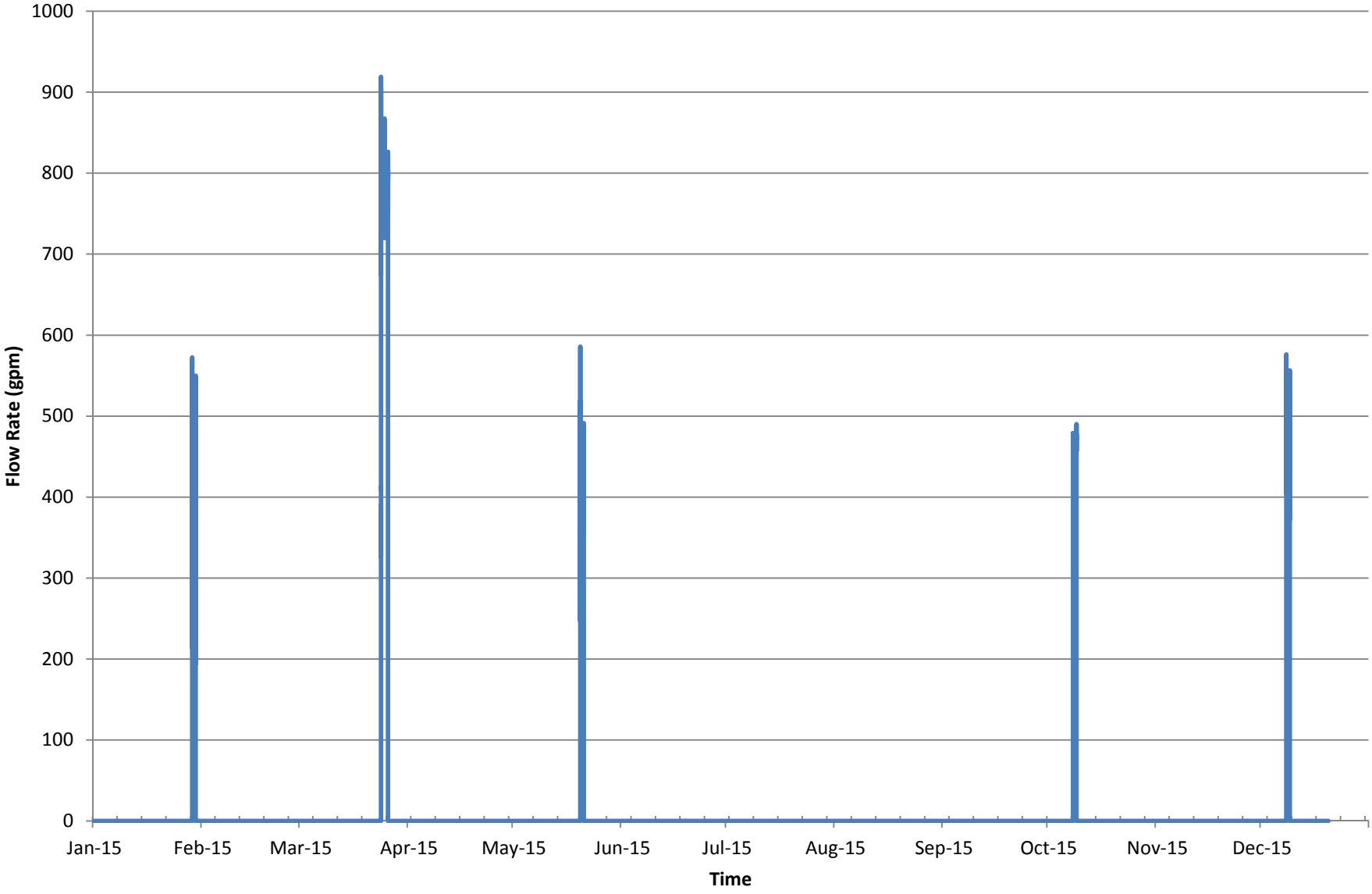


FIGURE 3. C-026B HYDROGRAPH -- January 1, 2015 to December 31, 2015

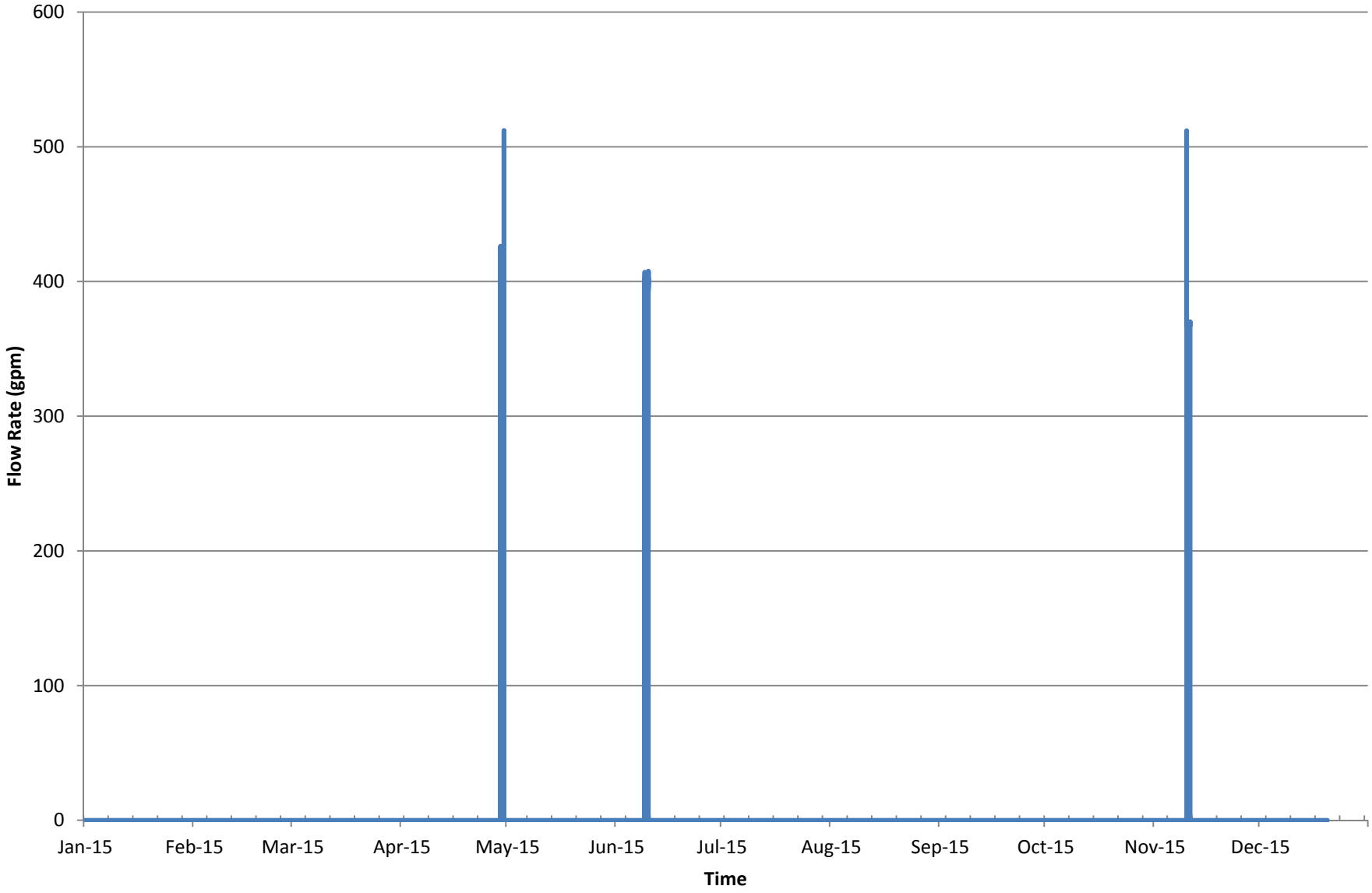


FIGURE 4. R-090A HYDROGRAPH -- January 1, 2015 to December 31, 2015

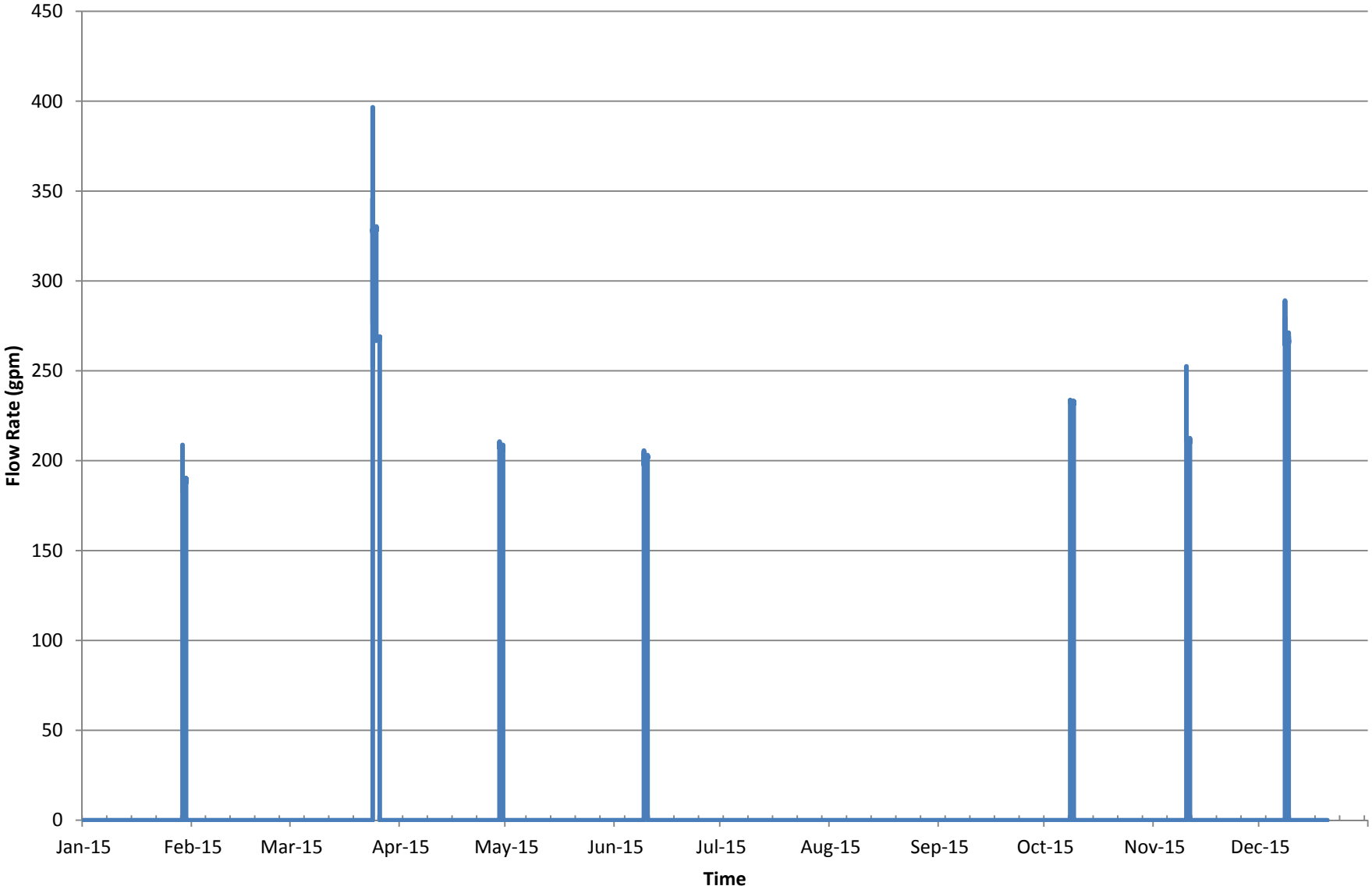


FIGURE 5. R-091A HYDROGRAPH -- January 1, 2015 to December 31, 2015

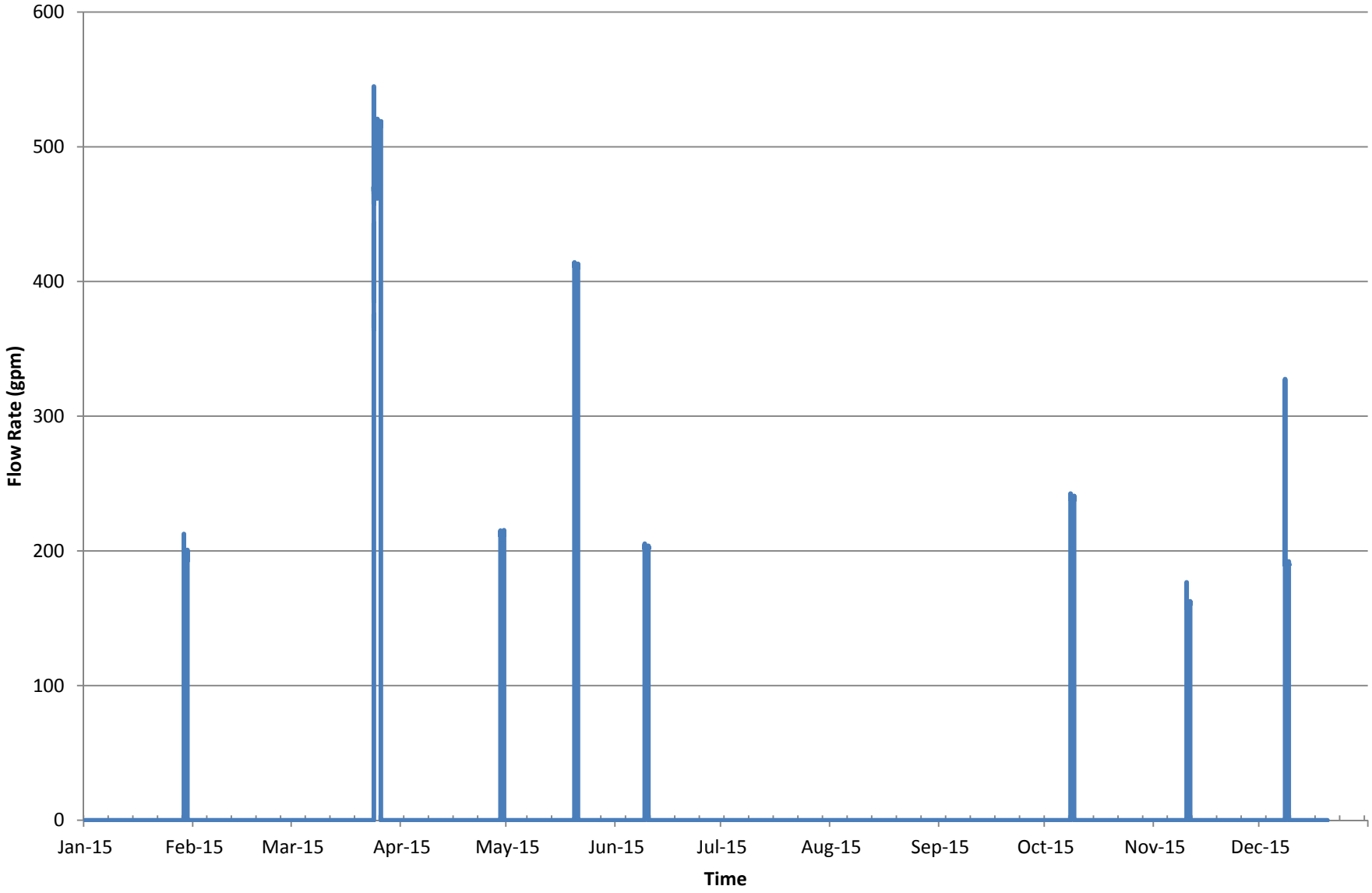


FIGURE 6. R-092A + C-026B HYDROGRAPH -- January 1, 2015 to December 31, 2015

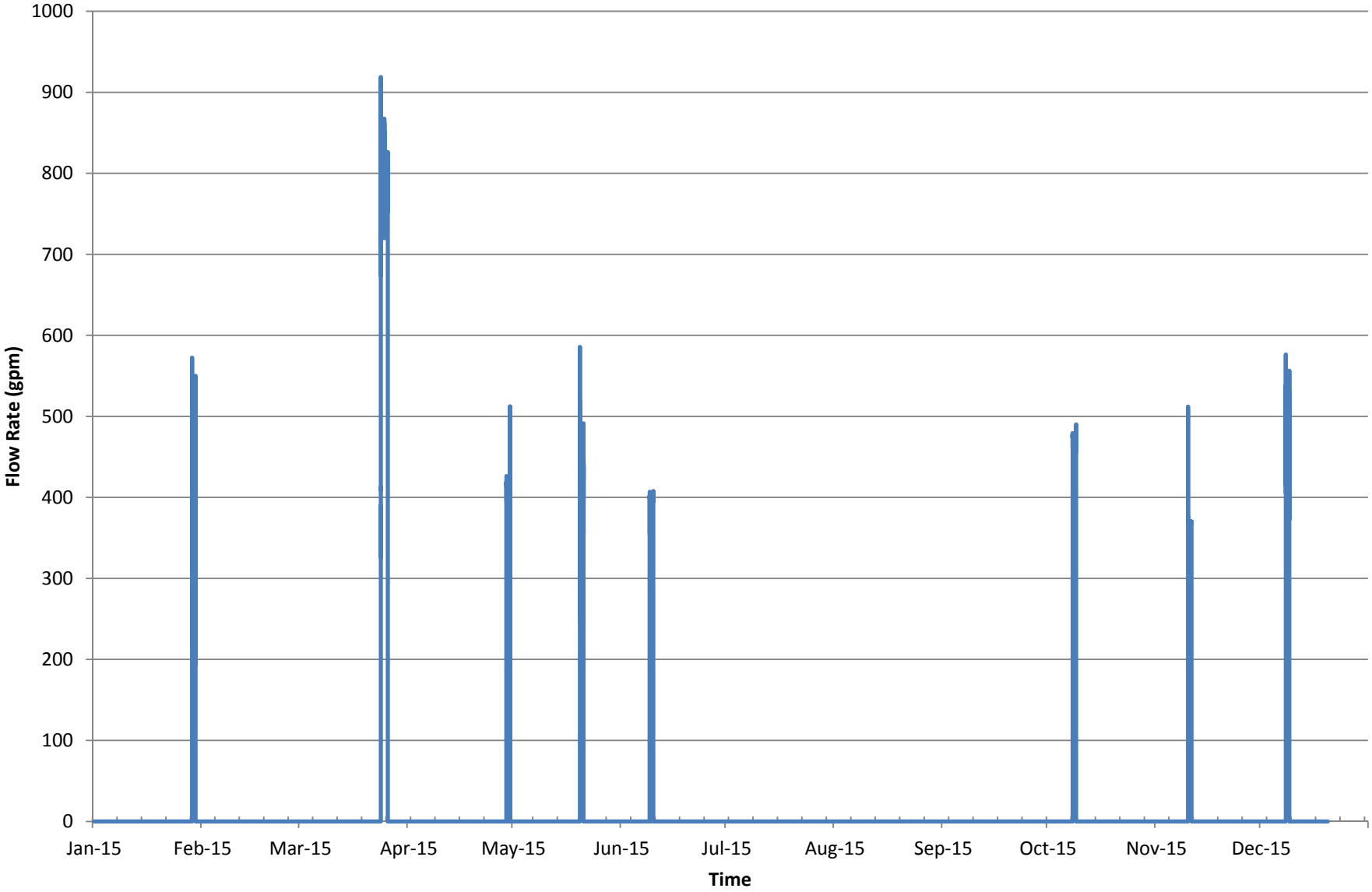


FIGURE 7. SPECIFIC CAPACITY CALCULATION -- January 1, 2015 to December 31, 2015

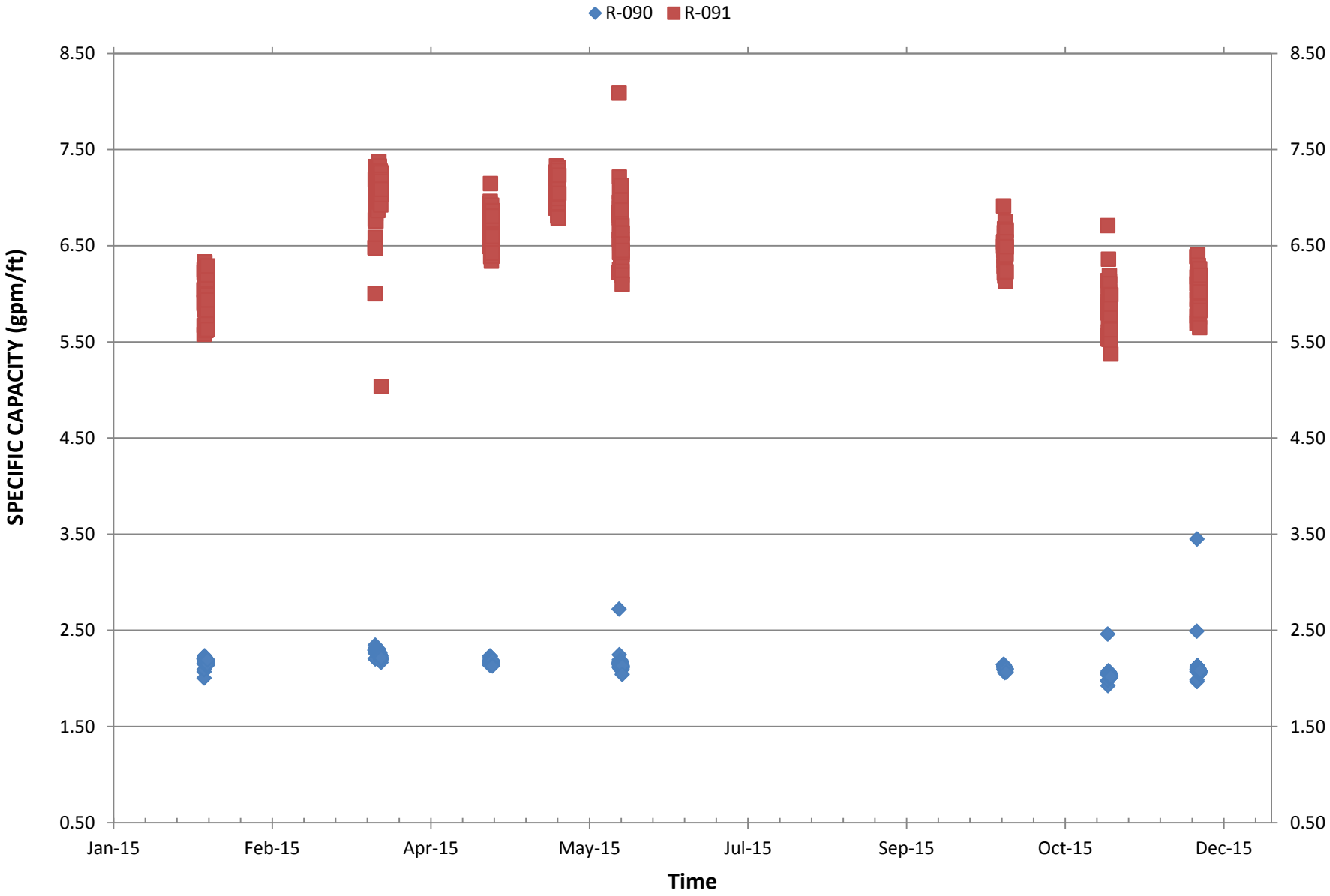


FIGURE 8: SPECIFIC CAPACITY -- Startup through December 31, 2015

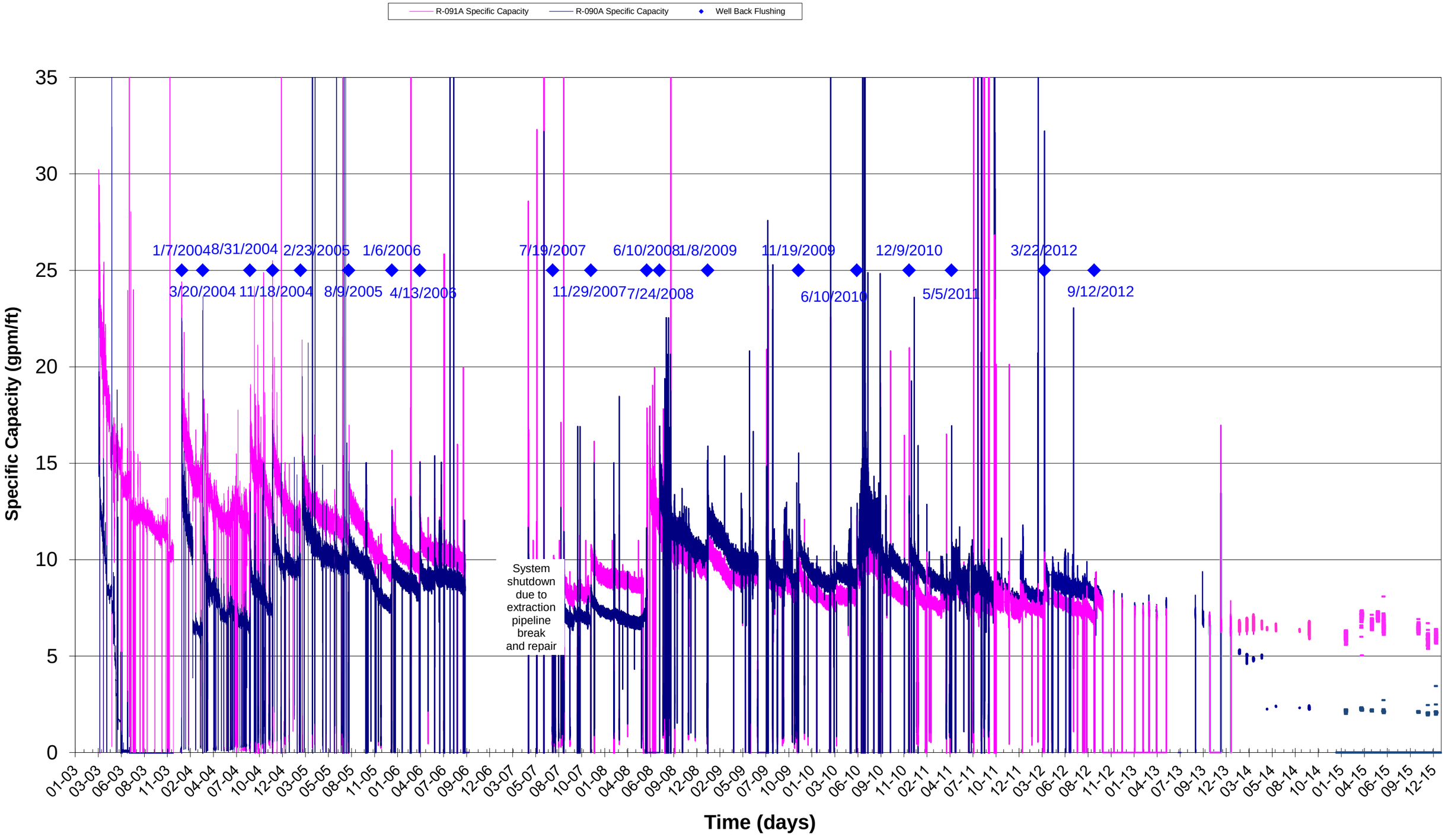


FIGURE 9. INJECTION WELL WATER LEVEL -- January 1, 2015 to December 31, 2015

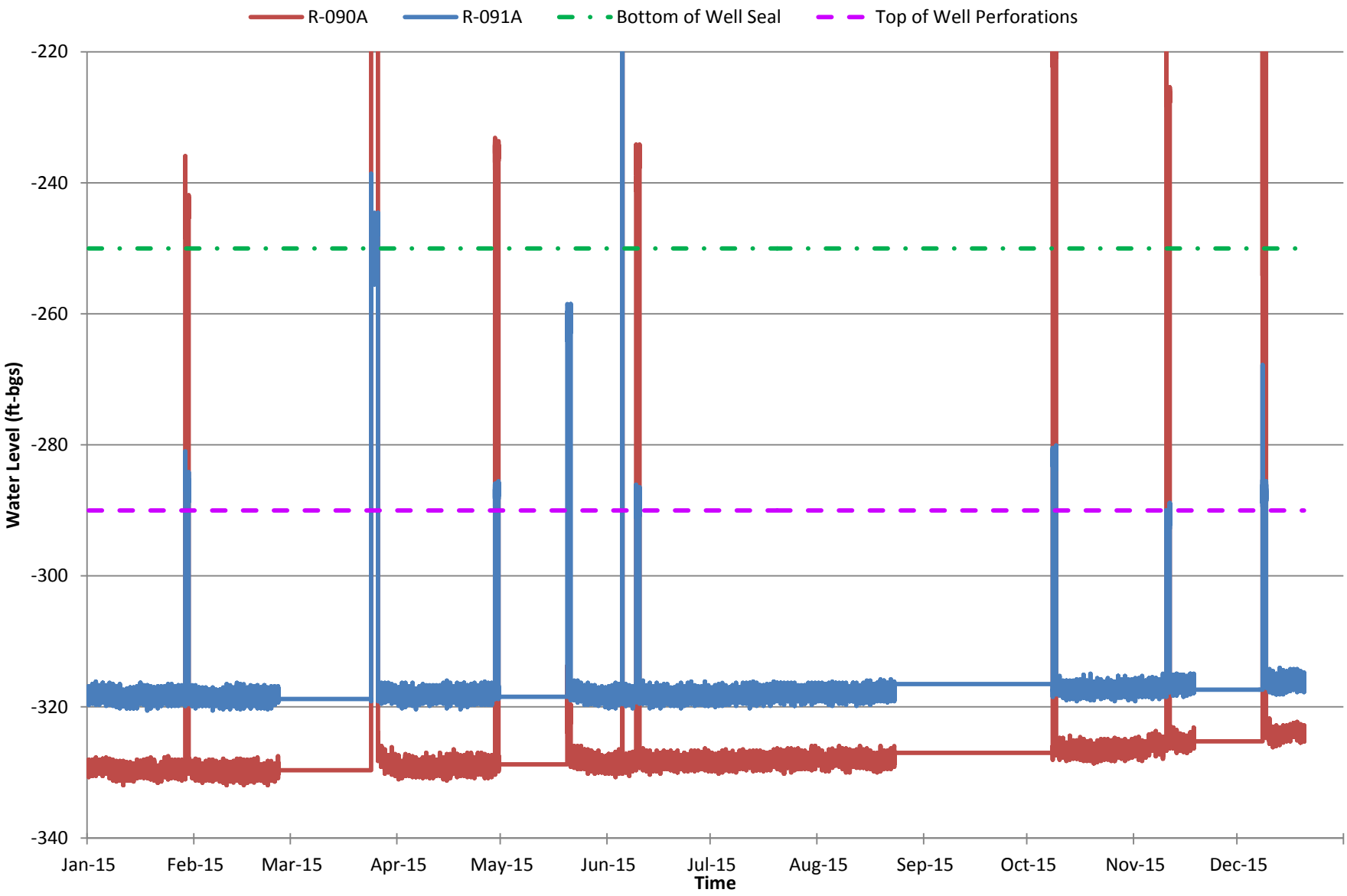


FIGURE 10. EXTRACTION WELL WATER LEVEL -- January 1, 2015 to December 31, 2015

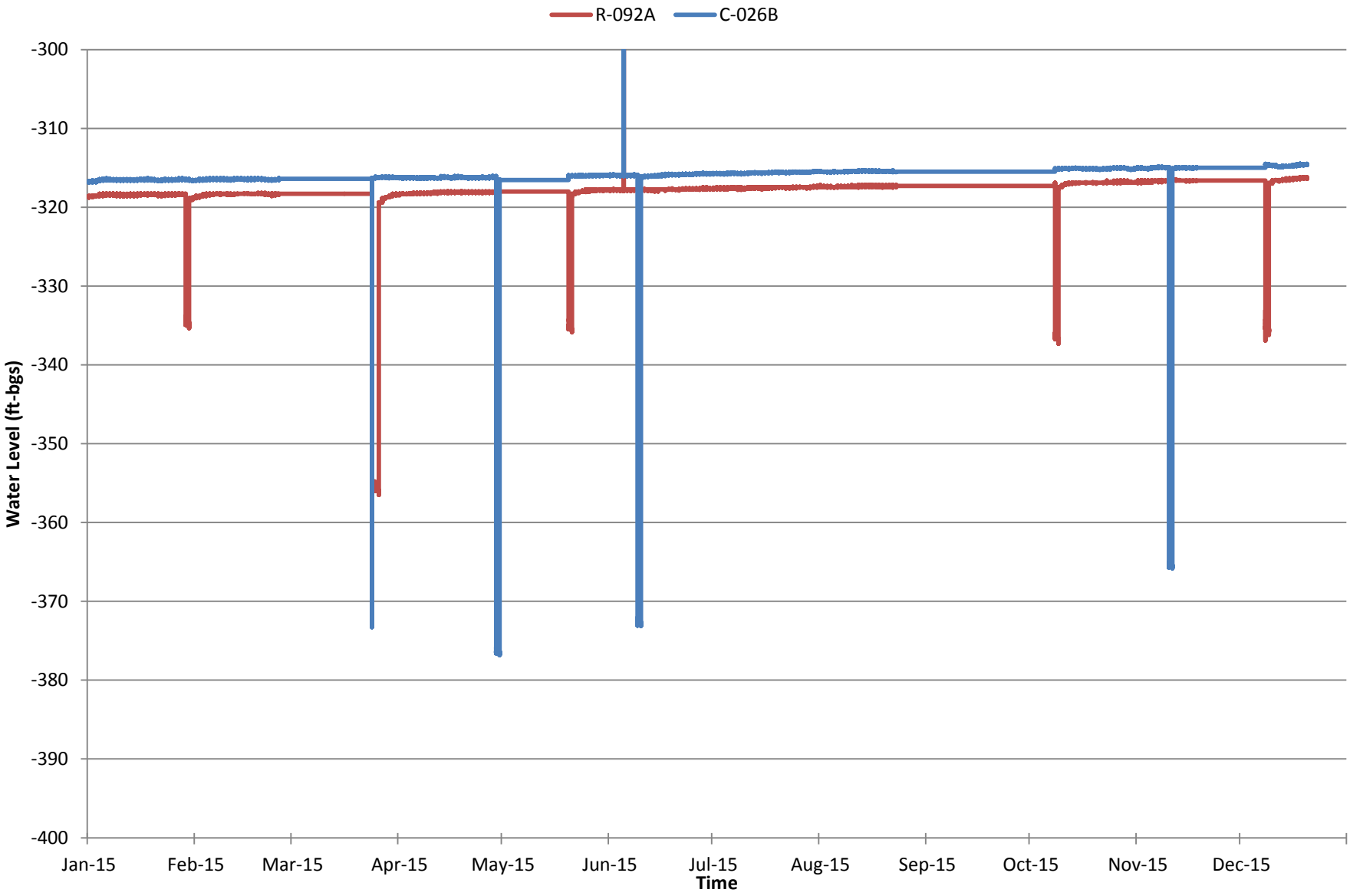


FIGURE 11. INJECTION WELL WATER LEVEL -- Startup Through December 31, 2015

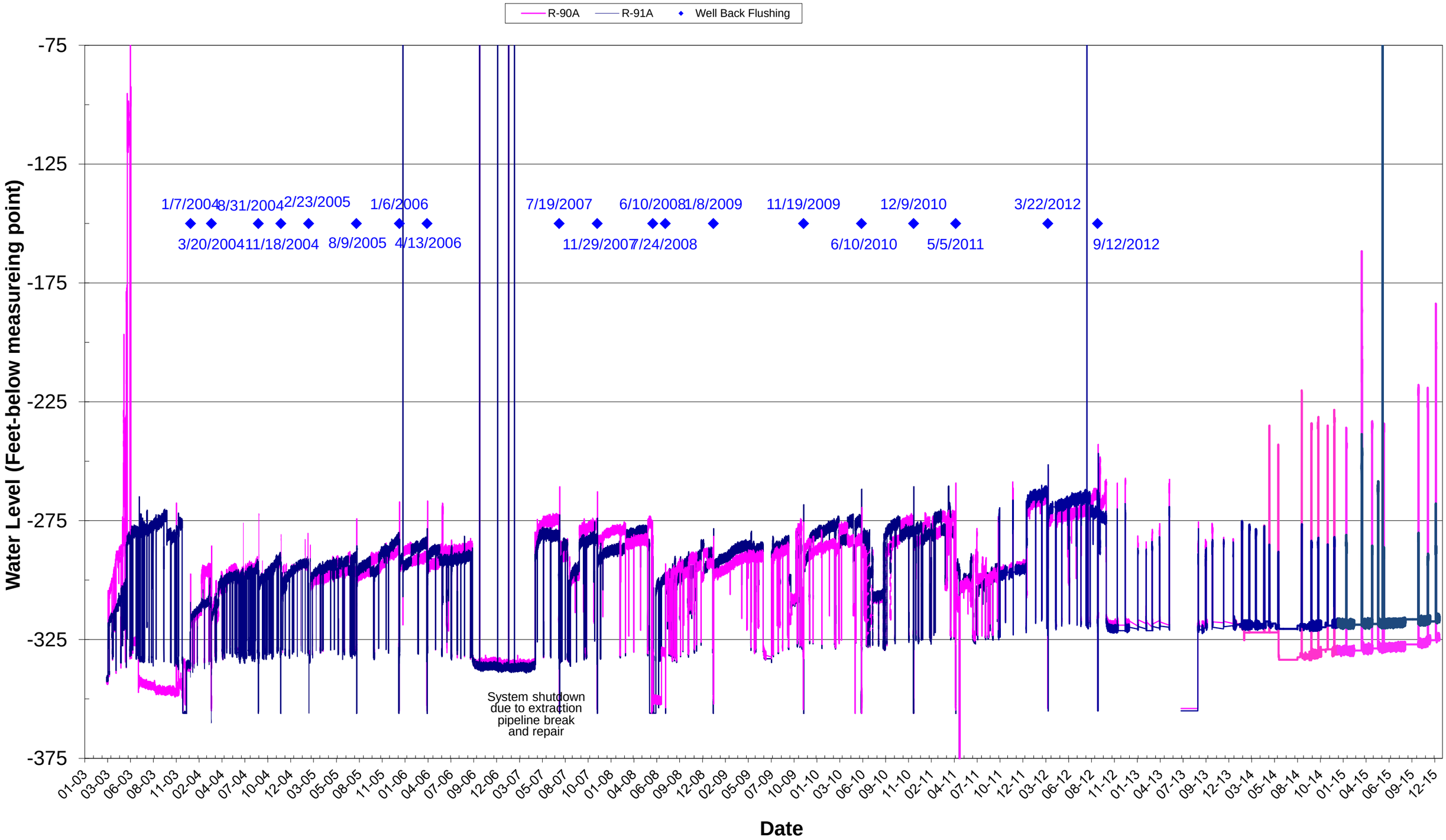


FIGURE 12. INJECTION WELL FLOW RATE (gpm) -- Startup Through December 31, 2015

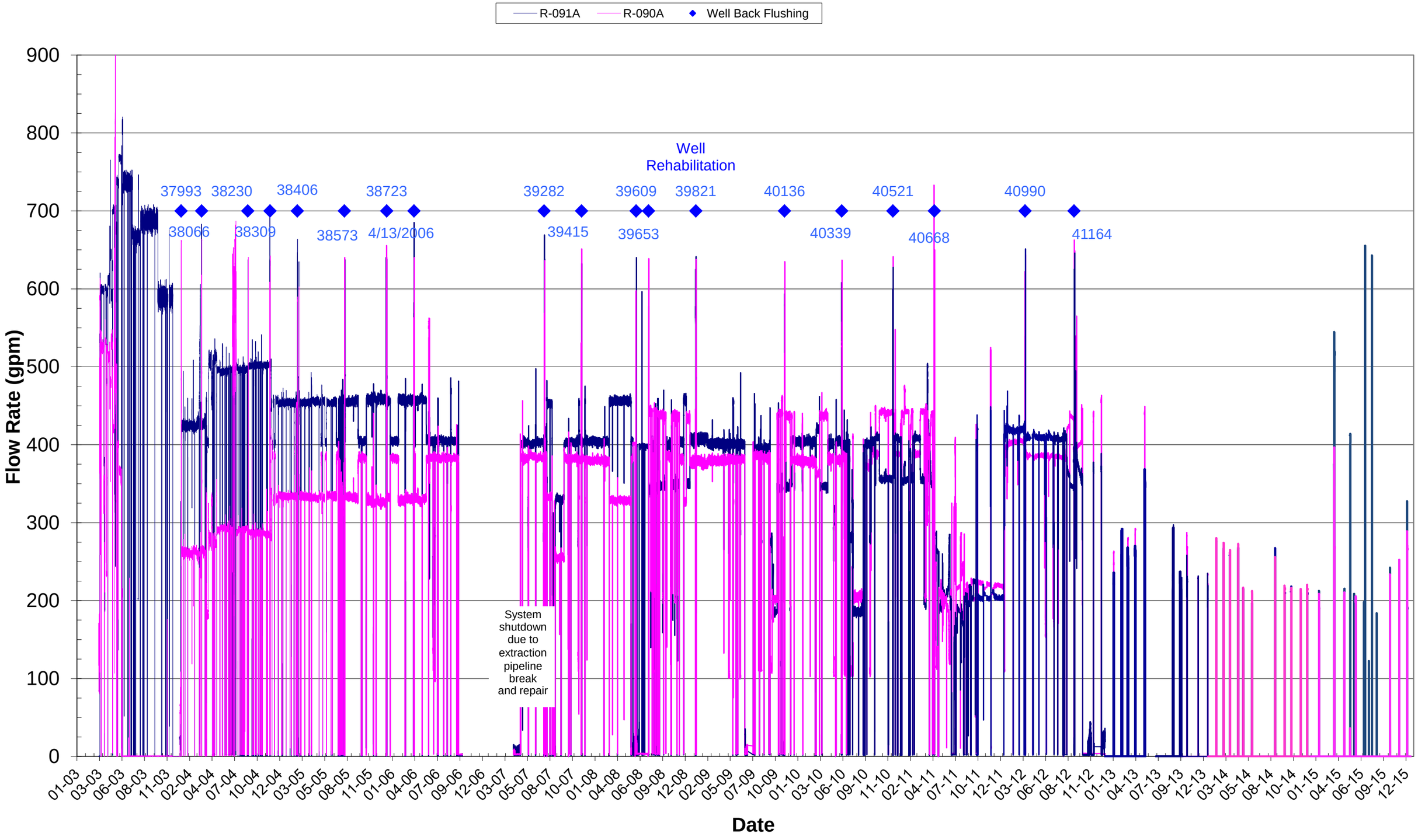


FIGURE 13. EXTRACTION WELL WATER LEVEL -- Startup Through December 31, 2015

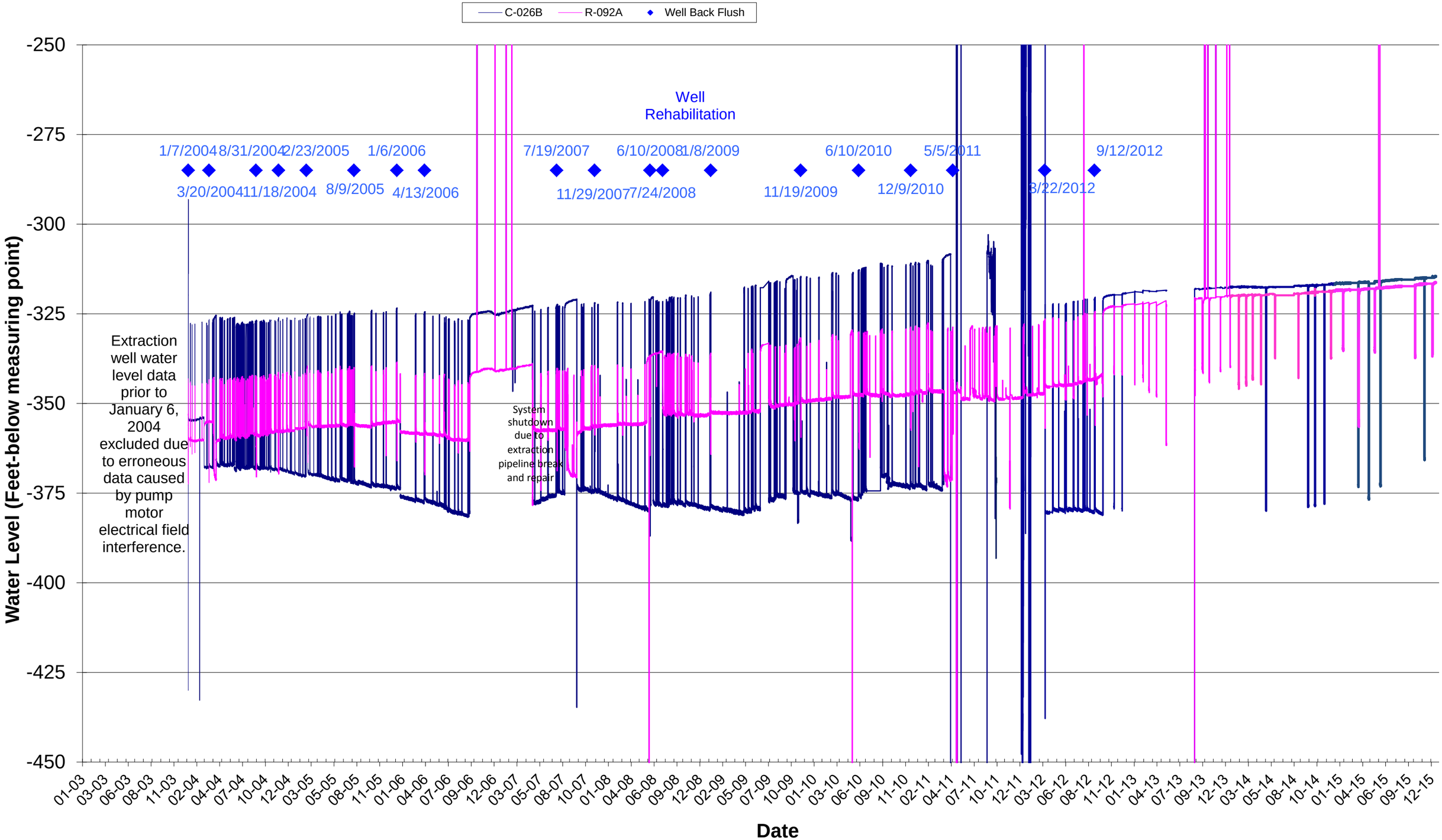
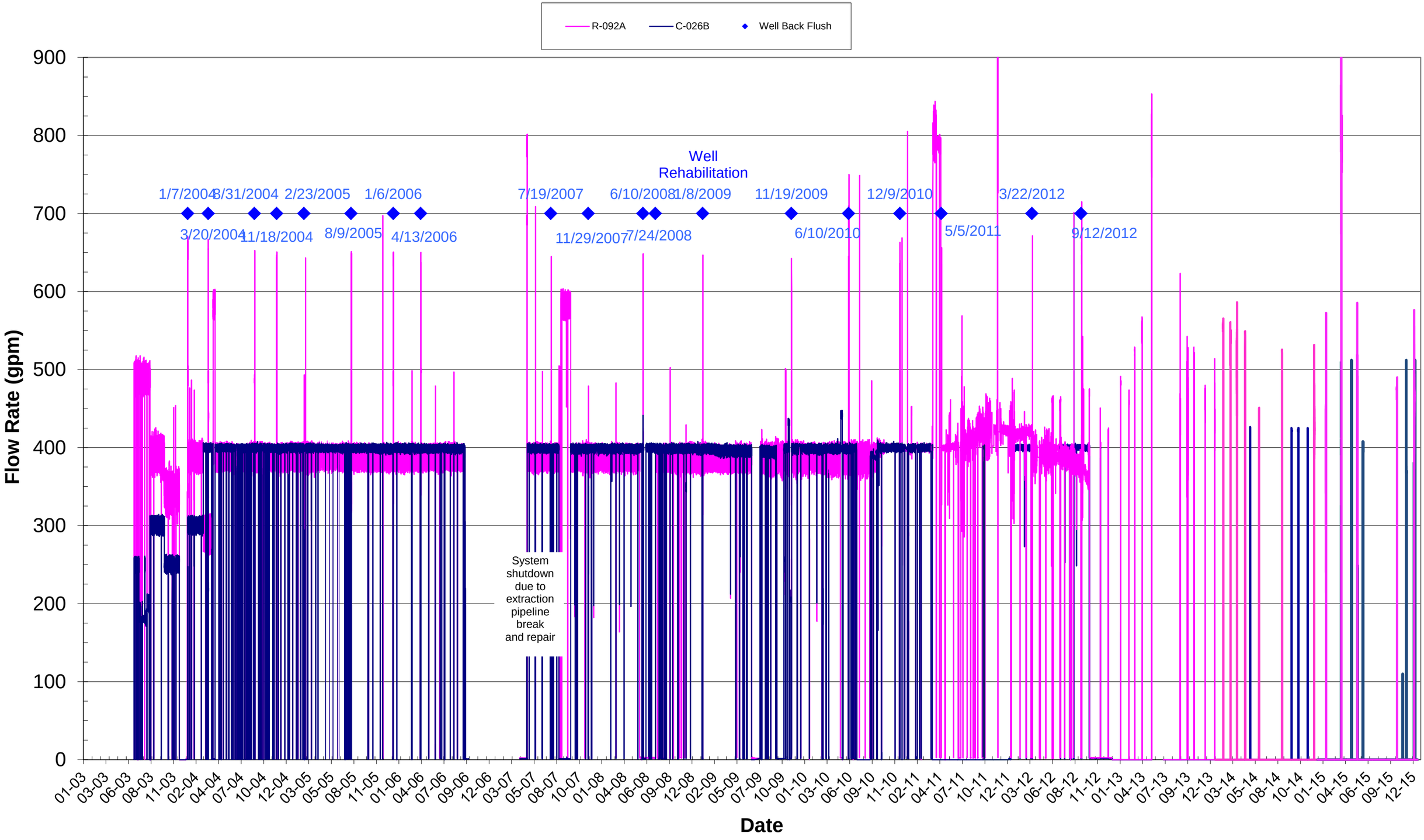


FIGURE 14. EXTRACTION WELL FLOW RATE (gpm) -- Startup Through December 31, 2015



CITY OF
TUCSON
TUCSON WATER
DEPARTMENT

April 21, 2015

SUBJECT: Data Report for Monitor Well R-092A

Enclosed are the results for Work Order L150386, received by the laboratory on 03/26/2015 12:14. If you have any question concerning this report, please feel free to contact me.

Thank You.

Sincerely,

Michael E. Dew
Tucson Water Quality Laboratory Manager

TUCSON WATER
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Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
R-092A	L150386-01	Aqueous	03/26/2015 08:15	03/26/2015 12:14
TRIP BLANK	L150386-02	Aqueous	03/26/2015 08:15	03/26/2015 12:14

Tucson Water Quality Laboratory

Michael E. Dew, Lab Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

R-092A

L150386-01 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1,2-TETRACHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,1-TRICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,2,2-TETRACHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,2-TRICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,3-TRICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,3-TRICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,4-TRICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,4-TRIMETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3,5-TRIMETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,4-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
2,2-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
2-CHLOROTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
4-CHLOROTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
4-ISOPROPYLTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

R-092A

L150386-01 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
BENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOCHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMODICHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOFORM	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CARBON TETRACHLORIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROFORM	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CIS-1,2-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CIS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DIBROMOCHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DIBROMOMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DICHLORODIFLUOROMETHANE	**0.0007**	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DICHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ETHYLENE DIBROMIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
HEXACHLOROBUTADIENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ISOPROPYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
M/P-XYLENES	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
METHYL-TERT-BUTYL ETHER	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	

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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

R-092A

L150386-01 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
NAPHTHALENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
N-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
N-PROPYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ORTHO-XYLENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
SEC-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
STYRENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TERT-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TETRACHLOROETHENE	**0.0014**	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TOTAL TRIHALOMETHANES	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRANS-1,2-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRANS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRICHLOROFLUOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
VINYL CHLORIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
XYLENES (TOTAL)	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
Surrogate: BROMOFLUOROBENZENE (SURR.)		*99 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	
Surrogate: DIBROMOFLUOROMETHANE (SURR.)		*99 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	
Surrogate: TOLUENE-D8 (SURR.)		*99 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	

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Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

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L150386-02 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1,2-TETRACHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,1-TRICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,2,2-TETRACHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1,2-TRICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,1-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,3-TRICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,3-TRICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,4-TRICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2,4-TRIMETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,2-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3,5-TRIMETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,3-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
1,4-DICHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
2,2-DICHLOROPROPANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
2-CHLOROTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
4-CHLOROTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
4-ISOPROPYLTOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

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L150386-02 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOCHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMODICHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOFORM	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
BROMOMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CARBON TETRACHLORIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROFORM	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CIS-1,2-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
CIS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DIBROMOCHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DIBROMOMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DICHLORODIFLUOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
DICHLOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ETHYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ETHYLENE DIBROMIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
HEXACHLOROBUTADIENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ISOPROPYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
M/P-XYLENES	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
METHYL-TERT-BUTYL ETHER	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	

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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

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L150386-02 (Aqueous)

Sampled: 03/26/2015 8:15

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
NAPHTHALENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
N-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
N-PROPYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
ORTHO-XYLENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
SEC-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
STYRENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TERT-BUTYLBENZENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TETRACHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TOLUENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TOTAL TRIHALOMETHANES	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRANS-1,2-DICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRANS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRICHLOROETHENE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
TRICHLOROFLUOROMETHANE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
VINYL CHLORIDE	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
XYLENES (TOTAL)	ND	0.0005	mg/L	1	BD50103	03/31/2015	03/31/2015	EPA 8260B	
Surrogate: BROMOFLUOROBENZENE (SURR.)		*98 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	
Surrogate: DIBROMOFLUOROMETHANE (SURR.)		*99 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	
Surrogate: TOLUENE-D8 (SURR.)		*99 %*		*70-130*	*BD50103*	*03/31/2015*	*03/31/2015*	*EPA 8260B*	

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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BD50103-BLK1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
1,1,1,2-TETRACHLOROETHANE	ND	0.0005	mg/L							
1,1,1-TRICHLOROETHANE	ND	0.0005	mg/L							
1,1,2,2-TETRACHLOROETHANE	ND	0.0005	mg/L							
1,1,2-TRICHLOROETHANE	ND	0.0005	mg/L							
1,1-DICHLOROETHANE	ND	0.0005	mg/L							
1,1-DICHLOROETHENE	ND	0.0005	mg/L							
1,1-DICHLOROPROPENE	ND	0.0005	mg/L							
1,2,3-TRICHLOROBENZENE	ND	0.0005	mg/L							
1,2,3-TRICHLOROPROPANE	ND	0.0005	mg/L							
1,2,4-TRICHLOROBENZENE	ND	0.0005	mg/L							
1,2,4-TRIMETHYLBENZENE	ND	0.0005	mg/L							
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0005	mg/L							
1,2-DICHLOROBENZENE	ND	0.0005	mg/L							
1,2-DICHLOROETHANE	ND	0.0005	mg/L							
1,2-DICHLOROPROPANE	ND	0.0005	mg/L							
1,3,5-TRIMETHYLBENZENE	ND	0.0005	mg/L							
1,3-DICHLOROBENZENE	ND	0.0005	mg/L							
1,3-DICHLOROPROPANE	ND	0.0005	mg/L							
1,4-DICHLOROBENZENE	ND	0.0005	mg/L							
2,2-DICHLOROPROPANE	ND	0.0005	mg/L							
2-CHLOROTOLUENE	ND	0.0005	mg/L							
4-CHLOROTOLUENE	ND	0.0005	mg/L							
4-ISOPROPYLTOLUENE	ND	0.0005	mg/L							
BENZENE	ND	0.0005	mg/L							
BROMOBENZENE	ND	0.0005	mg/L							

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BD50103-BLK1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
BROMOCHLOROMETHANE	ND	0.0005	mg/L							
BROMODICHLOROMETHANE	ND	0.0005	mg/L							
BROMOFORM	ND	0.0005	mg/L							
BROMOMETHANE	ND	0.0005	mg/L							
CARBON TETRACHLORIDE	ND	0.0005	mg/L							
CHLOROBENZENE	ND	0.0005	mg/L							
CHLOROETHANE	ND	0.0005	mg/L							
CHLOROFORM	ND	0.0005	mg/L							
CHLOROMETHANE	ND	0.0005	mg/L							
CIS-1,2-DICHLOROETHENE	ND	0.0005	mg/L							
CIS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L							
DIBROMOCHLOROMETHANE	ND	0.0005	mg/L							
DIBROMOMETHANE	ND	0.0005	mg/L							
DICHLORODIFLUOROMETHANE	ND	0.0005	mg/L							
DICHLOROMETHANE	ND	0.0005	mg/L							
ETHYLBENZENE	ND	0.0005	mg/L							
ETHYLENE DIBROMIDE	ND	0.0005	mg/L							
HEXACHLOROBUTADIENE	ND	0.0005	mg/L							
ISOPROPYLBENZENE	ND	0.0005	mg/L							
M/P-XYLENES	ND	0.0005	mg/L							
METHYL-TERT-BUTYL ETHER	ND	0.0005	mg/L							
NAPHTHALENE	ND	0.0005	mg/L							
N-BUTYLBENZENE	ND	0.0005	mg/L							
N-PROPYLBENZENE	ND	0.0005	mg/L							
ORTHO-XYLENE	ND	0.0005	mg/L							
SEC-BUTYLBENZENE	ND	0.0005	mg/L							

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Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BD50103-BLK1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
STYRENE	ND	0.0005	mg/L							
TERT-BUTYLBENZENE	ND	0.0005	mg/L							
TETRACHLOROETHENE	ND	0.0005	mg/L							
TOLUENE	ND	0.0005	mg/L							
TOTAL TRIHALOMETHANES	ND	0.0005	mg/L							
TRANS-1,2-DICHLOROETHENE	ND	0.0005	mg/L							
TRANS-1,3-DICHLOROPROPENE	ND	0.0005	mg/L							
TRICHLOROETHENE	ND	0.0005	mg/L							
TRICHLOROFLUOROMETHANE	ND	0.0005	mg/L							
VINYL CHLORIDE	ND	0.0005	mg/L							
XYLENES (TOTAL)	ND	0.0005	mg/L							
Surrogate: BROMOFLUOROBENZENE (SURR.)	*4.80*		ug/L	*5.00*		*96*	*70-130*			
Surrogate: DIBROMOFLUOROMETHANE (SURR.)	*4.84*		ug/L	*5.00*		*97*	*70-130*			
Surrogate: TOLUENE-D8 (SURR.)	*4.96*		ug/L	*5.00*		*99*	*70-130*			

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Environmental Services	Project: Broadway/Pantano	
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Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BD50103-MS1)		**Source: L150386-01**		Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
1,1,1,2-TETRACHLOROETHANE	5.06		ug/L	5.00	ND	101	70-130			
1,1,1-TRICHLOROETHANE	5.38		ug/L	5.00	ND	108	70-130			
1,1,2,2-TETRACHLOROETHANE	5.05		ug/L	5.00	ND	101	70-130			
1,1,2-TRICHLOROETHANE	5.14		ug/L	5.00	ND	103	70-130			
1,1-DICHLOROETHANE	5.61		ug/L	5.00	ND	112	70-130			
1,1-DICHLOROETHENE	6.09		ug/L	5.00	ND	122	70-130			
1,1-DICHLOROPROPENE	6.05		ug/L	5.00	ND	121	70-130			
1,2,3-TRICHLOROBENZENE	5.27		ug/L	5.00	ND	105	70-130			
1,2,3-TRICHLOROPROPANE	4.94		ug/L	5.00	ND	99	70-130			
1,2,4-TRICHLOROBENZENE	5.23		ug/L	5.00	ND	105	70-130			
1,2,4-TRIMETHYLBENZENE	5.34		ug/L	5.00	ND	107	70-130			
1,2-DIBROMO-3-CHLOROPROPANE	4.75		ug/L	5.00	ND	95	70-130			
1,2-DICHLOROBENZENE	5.19		ug/L	5.00	ND	104	70-130			
1,2-DICHLOROETHANE	5.21		ug/L	5.00	ND	104	70-130			
1,2-DICHLOROPROPANE	5.26		ug/L	5.00	ND	105	70-130			
1,3,5-TRIMETHYLBENZENE	5.26		ug/L	5.00	ND	105	70-130			
1,3-DICHLOROBENZENE	5.26		ug/L	5.00	ND	105	70-130			
1,3-DICHLOROPROPANE	5.07		ug/L	5.00	ND	101	70-130			
1,4-DICHLOROBENZENE	5.21		ug/L	5.00	ND	104	70-130			
2,2-DICHLOROPROPANE	5.62		ug/L	5.00	ND	112	70-130			
2-CHLOROTOLUENE	5.46		ug/L	5.00	ND	109	70-130			
4-CHLOROTOLUENE	5.17		ug/L	5.00	ND	103	70-130			
4-ISOPROPYLTOLUENE	5.47		ug/L	5.00	ND	109	70-130			
BENZENE	5.48		ug/L	5.00	ND	110	70-130			
BROMOBENZENE	5.16		ug/L	5.00	ND	103	70-130			

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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
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Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BD50103-MS1)	**Source: L150386-01**		Prepared & Analyzed: 03/31/2015							
Batch BD50103 - DEFAULT ORGANIC PREP										
BROMOCHLOROMETHANE	5.27		ug/L	5.00	ND	105	70-130			
BROMODICHLOROMETHANE	5.39		ug/L	5.00	ND	108	70-130			
BROMOFORM	5.49		ug/L	5.00	ND	110	70-130			
BROMOMETHANE	5.27		ug/L	5.00	ND	105	70-130			
CARBON TETRACHLORIDE	5.53		ug/L	5.00	ND	111	70-130			
CHLOROBENZENE	5.22		ug/L	5.00	ND	104	70-130			
CHLOROETHANE	5.72		ug/L	5.00	ND	114	70-130			
CHLOROFORM	5.43		ug/L	5.00	ND	109	70-130			
CHLOROMETHANE	4.53		ug/L	5.00	ND	91	70-130			
CIS-1,2-DICHLOROETHENE	5.54		ug/L	5.00	ND	111	70-130			
CIS-1,3-DICHLOROPROPENE	4.91		ug/L	5.00	ND	98	70-130			
DIBROMOCHLOROMETHANE	5.20		ug/L	5.00	ND	104	70-130			
DIBROMOMETHANE	5.22		ug/L	5.00	ND	104	70-130			
DICHLORODIFLUOROMETHANE	5.65		ug/L	5.00	0.680	99	70-130			
DICHLOROMETHANE	5.71		ug/L	5.00	ND	114	70-130			
ETHYLBENZENE	5.31		ug/L	5.00	ND	106	70-130			
ETHYLENE DIBROMIDE	5.23		ug/L	5.00	ND	105	70-130			
HEXACHLOROBUTADIENE	5.37		ug/L	5.00	ND	107	70-130			
ISOPROPYLBENZENE	5.43		ug/L	5.00	ND	109	70-130			
M/P-XYLENES	10.7		ug/L	10.0	ND	107	70-130			
METHYL-TERT-BUTYL ETHER	5.01		ug/L	5.00	ND	100	70-130			
NAPHTHALENE	5.31		ug/L	5.00	ND	106	70-130			
N-BUTYLBENZENE	5.49		ug/L	5.00	ND	110	70-130			
N-PROPYLBENZENE	5.54		ug/L	5.00	ND	111	70-130			
ORTHO-XYLENE	5.21		ug/L	5.00	ND	104	70-130			
SEC-BUTYLBENZENE	5.44		ug/L	5.00	ND	109	70-130			

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Environmental Services	Project: Broadway/Pantano	
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Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BD50103-MS1)	**Source: L150386-01**		Prepared & Analyzed: 03/31/2015							
Batch BD50103 - DEFAULT ORGANIC PREP										
STYRENE	5.21		ug/L	5.00	ND	104	70-130			
TERT-BUTYLBENZENE	5.27		ug/L	5.00	ND	105	70-130			
TETRACHLOROETHENE	6.93		ug/L	5.00	1.37	111	70-130			
TOLUENE	5.45		ug/L	5.00	ND	109	70-130			
TRANS-1,2-DICHLOROETHENE	5.89		ug/L	5.00	ND	118	70-130			
TRANS-1,3-DICHLOROPROPENE	5.18		ug/L	5.00	ND	104	70-130			
TRICHLOROETHENE	5.61		ug/L	5.00	ND	112	70-130			
TRICHLOROFLUOROMETHANE	6.28		ug/L	5.00	ND	126	70-130			
VINYL CHLORIDE	5.13		ug/L	5.00	ND	103	70-130			
Surrogate: BROMOFLUOROBENZENE (SURR.)	*5.03*		ug/L	*5.00*		*101*	*70-130*			
Surrogate: DIBROMOFLUOROMETHANE (SURR.)	*5.08*		ug/L	*5.00*		*102*	*70-130*			
Surrogate: TOLUENE-D8 (SURR.)	*4.99*		ug/L	*5.00*		*100*	*70-130*			

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Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BD50103-MSD1)	**Source: L150386-01**		Prepared & Analyzed: 03/31/2015							
Batch BD50103 - DEFAULT ORGANIC PREP										
1,1,1,2-TETRACHLOROETHANE	5.22		ug/L	5.00	ND	104	70-130	3	20	
1,1,1-TRICHLOROETHANE	5.46		ug/L	5.00	ND	109	70-130	1	20	
1,1,2,2-TETRACHLOROETHANE	4.97		ug/L	5.00	ND	99	70-130	2	20	
1,1,2-TRICHLOROETHANE	5.32		ug/L	5.00	ND	106	70-130	3	20	
1,1-DICHLOROETHANE	5.58		ug/L	5.00	ND	112	70-130	0.5	20	
1,1-DICHLOROETHENE	5.97		ug/L	5.00	ND	119	70-130	2	20	
1,1-DICHLOROPROPENE	5.98		ug/L	5.00	ND	120	70-130	1	20	
1,2,3-TRICHLOROBENZENE	5.05		ug/L	5.00	ND	101	70-130	4	20	
1,2,3-TRICHLOROPROPANE	4.89		ug/L	5.00	ND	98	70-130	1	20	
1,2,4-TRICHLOROBENZENE	5.23		ug/L	5.00	ND	105	70-130	0	20	
1,2,4-TRIMETHYLBENZENE	5.28		ug/L	5.00	ND	106	70-130	1	20	
1,2-DIBROMO-3-CHLOROPROPANE	4.77		ug/L	5.00	ND	95	70-130	0.4	20	
1,2-DICHLOROBENZENE	5.09		ug/L	5.00	ND	102	70-130	2	20	
1,2-DICHLOROETHANE	5.24		ug/L	5.00	ND	105	70-130	0.6	20	
1,2-DICHLOROPROPANE	5.21		ug/L	5.00	ND	104	70-130	1	20	
1,3,5-TRIMETHYLBENZENE	5.16		ug/L	5.00	ND	103	70-130	2	20	
1,3-DICHLOROBENZENE	5.21		ug/L	5.00	ND	104	70-130	1	20	
1,3-DICHLOROPROPANE	5.11		ug/L	5.00	ND	102	70-130	0.8	20	
1,4-DICHLOROBENZENE	5.13		ug/L	5.00	ND	103	70-130	2	20	
2,2-DICHLOROPROPANE	5.68		ug/L	5.00	ND	114	70-130	1	20	
2-CHLOROTOLUENE	5.21		ug/L	5.00	ND	104	70-130	5	20	
4-CHLOROTOLUENE	5.09		ug/L	5.00	ND	102	70-130	2	20	
4-ISOPROPYLTOLUENE	5.33		ug/L	5.00	ND	107	70-130	3	20	
BENZENE	5.44		ug/L	5.00	ND	109	70-130	0.7	20	
BROMOBENZENE	5.25		ug/L	5.00	ND	105	70-130	2	20	

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Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BD50103-MSD1)	**Source: L150386-01**		Prepared & Analyzed: 03/31/2015							
Batch BD50103 - DEFAULT ORGANIC PREP										
BROMOCHLOROMETHANE	5.36		ug/L	5.00	ND	107	70-130	2	20	
BROMODICHLOROMETHANE	5.30		ug/L	5.00	ND	106	70-130	2	20	
BROMOFORM	5.62		ug/L	5.00	ND	112	70-130	2	20	
BROMOMETHANE	5.14		ug/L	5.00	ND	103	70-130	2	20	
CARBON TETRACHLORIDE	5.38		ug/L	5.00	ND	108	70-130	3	20	
CHLOROBENZENE	5.16		ug/L	5.00	ND	103	70-130	1	20	
CHLOROETHANE	5.71		ug/L	5.00	ND	114	70-130	0.2	20	
CHLOROFORM	5.30		ug/L	5.00	ND	106	70-130	2	20	
CHLOROMETHANE	4.60		ug/L	5.00	ND	92	70-130	2	20	
CIS-1,2-DICHLOROETHENE	5.63		ug/L	5.00	ND	113	70-130	2	20	
CIS-1,3-DICHLOROPROPENE	4.81		ug/L	5.00	ND	96	70-130	2	20	
DIBROMOCHLOROMETHANE	5.15		ug/L	5.00	ND	103	70-130	1	20	
DIBROMOMETHANE	5.09		ug/L	5.00	ND	102	70-130	3	20	
DICHLORODIFLUOROMETHANE	5.41		ug/L	5.00	0.680	95	70-130	5	20	
DICHLOROMETHANE	5.60		ug/L	5.00	ND	112	70-130	2	20	
ETHYLBENZENE	5.25		ug/L	5.00	ND	105	70-130	1	20	
ETHYLENE DIBROMIDE	5.22		ug/L	5.00	ND	104	70-130	0.2	20	
HEXACHLOROBUTADIENE	5.21		ug/L	5.00	ND	104	70-130	3	20	
ISOPROPYLBENZENE	5.30		ug/L	5.00	ND	106	70-130	2	20	
M/P-XYLENES	10.2		ug/L	10.0	ND	102	70-130	5	20	
METHYL-TERT-BUTYL ETHER	5.06		ug/L	5.00	ND	101	70-130	1	20	
NAPHTHALENE	5.44		ug/L	5.00	ND	109	70-130	2	20	
N-BUTYLBENZENE	5.34		ug/L	5.00	ND	107	70-130	3	20	
N-PROPYLBENZENE	5.33		ug/L	5.00	ND	107	70-130	4	20	
ORTHO-XYLENE	5.05		ug/L	5.00	ND	101	70-130	3	20	
SEC-BUTYLBENZENE	5.39		ug/L	5.00	ND	108	70-130	0.9	20	

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Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BD50103-MSD1)	**Source: L150386-01**		Prepared & Analyzed: 03/31/2015							
Batch BD50103 - DEFAULT ORGANIC PREP										
STYRENE	5.15		ug/L	5.00	ND	103	70-130	1	20	
TERT-BUTYLBENZENE	5.15		ug/L	5.00	ND	103	70-130	2	20	
TETRACHLOROETHENE	6.84		ug/L	5.00	1.37	109	70-130	2	20	
TOLUENE	5.31		ug/L	5.00	ND	106	70-130	3	20	
TRANS-1,2-DICHLOROETHENE	5.82		ug/L	5.00	ND	116	70-130	1	20	
TRANS-1,3-DICHLOROPROPENE	5.11		ug/L	5.00	ND	102	70-130	1	20	
TRICHLOROETHENE	5.54		ug/L	5.00	ND	111	70-130	1	20	
TRICHLOROFLUOROMETHANE	6.08		ug/L	5.00	ND	122	70-130	3	20	
VINYL CHLORIDE	4.95		ug/L	5.00	ND	99	70-130	4	20	
Surrogate: BROMOFLUOROBENZENE (SURR.)	*5.06*		ug/L	*5.00*		*101*	*70-130*			
Surrogate: DIBROMOFLUOROMETHANE (SURR.)	*5.04*		ug/L	*5.00*		*101*	*70-130*			
Surrogate: TOLUENE-D8 (SURR.)	*5.03*		ug/L	*5.00*		*101*	*70-130*			

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Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BD50103-SRM1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
1,1,1,2-TETRACHLOROETHANE	5.19		ug/L	5.00		104	70-130			
1,1,1-TRICHLOROETHANE	5.11		ug/L	5.00		102	70-130			
1,1,2,2-TETRACHLOROETHANE	5.19		ug/L	5.00		104	70-130			
1,1,2-TRICHLOROETHANE	5.19		ug/L	5.00		104	70-130			
1,1-DICHLOROETHANE	5.34		ug/L	5.00		107	70-130			
1,1-DICHLOROETHENE	5.59		ug/L	5.00		112	70-130			
1,1-DICHLOROPROPENE	5.61		ug/L	5.00		112	70-130			
1,2,3-TRICHLOROBENZENE	5.32		ug/L	5.00		106	70-130			
1,2,3-TRICHLOROPROPANE	5.18		ug/L	5.00		104	70-130			
1,2,4-TRICHLOROBENZENE	5.32		ug/L	5.00		106	70-130			
1,2,4-TRIMETHYLBENZENE	5.33		ug/L	5.00		107	70-130			
1,2-DIBROMO-3-CHLOROPROPANE	5.01		ug/L	5.00		100	70-130			
1,2-DICHLOROBENZENE	5.15		ug/L	5.00		103	70-130			
1,2-DICHLOROETHANE	5.16		ug/L	5.00		103	70-130			
1,2-DICHLOROPROPANE	5.18		ug/L	5.00		104	70-130			
1,3,5-TRIMETHYLBENZENE	5.20		ug/L	5.00		104	70-130			
1,3-DICHLOROBENZENE	5.26		ug/L	5.00		105	70-130			
1,3-DICHLOROPROPANE	5.13		ug/L	5.00		103	70-130			
1,4-DICHLOROBENZENE	5.26		ug/L	5.00		105	70-130			
2,2-DICHLOROPROPANE	5.56		ug/L	5.00		111	70-130			
2-CHLOROTOLUENE	5.26		ug/L	5.00		105	70-130			
4-CHLOROTOLUENE	5.24		ug/L	5.00		105	70-130			
4-ISOPROPYLTOLUENE	5.44		ug/L	5.00		109	70-130			
BENZENE	5.26		ug/L	5.00		105	70-130			
BROMOBENZENE	5.21		ug/L	5.00		104	70-130			

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BD50103-SRM1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
BROMOCHLOROMETHANE	5.31		ug/L	5.00		106	70-130			
BROMODICHLOROMETHANE	5.23		ug/L	5.00		105	70-130			
BROMOFORM	5.70		ug/L	5.00		114	70-130			
BROMOMETHANE	5.14		ug/L	5.00		103	70-130			
CARBON TETRACHLORIDE	5.12		ug/L	5.00		102	70-130			
CHLOROBENZENE	5.17		ug/L	5.00		103	70-130			
CHLOROETHANE	5.42		ug/L	5.00		108	70-130			
CHLOROFORM	5.12		ug/L	5.00		102	70-130			
CHLOROMETHANE	4.39		ug/L	5.00		88	70-130			
CIS-1,2-DICHLOROETHENE	5.14		ug/L	5.00		103	70-130			
CIS-1,3-DICHLOROPROPENE	4.87		ug/L	5.00		97	70-130			
DIBROMOCHLOROMETHANE	5.16		ug/L	5.00		103	70-130			
DIBROMOMETHANE	5.28		ug/L	5.00		106	70-130			
DICHLORODIFLUOROMETHANE	4.66		ug/L	5.00		93	70-130			
DICHLOROMETHANE	5.45		ug/L	5.00		109	70-130			
ETHYLBENZENE	5.22		ug/L	5.00		104	70-130			
ETHYLENE DIBROMIDE	5.26		ug/L	5.00		105	70-130			
HEXACHLOROBUTADIENE	5.34		ug/L	5.00		107	70-130			
ISOPROPYLBENZENE	5.21		ug/L	5.00		104	70-130			
M/P-XYLENES	10.4		ug/L	10.0		104	70-130			
METHYL-TERT-BUTYL ETHER	5.21		ug/L	5.00		104	70-130			
NAPHTHALENE	5.54		ug/L	5.00		111	70-130			
N-BUTYLBENZENE	5.36		ug/L	5.00		107	70-130			
N-PROPYLBENZENE	5.29		ug/L	5.00		106	70-130			
ORTHO-XYLENE	5.11		ug/L	5.00		102	70-130			
SEC-BUTYLBENZENE	5.31		ug/L	5.00		106	70-130			

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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Volatile Organic Compounds by GC/MS - Quality Control

Tucson Water Quality Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BD50103-SRM1)				Prepared & Analyzed: 03/31/2015						
Batch BD50103 - DEFAULT ORGANIC PREP										
STYRENE	5.26		ug/L	5.00		105	70-130			
TERT-BUTYLBENZENE	5.12		ug/L	5.00		102	70-130			
TETRACHLOROETHENE	5.41		ug/L	5.00		108	70-130			
TOLUENE	5.24		ug/L	5.00		105	70-130			
TRANS-1,2-DICHLOROETHENE	5.57		ug/L	5.00		111	70-130			
TRANS-1,3-DICHLOROPROPENE	5.17		ug/L	5.00		103	70-130			
TRICHLOROETHENE	5.10		ug/L	5.00		102	70-130			
TRICHLOROFLUOROMETHANE	5.83		ug/L	5.00		117	70-130			
VINYL CHLORIDE	4.74		ug/L	5.00		95	70-130			
Surrogate: BROMOFLUOROBENZENE (SURR.)	*5.00*		ug/L	*5.00*		*100*	*70-130*			
Surrogate: DIBROMOFLUOROMETHANE (SURR.)	*5.00*		ug/L	*5.00*		*100*	*70-130*			
Surrogate: TOLUENE-D8 (SURR.)	*4.93*		ug/L	*5.00*		*99*	*70-130*			

Tucson Water Quality Lab
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Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Certified Analyses included in this Report

Analyte	Certifications

Code	Description	Number	Expires

Tucson Water Quality Lab
4401 S. Tucson Estates Pkwy.
Tucson, AZ 85735
(520) 837-2455

Environmental Services	Project: Broadway/Pantano	
-	Project Number: P01154	**Reported:**
Tucson AZ, 85726	Project Manager: Lori Ehman	04/10/2015 14:26

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception

TUCSON WATER CHAIN OF CUSTODY

LOGIN ID: L150386

CLIENT: ES

PROJECT NAME/FREQUENCY: Broadway/Pantano

PROJECT #: P01154

SAMPLING DATE: 03/26/2015

SAMPLED BY:

print full name: GERALD S. HUERSTEL III

signature:

SAMPLE #	TIME	LOCATION	SITE	NUMBER OF CONTAINERS	ICP	ICP	ICP	ICP	ICP	GF	8260	COMMENTS
PRESERVATIVE					(HNO3)						(HCl/Ascorbic Acid)	
-01	0815	R-092A	WELL	4							X	TB# 3-26-15 02
~~-02~~	BW 3-26-15 0915			~~4~~							~~X~~	~~TB#~~
~~-03~~ -02	0815	Trip Blank	TWQL	2							X	LOT # 02915

PRESERVATIVE / NUMBER OF CONTAINERS:

(Na2S2O3)	(Unpreserved)	(HNO3)	(H2SO4)	(NaS2O3/H2SO4)	(Unpreserved)	(NaS2O3/H2SO4)	(H2SO4)	(HCl/Ascorbic Acid)	(Ascorbic Acid)	(Na2S2O3)	(Unpreserved)	(H2SO4)	(NaOH)	(NaOH/Zinc Acetate)
										MWHL	MWHL MWHL MWHL MWHL MWHL MWHL MWHL MWHL	MWHL MWHL	MWHL	MWHL

COMMENTS: C-026B NOT PUMPING - UNABLE TO SAMPLE TODAY (GSH) 03/26/15 0910

SPECIAL TURNAROUND TIME:

	SIGNATURE	DATE/TIME		SIGNATURE	DATE/TIME
RELINQUISHED BY:		03/26/15 / 0910	RECEIVED BY:		3/26/15 / 0910
RELINQUISHED BY:		3/26/15 1214	RECEIVED BY:		3-26-15 1214
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		

PWL = 355.51 TEMP 26.1°C | pH = 7.68 | EC = 343.0 / ntu = 0.85

RECEIVING TEMPERATURE= 1.4 °

amec foster wheeler

Table 6 Summary of Groundwater Quality Data, Select VOCs, January - March 2015, Broadway-Pantano WQARF Site

WELL	DATE	Sample Depth (bwt)	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Benzene	cis 1,2 Dichloroethene	Methylene Chloride	trans 1,2 Dichloroethene	Dichlorodiflouromethane
			µg/L							
BP-01	2/24/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-02	2/19/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
BP-03	2/19/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	0.53
BP-04	2/19/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
BP-05	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
BP-07	2/23/2015	5	3.10	0.76	<0.50	<0.50	0.43 J	<1.00	<0.50	0.92
	2/23/2015	25	4.00	0.87	<0.50	<0.50	0.37 J	<1.00	<0.50	0.92
	2/23/2015	50	0.29 J	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.62
BP-08	2/23/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-09	2/25/2015	25	0.74	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-10	2/25/2015	25	**9.40**	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	3.10
BP-11	2/25/2015	82	0.39 J	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.76
BP-15	2/23/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-16	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
BP-19	2/23/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-20	2/24/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
	2/24/2015	50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-21	2/19/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	0.87
BP-22	2/25/2015	25	4.30	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	4.10
BP-23	2/25/2015	25	**40.00**	**5.80**	<0.50	0.38 J	1.10	<1.00	<0.50	5.40
BP-24A	2/26/2015	15	3.60	1.90	<0.50	<0.50	<0.50	<1.00	<0.50	1.20
BP-24B	2/23/2015	81	**14.00**	2.10	<0.50	<0.50	1.00	<1.00	<0.50	6.00
BP-24C	2/23/2015	136	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
BP-25	2/25/2015	25	3.20	1.30	<0.50	<0.50	1.70	<1.00	<0.50	<0.50
C-020B	2/23/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
C-022A	3/2/2015	25	**17.00**	3.10	<0.50	<0.50	0.39 J	<1.00	<0.50	5.50
C-025B	2/23/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
C-026A	3/3/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	50	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
MCL/AWQS			**5**	**5**	**2**	**5**	**70**	**5**	**100**	**N/A**

Table 6 Summary of Groundwater Quality Data, Select VOCs, January - March 2015, Broadway-Pantano WQARF Site

WELL	DATE	Sample Depth (bwt)	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Benzene	cis 1,2 Dichloroethene	Methylene Chloride	trans 1,2 Dichloroethene	Dichlorodifluoromethane
			µg/L							
C-026A	3/3/2015	75	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	100	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
C-026A-D	3/3/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	50	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	75	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	100	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
C-048A	1/12/2015	18	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
	3/2/2015	24	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
C-058A	3/2/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.55
C-114A	2/23/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
C-125A	3/2/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
CVA	1/12/2015	24	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
	2/24/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
D-018A	2/24/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
	2/24/2015	WH	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
D-021A	3/2/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
D-022A	3/2/2015	22	**38.00**	**11.00**	<0.50	0.82	6.90	<1.00	<0.50	3.90
D-039A	3/2/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
D-040A	3/2/2015	107	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
R-068A	1/13/2015	25	**29.00**	**9.50**	<0.50	<0.50	15.00	<1.00	<0.50	0.70
	2/9/2015	25	**24.00**	**5.70**	<0.50	<0.50	10.00	<1.00	<0.50	<0.50
	2/26/2015	25	**25.40**	**9.50**	<0.50	<1.00	14.80	<5.00	<0.50	0.68
	2/26/2015	25	**24.00**	**9.70**	<0.50	0.15 J	17.00	<1.00	<0.50	0.75
R-069B	2/26/2015	25	2.50	2.00	<0.50	<0.50	0.64	<1.00	<0.50	0.43 J
R-069B-D	2/26/2015	25	2.50	2.20	<0.50	<0.50	0.85	<1.00	<0.50	<0.50
R-090A	3/3/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	50	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	75	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	100	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
MCL/AWQS			**5**	**5**	**2**	**5**	**70**	**5**	**100**	**N/A**

Table 6 Summary of Groundwater Quality Data, Select VOCs, January - March 2015, Broadway-Pantano WQARF Site

WELL	DATE	Sample Depth (bwt)	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Benzene	cis 1,2 Dichloroethene	Methylene Chloride	trans 1,2 Dichloroethene	Dichlorodifluoromethane
			µg/L							
R-092A	3/3/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	50	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	75	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
	3/3/2015	100	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
R-124A	2/24/2015	WH	1.30	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	1.70
R-125A	2/24/2015	WH	0.2 J	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
SE-001	2/24/2015	24	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.41 J
SJ-001	2/19/2015	25	3.80	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	0.97
SJ-002	2/18/2015	25	**7.10**	1.10	<0.50	<1.00	<0.50	<5.00	<0.50	0.93
WR-177A	2/26/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
WR-177A-D	2/26/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
WR-178A	2/18/2015	25	2.70	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-179A	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-180A	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-181A	2/25/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
WR-207B	2/23/2015	25	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.39 J
WR-273A	1/13/2015	25	4.60	2.40	<0.50	<0.50	1.40	<1.00	<0.50	1.10
	2/4/2015	25	3.90	1.80	<0.50	<0.50	1.10	<1.00	<0.50	1.00
	2/26/2015	25	4.50	2.60	<0.50	<0.50	1.40	<1.00	<0.50	1.10
WR-274A	1/13/2015	5	**110.00**	**32.00**	<0.50	0.16 J	34.00	<1.00	<0.50	4.50
	1/13/2015	15	**100.00**	**32.00**	<0.50	0.25 J	33.00	<1.00	<0.50	4.20
	1/13/2015	25	**110.00**	**35.00**	<0.50	0.29 J	36.00	<1.00	<0.50	4.50
	2/5/2015	25	**83.00**	**23.00**	<0.50	0.27 J	30.00	<1.00	<0.50	4.80
	2/26/2015	5	**120.00**	**34.00**	<0.50	0.27 J	36.00	<1.00	<0.50	5.70
	2/26/2015	15	**100.00**	**32.00**	<0.50	0.32 J	36.00	<1.00	<0.50	4.80
	2/26/2015	25	**110.00**	**32.00**	<0.50	0.36 J	36.00	<1.00	<0.50	4.70
WR-274A-D	2/26/2015	15	**120.00**	**35.00**	<0.50	0.3 J	38.00	<1.00	<0.50	5.60
WR-275A	2/26/2015	25	0.57	<0.50	<0.50	<0.50	0.81	<1.00	<0.50	<0.50
WR-352A*	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
MCL/AWQS			**5**	**5**	**2**	**5**	**70**	**5**	**100**	**N/A**

Table 6 Summary of Groundwater Quality Data, Select VOCs, January - March 2015, Broadway-Pantano WQARF Site

WELL	DATE	Sample Depth (bwt)	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Benzene	cis 1,2 Dichloroethene	Methylene Chloride	trans 1,2 Dichloroethene	Dichlorodifluoromethane
			µg/L							
WR-353A	2/26/2015	131	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
WR-353A-D	2/26/2015	131	<0.50	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	<0.50
WR-354A	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-354A-D	2/18/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-358A	2/25/2015	25	**29.00**	**9.30**	<0.50	0.22 J	6.60	<1.00	<0.50	23.00
WR-367A	1/12/2015	5	**10.00**	0.41 J	<0.50	<0.50	<0.50	<1.00	<0.50	1.70
	1/12/2015	25	**9.70**	0.47 J	<0.50	<0.50	<0.50	<1.00	<0.50	1.90
	2/5/2015	25	**7.40**	0.41 J	<0.50	<0.50	<0.50	<1.00	<0.50	2.00
	2/25/2015	25	**9.70**	0.43 J	<0.50	<0.50	<0.50	<1.00	<0.50	1.70
WR-367A-D	2/25/2015	25	**10.00**	0.61	<0.50	<0.50	<0.50	<1.00	<0.50	2.10
WR-435A	2/25/2015	25	4.20	<0.50	<0.50	<0.50	<0.50	<1.00	<0.50	0.99
WR-702A	2/19/2015	25	2.10	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	1.30
WR-703A	2/19/2015	25	<0.50	<0.50	<0.50	<1.00	<0.50	<5.00	<0.50	<0.50
WR-704A	2/19/2015	25	**7.10**	0.60	<0.50	<1.00	<0.50	<5.00	<0.50	3.50
MCL/AWQS			**5**	**5**	**2**	**5**	**70**	**5**	**100**	**N/A**

NOTE:
- = data not applicable or available
* - sample collected outside of screened interval
µg/L - micrograms per liter
bwt - below water table
-Grey text indicates result was less than the reporting limit
-Bold values exceed the compounds Maximum Contaminant Level (MCL) (40 CFR Parts 141 and 142)/Arizona Aquifer Water Quality Standards (AWQS) (AAC Title R18-11)
-Samples collected between 2/5/2015 and 2/9/2015 were collected using a hydrasleeve sampler

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-45186-1
Client Project/Site: Broadway Pantano
Revision: 1

For:
City of Tucson
Environmental Services
PO BOX 27210
Tucson, Arizona 85726-7210

Attn: Lori Ehman

Authorized for release by:
5/28/2015 3:45:33 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

Table of Contents

Definitions/Glossary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.
V1	CCV recovery was above method acceptance limits. The analyte was not detected in the sample.

Glossary

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

Case Narrative

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Job ID: 550-45186-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-45186-1

Comments
No additional comments.

Receipt
The samples were received on 5/21/2015 10:58 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.9º C and 3.4º C.

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

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

REVISION 1 - 5/28/2015
Report revised to include the Low Level reporting limits for method 8260 per client request.

Sample Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-45186-1	R-92A-052015	Water	05/20/15 09:15	05/21/15 10:58
550-45186-2	R-92A-052115	Water	05/21/15 09:15	05/21/15 10:58
550-45186-3	TB	Water	05/20/15 00:00	05/21/15 10:58

Detection Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Client Sample ID: R-92A-052015 — Lab Sample ID: 550-45186-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.0013		0.00050	mg/L	1		8260B	Total/NA

Client Sample ID: R-92A-052115 — Lab Sample ID: 550-45186-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.0013		0.00050	mg/L	1		8260B	Total/NA

Client Sample ID: TB — Lab Sample ID: 550-45186-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: R-92A-052015
Date Collected: 05/20/15 09:15
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,1,1-Trichloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,1,2,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,1,2-Trichloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,1-Dichloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,1-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:10	1
1,1-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:10	1
1,2,3-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 18:10	1
1,2,3-Trichloropropane	ND		0.0020	mg/L			05/27/15 18:10	1
1,2,4-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 18:10	1
1,2,4-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
1,2-Dibromo-3-Chloropropane	ND		0.0050	mg/L			05/27/15 18:10	1
1,2-Dibromoethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,2-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:10	1
1,2-Dichloroethane	ND		0.00050	mg/L			05/27/15 18:10	1
1,2-Dichloropropane	ND		0.00050	mg/L			05/27/15 18:10	1
1,3,5-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
1,3-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:10	1
1,3-Dichloropropane	ND		0.00050	mg/L			05/27/15 18:10	1
1,4-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:10	1
2,2-Dichloropropane	ND		0.0010	mg/L			05/27/15 18:10	1
2-Butanone (MEK)	ND		0.0050	mg/L			05/27/15 18:10	1
2-Chlorotoluene	ND		0.00050	mg/L			05/27/15 18:10	1
2-Hexanone	ND	L5	0.0050	mg/L			05/27/15 18:10	1
4-Chlorotoluene	ND		0.00050	mg/L			05/27/15 18:10	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025	mg/L			05/27/15 18:10	1
Acetone	ND	L5 V1	0.010	mg/L			05/27/15 18:10	1
Benzene	ND		0.00050	mg/L			05/27/15 18:10	1
Bromobenzene	ND		0.00050	mg/L			05/27/15 18:10	1
Bromochloromethane	ND		0.00050	mg/L			05/27/15 18:10	1
Bromodichloromethane	ND		0.00050	mg/L			05/27/15 18:10	1
Bromoform	ND		0.0010	mg/L			05/27/15 18:10	1
Bromomethane	ND		0.0010	mg/L			05/27/15 18:10	1
Carbon disulfide	ND		0.0010	mg/L			05/27/15 18:10	1
Carbon tetrachloride	ND		0.00050	mg/L			05/27/15 18:10	1
Chlorobenzene	ND		0.00050	mg/L			05/27/15 18:10	1
Chloroethane	ND		0.0010	mg/L			05/27/15 18:10	1
Chloroform	ND		0.00050	mg/L			05/27/15 18:10	1
Chloromethane	ND		0.0010	mg/L			05/27/15 18:10	1
cis-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:10	1
cis-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:10	1
Chlorodibromomethane	ND		0.00050	mg/L			05/27/15 18:10	1
Dibromomethane	ND		0.00050	mg/L			05/27/15 18:10	1
Dichlorodifluoromethane	ND		0.00050	mg/L			05/27/15 18:10	1
Ethylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
Hexachlorobutadiene	ND		0.0010	mg/L			05/27/15 18:10	1
Iodomethane	ND		0.0025	mg/L			05/27/15 18:10	1
Isopropylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
m,p-Xylenes	ND		0.0010	mg/L			05/27/15 18:10	1

Client Sample ID: R-92A-052015

Lab Sample ID: 550-45186-1

Date Collected: 05/20/15 09:15

Matrix: Water

Date Received: 05/21/15 10:58

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		0.0010	mg/L			05/27/15 18:10	1
Methyl tert-butyl ether	ND		0.00050	mg/L			05/27/15 18:10	1
Naphthalene	ND		0.0025	mg/L			05/27/15 18:10	1
n-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
N-Propylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
o-Xylene	ND		0.00050	mg/L			05/27/15 18:10	1
p-Isopropyltoluene	ND		0.00050	mg/L			05/27/15 18:10	1
sec-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
Styrene	ND		0.00050	mg/L			05/27/15 18:10	1
tert-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:10	1
Tetrachloroethene	**0.0013**		0.00050	mg/L			05/27/15 18:10	1
Toluene	ND		0.00050	mg/L			05/27/15 18:10	1
trans-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:10	1
trans-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:10	1
Trichloroethene	ND		0.00050	mg/L			05/27/15 18:10	1
Trichlorofluoromethane	ND		0.00050	mg/L			05/27/15 18:10	1
Vinyl acetate	ND		0.0020	mg/L			05/27/15 18:10	1
Vinyl chloride	ND		0.00050	mg/L			05/27/15 18:10	1
Xylenes, Total	ND		0.0015	mg/L			05/27/15 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*05/27/15 18:10*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/27/15 18:10*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*05/27/15 18:10*	*1*

Client Sample ID: R-92A-052115

Lab Sample ID: 550-45186-2

Date Collected: 05/21/15 09:15

Matrix: Water

Date Received: 05/21/15 10:58

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,1,1-Trichloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,1,2,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,1,2-Trichloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,1-Dichloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,1-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:41	1
1,1-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:41	1
1,2,3-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 18:41	1
1,2,3-Trichloropropane	ND		0.0020	mg/L			05/27/15 18:41	1
1,2,4-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 18:41	1
1,2,4-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
1,2-Dibromo-3-Chloropropane	ND		0.0050	mg/L			05/27/15 18:41	1
1,2-Dibromoethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,2-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:41	1
1,2-Dichloroethane	ND		0.00050	mg/L			05/27/15 18:41	1
1,2-Dichloropropane	ND		0.00050	mg/L			05/27/15 18:41	1
1,3,5-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
1,3-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:41	1
1,3-Dichloropropane	ND		0.00050	mg/L			05/27/15 18:41	1

Client Sample ID: R-92A-052115
Date Collected: 05/21/15 09:15
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 18:41	1
2,2-Dichloropropane	ND		0.0010	mg/L			05/27/15 18:41	1
2-Butanone (MEK)	ND		0.0050	mg/L			05/27/15 18:41	1
2-Chlorotoluene	ND		0.00050	mg/L			05/27/15 18:41	1
2-Hexanone	ND	L5	0.0050	mg/L			05/27/15 18:41	1
4-Chlorotoluene	ND		0.00050	mg/L			05/27/15 18:41	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025	mg/L			05/27/15 18:41	1
Acetone	ND	L5 V1	0.010	mg/L			05/27/15 18:41	1
Benzene	ND		0.00050	mg/L			05/27/15 18:41	1
Bromobenzene	ND		0.00050	mg/L			05/27/15 18:41	1
Bromochloromethane	ND		0.00050	mg/L			05/27/15 18:41	1
Bromodichloromethane	ND		0.00050	mg/L			05/27/15 18:41	1
Bromoform	ND		0.0010	mg/L			05/27/15 18:41	1
Bromomethane	ND		0.0010	mg/L			05/27/15 18:41	1
Carbon disulfide	ND		0.0010	mg/L			05/27/15 18:41	1
Carbon tetrachloride	ND		0.00050	mg/L			05/27/15 18:41	1
Chlorobenzene	ND		0.00050	mg/L			05/27/15 18:41	1
Chloroethane	ND		0.0010	mg/L			05/27/15 18:41	1
Chloroform	ND		0.00050	mg/L			05/27/15 18:41	1
Chloromethane	ND		0.0010	mg/L			05/27/15 18:41	1
cis-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:41	1
cis-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:41	1
Chlorodibromomethane	ND		0.00050	mg/L			05/27/15 18:41	1
Dibromomethane	ND		0.00050	mg/L			05/27/15 18:41	1
Dichlorodifluoromethane	ND		0.00050	mg/L			05/27/15 18:41	1
Ethylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
Hexachlorobutadiene	ND		0.0010	mg/L			05/27/15 18:41	1
Iodomethane	ND		0.0025	mg/L			05/27/15 18:41	1
Isopropylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
m,p-Xylenes	ND		0.0010	mg/L			05/27/15 18:41	1
Methylene Chloride	ND		0.0010	mg/L			05/27/15 18:41	1
Methyl tert-butyl ether	ND		0.00050	mg/L			05/27/15 18:41	1
Naphthalene	ND		0.0025	mg/L			05/27/15 18:41	1
n-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
N-Propylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
o-Xylene	ND		0.00050	mg/L			05/27/15 18:41	1
p-Isopropyltoluene	ND		0.00050	mg/L			05/27/15 18:41	1
sec-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
Styrene	ND		0.00050	mg/L			05/27/15 18:41	1
tert-Butylbenzene	ND		0.00050	mg/L			05/27/15 18:41	1
Tetrachloroethene	**0.0013**		0.00050	mg/L			05/27/15 18:41	1
Toluene	ND		0.00050	mg/L			05/27/15 18:41	1
trans-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 18:41	1
trans-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 18:41	1
Trichloroethene	ND		0.00050	mg/L			05/27/15 18:41	1
Trichlorofluoromethane	ND		0.00050	mg/L			05/27/15 18:41	1
Vinyl acetate	ND		0.0020	mg/L			05/27/15 18:41	1
Vinyl chloride	ND		0.00050	mg/L			05/27/15 18:41	1
Xylenes, Total	ND		0.0015	mg/L			05/27/15 18:41	1

Client Sample ID: R-92A-052115

Lab Sample ID: 550-45186-2

Date Collected: 05/21/15 09:15

Matrix: Water

Date Received: 05/21/15 10:58

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*05/27/15 18:41*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*05/27/15 18:41*	*1*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*05/27/15 18:41*	*1*

Client Sample ID: TB

Lab Sample ID: 550-45186-3

Date Collected: 05/20/15 00:00

Matrix: Water

Date Received: 05/21/15 10:58

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,1,1-Trichloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,1,2,2-Tetrachloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,1,2-Trichloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,1-Dichloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,1-Dichloroethene	ND		0.00050	mg/L			05/27/15 14:01	1
1,1-Dichloropropene	ND		0.00050	mg/L			05/27/15 14:01	1
1,2,3-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 14:01	1
1,2,3-Trichloropropane	ND		0.0020	mg/L			05/27/15 14:01	1
1,2,4-Trichlorobenzene	ND		0.0010	mg/L			05/27/15 14:01	1
1,2,4-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
1,2-Dibromo-3-Chloropropane	ND		0.0050	mg/L			05/27/15 14:01	1
1,2-Dibromoethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,2-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 14:01	1
1,2-Dichloroethane	ND		0.00050	mg/L			05/27/15 14:01	1
1,2-Dichloropropane	ND		0.00050	mg/L			05/27/15 14:01	1
1,3,5-Trimethylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
1,3-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 14:01	1
1,3-Dichloropropane	ND		0.00050	mg/L			05/27/15 14:01	1
1,4-Dichlorobenzene	ND		0.00050	mg/L			05/27/15 14:01	1
2,2-Dichloropropane	ND		0.0010	mg/L			05/27/15 14:01	1
2-Butanone (MEK)	ND		0.0050	mg/L			05/27/15 14:01	1
2-Chlorotoluene	ND		0.00050	mg/L			05/27/15 14:01	1
2-Hexanone	ND	L5	0.0050	mg/L			05/27/15 14:01	1
4-Chlorotoluene	ND		0.00050	mg/L			05/27/15 14:01	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025	mg/L			05/27/15 14:01	1
Acetone	ND	L5 V1	0.010	mg/L			05/27/15 14:01	1
Benzene	ND		0.00050	mg/L			05/27/15 14:01	1
Bromobenzene	ND		0.00050	mg/L			05/27/15 14:01	1
Bromochloromethane	ND		0.00050	mg/L			05/27/15 14:01	1
Bromodichloromethane	ND		0.00050	mg/L			05/27/15 14:01	1
Bromoform	ND		0.0010	mg/L			05/27/15 14:01	1
Bromomethane	ND		0.0010	mg/L			05/27/15 14:01	1
Carbon disulfide	ND		0.0010	mg/L			05/27/15 14:01	1
Carbon tetrachloride	ND		0.00050	mg/L			05/27/15 14:01	1
Chlorobenzene	ND		0.00050	mg/L			05/27/15 14:01	1
Chloroethane	ND		0.0010	mg/L			05/27/15 14:01	1
Chloroform	ND		0.00050	mg/L			05/27/15 14:01	1
Chloromethane	ND		0.0010	mg/L			05/27/15 14:01	1
cis-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 14:01	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Client Sample ID: TB
Date Collected: 05/20/15 00:00
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 14:01	1
Chlorodibromomethane	ND		0.00050	mg/L			05/27/15 14:01	1
Dibromomethane	ND		0.00050	mg/L			05/27/15 14:01	1
Dichlorodifluoromethane	ND		0.00050	mg/L			05/27/15 14:01	1
Ethylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
Hexachlorobutadiene	ND		0.0010	mg/L			05/27/15 14:01	1
Iodomethane	ND		0.0025	mg/L			05/27/15 14:01	1
Isopropylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
m,p-Xylenes	ND		0.0010	mg/L			05/27/15 14:01	1
Methylene Chloride	ND		0.0010	mg/L			05/27/15 14:01	1
Methyl tert-butyl ether	ND		0.00050	mg/L			05/27/15 14:01	1
Naphthalene	ND		0.0025	mg/L			05/27/15 14:01	1
n-Butylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
N-Propylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
o-Xylene	ND		0.00050	mg/L			05/27/15 14:01	1
p-Isopropyltoluene	ND		0.00050	mg/L			05/27/15 14:01	1
sec-Butylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
Styrene	ND		0.00050	mg/L			05/27/15 14:01	1
tert-Butylbenzene	ND		0.00050	mg/L			05/27/15 14:01	1
Tetrachloroethene	ND		0.00050	mg/L			05/27/15 14:01	1
Toluene	ND		0.00050	mg/L			05/27/15 14:01	1
trans-1,2-Dichloroethene	ND		0.00050	mg/L			05/27/15 14:01	1
trans-1,3-Dichloropropene	ND		0.00050	mg/L			05/27/15 14:01	1
Trichloroethene	ND		0.00050	mg/L			05/27/15 14:01	1
Trichlorofluoromethane	ND		0.00050	mg/L			05/27/15 14:01	1
Vinyl acetate	ND		0.0020	mg/L			05/27/15 14:01	1
Vinyl chloride	ND		0.00050	mg/L			05/27/15 14:01	1
Xylenes, Total	ND		0.0015	mg/L			05/27/15 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*05/27/15 14:01*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*05/27/15 14:01*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*05/27/15 14:01*	*1*

Surrogate Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-45186-1	R-92A-052015	101	101	86
550-45186-2	R-92A-052115	101	102	87
550-45186-3	TB	105	103	90

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260_AZ -

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-45179-D-4 MS	Matrix Spike	109	115	107
550-45179-D-4 MSD	Matrix Spike Duplicate	105	112	108
LCS 550-64324/3	Lab Control Sample	106	107	105
LCSD 550-64324/4	Lab Control Sample Dup	107	107	105
MB 550-64324/23	Method Blank	94	112	107

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260_AZ -

Lab Sample ID: LCS 550-64324/3
Matrix:
Analysis Batch: 64324

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	107		70 - 130
Toluene-d8 (Surr)	105		70 - 130

Lab Sample ID: LCSD 550-64324/4
Matrix:
Analysis Batch: 64324

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	107		70 - 130
Toluene-d8 (Surr)	105		70 - 130

Lab Sample ID: 550-45179-D-4 MS
Matrix:
Analysis Batch: 64324

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
Dibromofluoromethane (Surr)	115		70 - 130
Toluene-d8 (Surr)	107		70 - 130

Lab Sample ID: 550-45179-D-4 MSD
Matrix:
Analysis Batch: 64324

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	112		70 - 130
Toluene-d8 (Surr)	108		70 - 130

QC Association Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

GC/MS VOA

Analysis Batch: 64324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-45186-1	R-92A-052015	Total/NA	Water	8260B	
550-45186-2	R-92A-052115	Total/NA	Water	8260B	
550-45186-3	TB	Total/NA	Water	8260B	

Analysis Batch: 64324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-45179-D-4 MS	Matrix Spike	Total/NA		8260_AZ	
550-45179-D-4 MSD	Matrix Spike Duplicate	Total/NA		8260_AZ	
LCS 550-64324/3	Lab Control Sample	Total/NA		8260_AZ	
LCSD 550-64324/4	Lab Control Sample Dup	Total/NA		8260_AZ	
MB 550-64324/23	Method Blank	Total/NA		8260_AZ	

Lab Chronicle

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Client Sample ID: R-92A-052015
Date Collected: 05/20/15 09:15
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	64324	05/27/15 18:10	UT	TAL PHX

Client Sample ID: R-92A-052115
Date Collected: 05/21/15 09:15
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	64324	05/27/15 18:41	UT	TAL PHX

Client Sample ID: TB
Date Collected: 05/20/15 00:00
Date Received: 05/21/15 10:58

Lab Sample ID: 550-45186-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	64324	05/27/15 14:01	UT	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Laboratory: TestAmerica Phoenix

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-15 *

Analysis Method	Prep Method	Matrix	Analyte

* Certification renewal pending - certification considered valid.

Method Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-45186-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX
8260_AZ			TAL PHX

Protocol References:

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

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-0013-550 (10/10)

CHAIN OF CUSTODY FORM 550-45186

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303
[ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803
[ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

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5/28/2015

Page 18 of 19

Client Name/Address: City of Tucson Environmental Services

Project/PO Number: Broadway Pantano

Project Manager: Lori Ehman

Phone Number: 520-837-3702

Sampler: Marc Taylor

Fax Number:

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Analysis Required: 6260	Special Instructions
R-92A-052015	GW		3	5-20-15	0915	HCL	X	Report to
R-92A-052115	GW		3	5-21-15	0915	HCL	X	Low RL's
TB			1				X	

550-45186 Chain of Custody

Relinquished By:	Date/Time:	Received By:	Date/Time:
MT	5-21-15 1058		5-21-15 1058
		Received By:	Date/Time:
Relinquished By:	Date/Time:		
	5-21-15 1570		
Relinquished By:	Date/Time:	Received in Lab By:	Date/Time:
			5-21-15 0930

Turnaround Time: (Check)
same day _____ 72 hours _____
24 hours _____ 5 days _____
48 hours _____ normal X

Sample Integrity: (Check)
intact X on ice X

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

3.4

0.9°C

Login Sample Receipt Checklist

Client: City of Tucson

Job Number: 550-45186-1

Login Number: 45186
List Number: 1
Creator: Gaska, Kristinena

List Source: TestAmerica Phoenix

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

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-52403-1
Client Project/Site: Broadway Pantano

For:
City of Tucson
Environmental Services
PO BOX 27210
Tucson, Arizona 85726-7210

Attn: Lori Ehman

Authorized for release by:
10/19/2015 1:28:29 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

Table of Contents

Definitions/Glossary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Glossary

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

Case Narrative

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Job ID: 550-52403-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-52403-1

Comments
No additional comments.

Receipt
The samples were received on 10/8/2015 5:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the 1 cooler at receipt was 1.6º C.

GC/MS VOA
Method(s) 8260B: The continuing calibration verification (CCV) for analytical batch 75442 recovered high outside control limits for 4-Bromofluorobenzene (surrogate). Associated QC and samples had acceptable recoveries. The data has been qualified and reported with a N1 qualifier.

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

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

Sample Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-52403-1	R-92A-10815	Water	10/08/15 12:45	10/08/15 17:15
550-52403-2	TB	Water	10/08/15 12:45	10/08/15 17:15

Detection Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Client Sample ID: R-92A-10815 — Lab Sample ID: 550-52403-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.0015		0.00050		mg/L	1		8260B	Total/NA

Client Sample ID: TB — Lab Sample ID: 550-52403-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: R-92A-10815
Date Collected: 10/08/15 12:45
Date Received: 10/08/15 17:15

Lab Sample ID: 550-52403-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,1-Dichloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,1-Dichloroethene	ND		0.00050		mg/L			10/13/15 00:28	1
1,1-Dichloropropene	ND		0.00050		mg/L			10/13/15 00:28	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			10/13/15 00:28	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			10/13/15 00:28	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			10/13/15 00:28	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			10/13/15 00:28	1
1,2-Dibromoethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			10/13/15 00:28	1
1,2-Dichloroethane	ND		0.00050		mg/L			10/13/15 00:28	1
1,2-Dichloropropane	ND		0.00050		mg/L			10/13/15 00:28	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			10/13/15 00:28	1
1,3-Dichloropropane	ND		0.00050		mg/L			10/13/15 00:28	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			10/13/15 00:28	1
2,2-Dichloropropane	ND		0.0010		mg/L			10/13/15 00:28	1
2-Butanone (MEK)	ND		0.0050		mg/L			10/13/15 00:28	1
2-Chlorotoluene	ND		0.00050		mg/L			10/13/15 00:28	1
2-Hexanone	ND		0.0050		mg/L			10/13/15 00:28	1
4-Chlorotoluene	ND		0.00050		mg/L			10/13/15 00:28	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			10/13/15 00:28	1
Acetone	ND		0.010		mg/L			10/13/15 00:28	1
Benzene	ND		0.00050		mg/L			10/13/15 00:28	1
Bromobenzene	ND		0.00050		mg/L			10/13/15 00:28	1
Bromochloromethane	ND		0.00050		mg/L			10/13/15 00:28	1
Bromodichloromethane	ND		0.00050		mg/L			10/13/15 00:28	1
Bromoform	ND		0.0010		mg/L			10/13/15 00:28	1
Bromomethane	ND		0.0010		mg/L			10/13/15 00:28	1
Carbon disulfide	ND		0.0010		mg/L			10/13/15 00:28	1
Carbon tetrachloride	ND		0.00050		mg/L			10/13/15 00:28	1
Chlorobenzene	ND		0.00050		mg/L			10/13/15 00:28	1
Chloroethane	ND		0.0010		mg/L			10/13/15 00:28	1
Chloroform	ND		0.00050		mg/L			10/13/15 00:28	1
Chloromethane	ND		0.0010		mg/L			10/13/15 00:28	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			10/13/15 00:28	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			10/13/15 00:28	1
Chlorodibromomethane	ND		0.00050		mg/L			10/13/15 00:28	1
Dibromomethane	ND		0.00050		mg/L			10/13/15 00:28	1
Dichlorodifluoromethane	ND		0.00050		mg/L			10/13/15 00:28	1
Ethylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
Hexachlorobutadiene	ND		0.0010		mg/L			10/13/15 00:28	1
Iodomethane	ND		0.0025		mg/L			10/13/15 00:28	1
Isopropylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
m,p-Xylenes	ND		0.0010		mg/L			10/13/15 00:28	1

Client Sample ID: R-92A-10815

Lab Sample ID: 550-52403-1

Date Collected: 10/08/15 12:45

Matrix: Water

Date Received: 10/08/15 17:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		0.0010		mg/L			10/13/15 00:28	1
Methyl tert-butyl ether	ND		0.00050		mg/L			10/13/15 00:28	1
Naphthalene	ND		0.0025		mg/L			10/13/15 00:28	1
n-Butylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
N-Propylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
o-Xylene	ND		0.00050		mg/L			10/13/15 00:28	1
p-Isopropyltoluene	ND		0.00050		mg/L			10/13/15 00:28	1
sec-Butylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
Styrene	ND		0.00050		mg/L			10/13/15 00:28	1
tert-Butylbenzene	ND		0.00050		mg/L			10/13/15 00:28	1
Tetrachloroethene	**0.0015**		0.00050		mg/L			10/13/15 00:28	1
Toluene	ND		0.00050		mg/L			10/13/15 00:28	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			10/13/15 00:28	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			10/13/15 00:28	1
Trichloroethene	ND		0.00050		mg/L			10/13/15 00:28	1
Trichlorofluoromethane	ND		0.00050		mg/L			10/13/15 00:28	1
Vinyl acetate	ND		0.0020		mg/L			10/13/15 00:28	1
Vinyl chloride	ND		0.00050		mg/L			10/13/15 00:28	1
Xylenes, Total	ND		0.0015		mg/L			10/13/15 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*70 - 130*		*10/13/15 00:28*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*		*10/13/15 00:28*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*10/13/15 00:28*	*1*

Client Sample ID: TB

Lab Sample ID: 550-52403-2

Date Collected: 10/08/15 12:45

Matrix: Water

Date Received: 10/08/15 17:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,1-Dichloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,1-Dichloroethene	ND		0.00050		mg/L			10/12/15 19:48	1
1,1-Dichloropropene	ND		0.00050		mg/L			10/12/15 19:48	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			10/12/15 19:48	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			10/12/15 19:48	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			10/12/15 19:48	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			10/12/15 19:48	1
1,2-Dibromoethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 19:48	1
1,2-Dichloroethane	ND		0.00050		mg/L			10/12/15 19:48	1
1,2-Dichloropropane	ND		0.00050		mg/L			10/12/15 19:48	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 19:48	1
1,3-Dichloropropane	ND		0.00050		mg/L			10/12/15 19:48	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Client Sample ID: TB
Date Collected: 10/08/15 12:45
Date Received: 10/08/15 17:15

Lab Sample ID: 550-52403-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 19:48	1
2,2-Dichloropropane	ND		0.0010		mg/L			10/12/15 19:48	1
2-Butanone (MEK)	ND		0.0050		mg/L			10/12/15 19:48	1
2-Chlorotoluene	ND		0.00050		mg/L			10/12/15 19:48	1
2-Hexanone	ND		0.0050		mg/L			10/12/15 19:48	1
4-Chlorotoluene	ND		0.00050		mg/L			10/12/15 19:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			10/12/15 19:48	1
Acetone	ND		0.010		mg/L			10/12/15 19:48	1
Benzene	ND		0.00050		mg/L			10/12/15 19:48	1
Bromobenzene	ND		0.00050		mg/L			10/12/15 19:48	1
Bromochloromethane	ND		0.00050		mg/L			10/12/15 19:48	1
Bromodichloromethane	ND		0.00050		mg/L			10/12/15 19:48	1
Bromoform	ND		0.0010		mg/L			10/12/15 19:48	1
Bromomethane	ND		0.0010		mg/L			10/12/15 19:48	1
Carbon disulfide	ND		0.0010		mg/L			10/12/15 19:48	1
Carbon tetrachloride	ND		0.00050		mg/L			10/12/15 19:48	1
Chlorobenzene	ND		0.00050		mg/L			10/12/15 19:48	1
Chloroethane	ND		0.0010		mg/L			10/12/15 19:48	1
Chloroform	ND		0.00050		mg/L			10/12/15 19:48	1
Chloromethane	ND		0.0010		mg/L			10/12/15 19:48	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			10/12/15 19:48	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			10/12/15 19:48	1
Chlorodibromomethane	ND		0.00050		mg/L			10/12/15 19:48	1
Dibromomethane	ND		0.00050		mg/L			10/12/15 19:48	1
Dichlorodifluoromethane	ND		0.00050		mg/L			10/12/15 19:48	1
Ethylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
Hexachlorobutadiene	ND		0.0010		mg/L			10/12/15 19:48	1
Iodomethane	ND		0.0025		mg/L			10/12/15 19:48	1
Isopropylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
m,p-Xylenes	ND		0.0010		mg/L			10/12/15 19:48	1
Methylene Chloride	ND		0.0010		mg/L			10/12/15 19:48	1
Methyl tert-butyl ether	ND		0.00050		mg/L			10/12/15 19:48	1
Naphthalene	ND		0.0025		mg/L			10/12/15 19:48	1
n-Butylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
N-Propylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
o-Xylene	ND		0.00050		mg/L			10/12/15 19:48	1
p-Isopropyltoluene	ND		0.00050		mg/L			10/12/15 19:48	1
sec-Butylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
Styrene	ND		0.00050		mg/L			10/12/15 19:48	1
tert-Butylbenzene	ND		0.00050		mg/L			10/12/15 19:48	1
Tetrachloroethene	ND		0.00050		mg/L			10/12/15 19:48	1
Toluene	ND		0.00050		mg/L			10/12/15 19:48	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			10/12/15 19:48	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			10/12/15 19:48	1
Trichloroethene	ND		0.00050		mg/L			10/12/15 19:48	1
Trichlorofluoromethane	ND		0.00050		mg/L			10/12/15 19:48	1
Vinyl acetate	ND		0.0020		mg/L			10/12/15 19:48	1
Vinyl chloride	ND		0.00050		mg/L			10/12/15 19:48	1
Xylenes, Total	ND		0.0015		mg/L			10/12/15 19:48	1

Client Sample Results

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Client Sample ID: TB
Date Collected: 10/08/15 12:45
Date Received: 10/08/15 17:15

Lab Sample ID: 550-52403-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	107		70 - 130		10/12/15 19:48	1
Toluene-d8 (Surr)	109		70 - 130		10/12/15 19:48	1
4-Bromofluorobenzene (Surr)	108		70 - 130		10/12/15 19:48	1

Surrogate Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-52355-A-1 MS	Matrix Spike	112	105	111
550-52355-A-1 MSD	Matrix Spike Duplicate	109	106	110
550-52403-1	R-92A-10815	113	106	107
550-52403-2	TB	107	109	108
LCS 550-75442/3	Lab Control Sample	112	110	114
LCSD 550-75442/4	Lab Control Sample Dup	108	108	113
MB 550-75442/5	Method Blank	105	106	109

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 550-75442/5
Matrix: Water
Analysis Batch: 75442

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,1-Dichloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,1-Dichloroethene	ND		0.00050		mg/L			10/12/15 18:14	1
1,1-Dichloropropene	ND		0.00050		mg/L			10/12/15 18:14	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			10/12/15 18:14	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			10/12/15 18:14	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			10/12/15 18:14	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			10/12/15 18:14	1
1,2-Dibromoethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 18:14	1
1,2-Dichloroethane	ND		0.00050		mg/L			10/12/15 18:14	1
1,2-Dichloropropane	ND		0.00050		mg/L			10/12/15 18:14	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 18:14	1
1,3-Dichloropropane	ND		0.00050		mg/L			10/12/15 18:14	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			10/12/15 18:14	1
2,2-Dichloropropane	ND		0.0010		mg/L			10/12/15 18:14	1
2-Butanone (MEK)	ND		0.0050		mg/L			10/12/15 18:14	1
2-Chlorotoluene	ND		0.00050		mg/L			10/12/15 18:14	1
2-Hexanone	ND		0.0050		mg/L			10/12/15 18:14	1
4-Chlorotoluene	ND		0.00050		mg/L			10/12/15 18:14	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			10/12/15 18:14	1
Acetone	ND		0.010		mg/L			10/12/15 18:14	1
Benzene	ND		0.00050		mg/L			10/12/15 18:14	1
Bromobenzene	ND		0.00050		mg/L			10/12/15 18:14	1
Bromochloromethane	ND		0.00050		mg/L			10/12/15 18:14	1
Bromodichloromethane	ND		0.00050		mg/L			10/12/15 18:14	1
Bromoform	ND		0.0010		mg/L			10/12/15 18:14	1
Bromomethane	ND		0.0010		mg/L			10/12/15 18:14	1
Carbon disulfide	ND		0.0010		mg/L			10/12/15 18:14	1
Carbon tetrachloride	ND		0.00050		mg/L			10/12/15 18:14	1
Chlorobenzene	ND		0.00050		mg/L			10/12/15 18:14	1
Chloroethane	ND		0.0010		mg/L			10/12/15 18:14	1
Chloroform	ND		0.00050		mg/L			10/12/15 18:14	1
Chloromethane	ND		0.0010		mg/L			10/12/15 18:14	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			10/12/15 18:14	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			10/12/15 18:14	1
Chlorodibromomethane	ND		0.00050		mg/L			10/12/15 18:14	1
Dibromomethane	ND		0.00050		mg/L			10/12/15 18:14	1
Dichlorodifluoromethane	ND		0.00050		mg/L			10/12/15 18:14	1
Ethylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
Hexachlorobutadiene	ND		0.0010		mg/L			10/12/15 18:14	1
Iodomethane	ND		0.0025		mg/L			10/12/15 18:14	1
Isopropylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 550-75442/5
Matrix: Water
Analysis Batch: 75442

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	ND		0.0010		mg/L			10/12/15 18:14	1
Methylene Chloride	ND		0.0010		mg/L			10/12/15 18:14	1
Methyl tert-butyl ether	ND		0.00050		mg/L			10/12/15 18:14	1
Naphthalene	ND		0.0025		mg/L			10/12/15 18:14	1
n-Butylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
N-Propylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
o-Xylene	ND		0.00050		mg/L			10/12/15 18:14	1
p-Isopropyltoluene	ND		0.00050		mg/L			10/12/15 18:14	1
sec-Butylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
Styrene	ND		0.00050		mg/L			10/12/15 18:14	1
tert-Butylbenzene	ND		0.00050		mg/L			10/12/15 18:14	1
Tetrachloroethene	ND		0.00050		mg/L			10/12/15 18:14	1
Toluene	ND		0.00050		mg/L			10/12/15 18:14	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			10/12/15 18:14	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			10/12/15 18:14	1
Trichloroethene	ND		0.00050		mg/L			10/12/15 18:14	1
Trichlorofluoromethane	ND		0.00050		mg/L			10/12/15 18:14	1
Vinyl acetate	ND		0.0020		mg/L			10/12/15 18:14	1
Vinyl chloride	ND		0.00050		mg/L			10/12/15 18:14	1
Xylenes, Total	ND		0.0015		mg/L			10/12/15 18:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*10/12/15 18:14*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*		*10/12/15 18:14*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*		*10/12/15 18:14*	*1*

Lab Sample ID: LCS 550-75442/3
Matrix: Water
Analysis Batch: 75442

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.0250	0.0270		mg/L		108	70 - 130
1,1,1-Trichloroethane	0.0250	0.0273		mg/L		109	71 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0209		mg/L		84	70 - 130
1,1,2-Trichloroethane	0.0250	0.0255		mg/L		102	70 - 130
1,1-Dichloroethane	0.0250	0.0223		mg/L		89	70 - 130
1,1-Dichloroethene	0.0250	0.0212		mg/L		85	63 - 131
1,1-Dichloropropene	0.0250	0.0264		mg/L		106	70 - 130
1,2,3-Trichlorobenzene	0.0250	0.0269		mg/L		108	79 - 139
1,2,3-Trichloropropane	0.0250	0.0259		mg/L		103	70 - 130
1,2,4-Trichlorobenzene	0.0250	0.0267		mg/L		107	80 - 137
1,2,4-Trimethylbenzene	0.0250	0.0245		mg/L		98	70 - 130
1,2-Dibromo-3-Chloropropane	0.0250	0.0247		mg/L		99	63 - 146
1,2-Dibromoethane	0.0250	0.0267		mg/L		107	70 - 130
1,2-Dichlorobenzene	0.0250	0.0254		mg/L		102	70 - 130
1,2-Dichloroethane	0.0250	0.0304		mg/L		121	66 - 139
1,2-Dichloropropane	0.0250	0.0229		mg/L		91	70 - 130
1,3,5-Trimethylbenzene	0.0250	0.0240		mg/L		96	70 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-75442/3
Matrix: Water
Analysis Batch: 75442

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0250	0.0251		mg/L		100	70 - 130
1,3-Dichloropropane	0.0250	0.0255		mg/L		102	70 - 130
1,4-Dichlorobenzene	0.0250	0.0251		mg/L		100	70 - 130
2,2-Dichloropropane	0.0250	0.0266		mg/L		107	69 - 139
2-Butanone (MEK)	0.0250	0.0295		mg/L		118	53 - 150
2-Chlorotoluene	0.0250	0.0234		mg/L		94	70 - 130
2-Hexanone	0.0250	0.0333		mg/L		133	55 - 150
4-Chlorotoluene	0.0250	0.0236		mg/L		95	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0250	0.0258		mg/L		103	64 - 142
Acetone	0.0250	0.0325		mg/L		130	38 - 150
Benzene	0.0250	0.0240		mg/L		96	70 - 130
Bromobenzene	0.0250	0.0240		mg/L		96	70 - 130
Bromochloromethane	0.0250	0.0253		mg/L		101	70 - 130
Bromodichloromethane	0.0250	0.0282		mg/L		113	70 - 130
Bromoform	0.0250	0.0222		mg/L		89	69 - 129
Bromomethane	0.0250	0.0219		mg/L		88	57 - 138
Carbon disulfide	0.0250	0.0215		mg/L		86	64 - 145
Carbon tetrachloride	0.0250	0.0319		mg/L		128	70 - 143
Chlorobenzene	0.0250	0.0258		mg/L		103	70 - 130
Chloroethane	0.0250	0.0205		mg/L		82	66 - 131
Chloroform	0.0250	0.0251		mg/L		100	70 - 130
Chloromethane	0.0250	0.0185		mg/L		74	56 - 129
cis-1,2-Dichloroethene	0.0250	0.0226		mg/L		91	70 - 130
cis-1,3-Dichloropropene	0.0250	0.0243		mg/L		97	70 - 130
Chlorodibromomethane	0.0250	0.0276		mg/L		111	70 - 130
Dibromomethane	0.0250	0.0279		mg/L		112	70 - 130
Dichlorodifluoromethane	0.0250	0.0264		mg/L		106	46 - 144
Ethylbenzene	0.0250	0.0261		mg/L		105	70 - 130
Hexachlorobutadiene	0.0250	0.0279		mg/L		112	76 - 145
Iodomethane	0.0250	0.0257		mg/L		103	70 - 130
Isopropylbenzene	0.0250	0.0231		mg/L		92	88 - 141
m,p-Xylenes	0.0250	0.0264		mg/L		106	70 - 130
Methylene Chloride	0.0250	0.0205		mg/L		82	63 - 128
Methyl tert-butyl ether	0.0250	0.0229		mg/L		92	70 - 130
Naphthalene	0.0250	0.0249		mg/L		100	78 - 143
n-Butylbenzene	0.0250	0.0258		mg/L		103	70 - 130
N-Propylbenzene	0.0250	0.0228		mg/L		91	70 - 130
o-Xylene	0.0250	0.0270		mg/L		108	70 - 130
p-Isopropyltoluene	0.0250	0.0255		mg/L		102	70 - 130
sec-Butylbenzene	0.0250	0.0243		mg/L		97	70 - 130
Styrene	0.0250	0.0264		mg/L		105	70 - 130
Tetrachloroethene	0.0250	0.0279		mg/L		112	70 - 130
Toluene	0.0250	0.0257		mg/L		103	70 - 130
trans-1,2-Dichloroethene	0.0250	0.0214		mg/L		86	69 - 127
trans-1,3-Dichloropropene	0.0250	0.0272		mg/L		109	70 - 130
Trichloroethene	0.0250	0.0264		mg/L		106	70 - 130
Trichlorofluoromethane	0.0250	0.0308		mg/L		123	69 - 150
Vinyl acetate	0.0250	0.0226		mg/L		90	67 - 148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-75442/3
Matrix: Water
Analysis Batch: 75442

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			0.0250	0.0203		mg/L		81	65 - 137		
Xylenes, Total			0.0500	0.0534		mg/L		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*70 - 130*
Toluene-d8 (Surr)	*110*		*70 - 130*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*

Lab Sample ID: LCSD 550-75442/4
Matrix: Water
Analysis Batch: 75442

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			0.0250	0.0275		mg/L		110	70 - 130	2	20
1,1,1-Trichloroethane			0.0250	0.0281		mg/L		113	71 - 131	3	20
1,1,2,2-Tetrachloroethane			0.0250	0.0221		mg/L		88	70 - 130	6	20
1,1,2-Trichloroethane			0.0250	0.0263		mg/L		105	70 - 130	3	20
1,1-Dichloroethane			0.0250	0.0226		mg/L		91	70 - 130	1	20
1,1-Dichloroethene			0.0250	0.0218		mg/L		87	63 - 131	3	22
1,1-Dichloropropene			0.0250	0.0270		mg/L		108	70 - 130	2	20
1,2,3-Trichlorobenzene			0.0250	0.0270		mg/L		108	79 - 139	0	20
1,2,3-Trichloropropane			0.0250	0.0274		mg/L		109	70 - 130	6	20
1,2,4-Trichlorobenzene			0.0250	0.0266		mg/L		107	80 - 137	0	20
1,2,4-Trimethylbenzene			0.0250	0.0247		mg/L		99	70 - 130	1	20
1,2-Dibromo-3-Chloropropane			0.0250	0.0276		mg/L		111	63 - 146	11	22
1,2-Dibromoethane			0.0250	0.0270		mg/L		108	70 - 130	1	20
1,2-Dichlorobenzene			0.0250	0.0260		mg/L		104	70 - 130	2	20
1,2-Dichloroethane			0.0250	0.0307		mg/L		123	66 - 139	1	20
1,2-Dichloropropane			0.0250	0.0226		mg/L		91	70 - 130	1	20
1,3,5-Trimethylbenzene			0.0250	0.0246		mg/L		98	70 - 130	2	20
1,3-Dichlorobenzene			0.0250	0.0257		mg/L		103	70 - 130	2	20
1,3-Dichloropropane			0.0250	0.0257		mg/L		103	70 - 130	1	20
1,4-Dichlorobenzene			0.0250	0.0253		mg/L		101	70 - 130	1	20
2,2-Dichloropropane			0.0250	0.0271		mg/L		108	69 - 139	2	20
2-Butanone (MEK)			0.0250	0.0306		mg/L		122	53 - 150	4	35
2-Chlorotoluene			0.0250	0.0235		mg/L		94	70 - 130	0	20
2-Hexanone			0.0250	0.0348		mg/L		139	55 - 150	4	35
4-Chlorotoluene			0.0250	0.0240		mg/L		96	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)			0.0250	0.0278		mg/L		111	64 - 142	7	25
Acetone			0.0250	0.0339		mg/L		136	38 - 150	4	35
Benzene			0.0250	0.0245		mg/L		98	70 - 130	2	20
Bromobenzene			0.0250	0.0245		mg/L		98	70 - 130	2	20
Bromochloromethane			0.0250	0.0246		mg/L		98	70 - 130	3	20
Bromodichloromethane			0.0250	0.0281		mg/L		112	70 - 130	0	20
Bromoform			0.0250	0.0236		mg/L		94	69 - 129	6	20
Bromomethane			0.0250	0.0223		mg/L		89	57 - 138	2	20
Carbon disulfide			0.0250	0.0219		mg/L		88	64 - 145	2	33
Carbon tetrachloride			0.0250	0.0330		mg/L		132	70 - 143	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 550-75442/4
Matrix: Water
Analysis Batch: 75442

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			0.0250	0.0261		mg/L		104	70 - 130	1	20
Chloroethane			0.0250	0.0202		mg/L		81	66 - 131	2	20
Chloroform			0.0250	0.0259		mg/L		103	70 - 130	3	20
Chloromethane			0.0250	0.0192		mg/L		77	56 - 129	4	20
cis-1,2-Dichloroethene			0.0250	0.0219		mg/L		88	70 - 130	3	20
cis-1,3-Dichloropropene			0.0250	0.0246		mg/L		98	70 - 130	1	20
Chlorodibromomethane			0.0250	0.0274		mg/L		109	70 - 130	1	20
Dibromomethane			0.0250	0.0282		mg/L		113	70 - 130	1	20
Dichlorodifluoromethane			0.0250	0.0272		mg/L		109	46 - 144	3	23
Ethylbenzene			0.0250	0.0264		mg/L		106	70 - 130	1	20
Hexachlorobutadiene			0.0250	0.0286		mg/L		114	76 - 145	2	20
Iodomethane			0.0250	0.0265		mg/L		106	70 - 130	3	20
Isopropylbenzene			0.0250	0.0236		mg/L		95	88 - 141	2	20
m,p-Xylenes			0.0250	0.0264		mg/L		105	70 - 130	0	20
Methylene Chloride			0.0250	0.0201		mg/L		80	63 - 128	2	21
Methyl tert-butyl ether			0.0250	0.0236		mg/L		94	70 - 130	3	20
Naphthalene			0.0250	0.0266		mg/L		106	78 - 143	6	20
n-Butylbenzene			0.0250	0.0258		mg/L		103	70 - 130	0	20
N-Propylbenzene			0.0250	0.0237		mg/L		95	70 - 130	4	20
o-Xylene			0.0250	0.0269		mg/L		108	70 - 130	0	20
p-Isopropyltoluene			0.0250	0.0260		mg/L		104	70 - 130	2	20
sec-Butylbenzene			0.0250	0.0248		mg/L		99	70 - 130	2	20
Styrene			0.0250	0.0267		mg/L		107	70 - 130	1	20
Tetrachloroethene			0.0250	0.0286		mg/L		114	70 - 130	3	20
Toluene			0.0250	0.0261		mg/L		104	70 - 130	1	20
trans-1,2-Dichloroethene			0.0250	0.0207		mg/L		83	69 - 127	3	20
trans-1,3-Dichloropropene			0.0250	0.0283		mg/L		113	70 - 130	4	20
Trichloroethene			0.0250	0.0276		mg/L		111	70 - 130	5	20
Trichlorofluoromethane			0.0250	0.0306		mg/L		122	69 - 150	1	22
Vinyl acetate			0.0250	0.0225		mg/L		90	67 - 148	0	22
Vinyl chloride			0.0250	0.0207		mg/L		83	65 - 137	2	20
Xylenes, Total			0.0500	0.0533		mg/L		107	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
Toluene-d8 (Surr)	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 550-52355-A-1 MS
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0269		mg/L		108	70 - 130
1,1,1-Trichloroethane	ND		0.0250	0.0286		mg/L		115	64 - 138
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0198		mg/L		79	63 - 137
1,1,2-Trichloroethane	ND		0.0250	0.0258		mg/L		103	63 - 132
1,1-Dichloroethane	ND		0.0250	0.0224		mg/L		90	62 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-52355-A-1 MS
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		0.0250	0.0214		mg/L		85	57 - 137
1,1-Dichloropropene	ND		0.0250	0.0254		mg/L		102	64 - 134
1,2,3-Trichlorobenzene	ND		0.0250	0.0271		mg/L		108	74 - 139
1,2,3-Trichloropropane	ND		0.0250	0.0258		mg/L		103	68 - 130
1,2,4-Trichlorobenzene	ND		0.0250	0.0271		mg/L		108	74 - 138
1,2,4-Trimethylbenzene	ND		0.0250	0.0233		mg/L		93	63 - 135
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0265		mg/L		106	53 - 145
1,2-Dibromoethane	ND		0.0250	0.0262		mg/L		105	70 - 130
1,2-Dichlorobenzene	ND		0.0250	0.0250		mg/L		100	70 - 130
1,2-Dichloroethane	ND		0.0250	0.0327		mg/L		131	54 - 147
1,2-Dichloropropane	ND		0.0250	0.0217		mg/L		87	68 - 126
1,3,5-Trimethylbenzene	ND		0.0250	0.0228		mg/L		91	66 - 137
1,3-Dichlorobenzene	ND		0.0250	0.0244		mg/L		97	70 - 130
1,3-Dichloropropane	ND		0.0250	0.0252		mg/L		101	68 - 129
1,4-Dichlorobenzene	ND		0.0250	0.0240		mg/L		96	70 - 130
2,2-Dichloropropane	ND		0.0250	0.0267		mg/L		107	60 - 146
2-Butanone (MEK)	ND		0.0250	0.0256		mg/L		102	31 - 143
2-Chlorotoluene	ND		0.0250	0.0217		mg/L		87	71 - 131
2-Hexanone	ND		0.0250	0.0260		mg/L		104	40 - 142
4-Chlorotoluene	ND		0.0250	0.0225		mg/L		90	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0263		mg/L		105	52 - 143
Acetone	ND		0.0250	0.0251		mg/L		100	29 - 139
Benzene	ND		0.0250	0.0233		mg/L		93	68 - 131
Bromobenzene	ND		0.0250	0.0234		mg/L		94	70 - 130
Bromochloromethane	ND		0.0250	0.0257		mg/L		103	64 - 132
Bromodichloromethane	ND		0.0250	0.0287		mg/L		115	63 - 138
Bromoform	ND		0.0250	0.0229		mg/L		92	60 - 128
Bromomethane	ND		0.0250	0.0216		mg/L		87	47 - 144
Carbon disulfide	ND		0.0250	0.0215		mg/L		86	45 - 150
Carbon tetrachloride	ND		0.0250	0.0329		mg/L		132	65 - 147
Chlorobenzene	ND		0.0250	0.0252		mg/L		101	70 - 130
Chloroethane	ND		0.0250	0.0190		mg/L		76	57 - 139
Chloroform	ND		0.0250	0.0263		mg/L		105	63 - 131
Chloromethane	ND		0.0250	0.0174		mg/L		70	47 - 134
cis-1,2-Dichloroethene	ND		0.0250	0.0225		mg/L		90	65 - 127
cis-1,3-Dichloropropene	ND		0.0250	0.0239		mg/L		96	63 - 135
Chlorodibromomethane	ND		0.0250	0.0277		mg/L		111	65 - 134
Dibromomethane	ND		0.0250	0.0291		mg/L		116	66 - 136
Dichlorodifluoromethane	ND		0.0250	0.0261		mg/L		104	40 - 148
Ethylbenzene	ND		0.0250	0.0253		mg/L		101	74 - 134
Hexachlorobutadiene	ND		0.0250	0.0282		mg/L		113	69 - 150
Iodomethane	ND		0.0250	0.0267		mg/L		107	53 - 150
Isopropylbenzene	ND		0.0250	0.0214		mg/L		85	80 - 146
m,p-Xylenes	ND		0.0250	0.0246		mg/L		98	58 - 138
Methylene Chloride	ND		0.0250	0.0208		mg/L		83	55 - 133
Methyl tert-butyl ether	ND		0.0250	0.0244		mg/L		98	67 - 138
Naphthalene	ND		0.0250	0.0256		mg/L		103	67 - 146
n-Butylbenzene	ND		0.0250	0.0240		mg/L		96	69 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-52355-A-1 MS
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Propylbenzene	ND		0.0250	0.0213		mg/L		85	74 - 140
o-Xylene	ND		0.0250	0.0264		mg/L		105	66 - 137
p-Isopropyltoluene	ND		0.0250	0.0242		mg/L		97	70 - 133
sec-Butylbenzene	ND		0.0250	0.0229		mg/L		92	72 - 136
Styrene	ND		0.0250	0.0255		mg/L		102	43 - 144
Tetrachloroethene	ND		0.0250	0.0274		mg/L		109	67 - 131
Toluene	ND		0.0250	0.0247		mg/L		99	65 - 138
trans-1,2-Dichloroethene	ND		0.0250	0.0205		mg/L		82	62 - 131
trans-1,3-Dichloropropene	ND		0.0250	0.0283		mg/L		113	58 - 136
Trichloroethene	ND		0.0250	0.0269		mg/L		108	66 - 132
Trichlorofluoromethane	ND		0.0250	0.0314		mg/L		126	62 - 150
Vinyl acetate	ND		0.0250	0.0229		mg/L		92	47 - 150
Vinyl chloride	ND		0.0250	0.0191		mg/L		76	55 - 146
Xylenes, Total	ND		0.0500	0.0510		mg/L		102	68 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*70 - 130*
Toluene-d8 (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 550-52355-A-1 MSD
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0270		mg/L		108	70 - 130	1	30
1,1,1-Trichloroethane	ND		0.0250	0.0272		mg/L		109	64 - 138	5	35
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0209		mg/L		84	63 - 137	5	32
1,1,2-Trichloroethane	ND		0.0250	0.0255		mg/L		102	63 - 132	1	35
1,1-Dichloroethane	ND		0.0250	0.0211		mg/L		84	62 - 130	6	34
1,1-Dichloroethene	ND		0.0250	0.0197		mg/L		79	57 - 137	8	35
1,1-Dichloropropene	ND		0.0250	0.0255		mg/L		102	64 - 134	0	34
1,2,3-Trichlorobenzene	ND		0.0250	0.0276		mg/L		110	74 - 139	2	26
1,2,3-Trichloropropane	ND		0.0250	0.0265		mg/L		106	68 - 130	2	32
1,2,4-Trichlorobenzene	ND		0.0250	0.0273		mg/L		109	74 - 138	1	26
1,2,4-Trimethylbenzene	ND		0.0250	0.0235		mg/L		94	63 - 135	1	31
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0295		mg/L		118	53 - 145	10	35
1,2-Dibromoethane	ND		0.0250	0.0260		mg/L		104	70 - 130	1	33
1,2-Dichlorobenzene	ND		0.0250	0.0250		mg/L		100	70 - 130	0	27
1,2-Dichloroethane	ND		0.0250	0.0312		mg/L		125	54 - 147	4	35
1,2-Dichloropropane	ND		0.0250	0.0215		mg/L		86	68 - 126	1	32
1,3,5-Trimethylbenzene	ND		0.0250	0.0232		mg/L		93	66 - 137	1	30
1,3-Dichlorobenzene	ND		0.0250	0.0244		mg/L		98	70 - 130	0	28
1,3-Dichloropropane	ND		0.0250	0.0249		mg/L		100	68 - 129	1	33
1,4-Dichlorobenzene	ND		0.0250	0.0243		mg/L		97	70 - 130	1	26
2,2-Dichloropropane	ND		0.0250	0.0244		mg/L		98	60 - 146	9	35
2-Butanone (MEK)	ND		0.0250	0.0244		mg/L		98	31 - 143	5	35
2-Chlorotoluene	ND		0.0250	0.0223		mg/L		89	71 - 131	3	29

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-52355-A-1 MSD
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		0.0250	0.0249		mg/L		100	40 - 142	4	35
4-Chlorotoluene	ND		0.0250	0.0229		mg/L		91	70 - 130	2	28
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0262		mg/L		105	52 - 143	0	35
Acetone	ND		0.0250	0.0247		mg/L		99	29 - 139	1	35
Benzene	ND		0.0250	0.0225		mg/L		90	68 - 131	4	32
Bromobenzene	ND		0.0250	0.0230		mg/L		92	70 - 130	2	28
Bromochloromethane	ND		0.0250	0.0247		mg/L		99	64 - 132	4	35
Bromodichloromethane	ND		0.0250	0.0283		mg/L		113	63 - 138	2	31
Bromoform	ND		0.0250	0.0228		mg/L		91	60 - 128	0	31
Bromomethane	ND		0.0250	0.0208		mg/L		83	47 - 144	4	35
Carbon disulfide	ND		0.0250	0.0197		mg/L		79	45 - 150	9	35
Carbon tetrachloride	ND		0.0250	0.0320		mg/L		128	65 - 147	3	35
Chlorobenzene	ND		0.0250	0.0248		mg/L		99	70 - 130	2	30
Chloroethane	ND		0.0250	0.0189		mg/L		75	57 - 139	1	35
Chloroform	ND		0.0250	0.0247		mg/L		99	63 - 131	6	33
Chloromethane	ND		0.0250	0.0179		mg/L		72	47 - 134	3	35
cis-1,2-Dichloroethene	ND		0.0250	0.0211		mg/L		84	65 - 127	7	34
cis-1,3-Dichloropropene	ND		0.0250	0.0235		mg/L		94	63 - 135	2	35
Chlorodibromomethane	ND		0.0250	0.0279		mg/L		111	65 - 134	1	33
Dibromomethane	ND		0.0250	0.0291		mg/L		116	66 - 136	0	35
Dichlorodifluoromethane	ND		0.0250	0.0276		mg/L		111	40 - 148	6	35
Ethylbenzene	ND		0.0250	0.0247		mg/L		99	74 - 134	2	32
Hexachlorobutadiene	ND		0.0250	0.0279		mg/L		112	69 - 150	1	32
Iodomethane	ND		0.0250	0.0252		mg/L		101	53 - 150	6	35
Isopropylbenzene	ND		0.0250	0.0215		mg/L		86	80 - 146	1	32
m,p-Xylenes	ND		0.0250	0.0243		mg/L		97	58 - 138	1	29
Methylene Chloride	ND		0.0250	0.0198		mg/L		79	55 - 133	5	35
Methyl tert-butyl ether	ND		0.0250	0.0228		mg/L		91	67 - 138	7	21
Naphthalene	ND		0.0250	0.0263		mg/L		105	67 - 146	3	29
n-Butylbenzene	ND		0.0250	0.0242		mg/L		97	69 - 140	1	32
N-Propylbenzene	ND		0.0250	0.0214		mg/L		86	74 - 140	0	32
o-Xylene	ND		0.0250	0.0257		mg/L		103	66 - 137	3	26
p-Isopropyltoluene	ND		0.0250	0.0240		mg/L		96	70 - 133	1	32
sec-Butylbenzene	ND		0.0250	0.0227		mg/L		91	72 - 136	1	33
Styrene	ND		0.0250	0.0251		mg/L		100	43 - 144	2	35
Tetrachloroethene	ND		0.0250	0.0264		mg/L		105	67 - 131	4	31
Toluene	ND		0.0250	0.0250		mg/L		100	65 - 138	1	33
trans-1,2-Dichloroethene	ND		0.0250	0.0196		mg/L		79	62 - 131	4	35
trans-1,3-Dichloropropene	ND		0.0250	0.0276		mg/L		110	58 - 136	3	35
Trichloroethene	ND		0.0250	0.0262		mg/L		105	66 - 132	3	29
Trichlorofluoromethane	ND		0.0250	0.0297		mg/L		119	62 - 150	6	35
Vinyl acetate	ND		0.0250	0.0222		mg/L		89	47 - 150	3	35
Vinyl chloride	ND		0.0250	0.0193		mg/L		77	55 - 146	1	35
Xylenes, Total	ND		0.0500	0.0500		mg/L		100	68 - 131	2	31

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*109*		*70 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-52355-A-1 MSD
Matrix: Water
Analysis Batch: 75442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*

QC Association Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

GC/MS VOA

Analysis Batch: 75442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-52355-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-52355-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
550-52403-1	R-92A-10815	Total/NA	Water	8260B	
550-52403-2	TB	Total/NA	Water	8260B	
LCS 550-75442/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 550-75442/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 550-75442/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Client Sample ID: R-92A-10815

Lab Sample ID: 550-52403-1

Date Collected: 10/08/15 12:45

Matrix: Water

Date Received: 10/08/15 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	75442	10/13/15 00:28	UT	TAL PHX

Client Sample ID: TB

Lab Sample ID: 550-52403-2

Date Collected: 10/08/15 12:45

Matrix: Water

Date Received: 10/08/15 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	75442	10/12/15 19:48	UT	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Laboratory: TestAmerica Phoenix

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-16

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-52403-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX

Protocol References:

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

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Phone: 602.437.3340 Fax:

Chain of Custody Record

52403
113485

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

10/19/2015

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Lori Ehman	Site Contact:	Date:	COC No:
Company Name: City of Tucson Environmental Services	Tel/Fax: 520-837-3702	Lab Contact:	Carrier:	____ of ____ COCs
Address:	Analysis Turnaround Time			Sampler:
City/State/Zip: Tucson AZ	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below ____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Broadway Pantano	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260	Sample Specific Notes:
R-92A-10815	10-8-15	1245	G		3			X	Report to -01
TB					1			X	Low RL's -02

550-52403 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

1.6

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Verdad Group	10-8-15/1553		TA	10/8/15 1553
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company: TA	Date/Time: 10/8/1715	Received in Laboratory by:	Company:	Date/Time: 10-8-15 1715

Login Sample Receipt Checklist

Client: City of Tucson

Job Number: 550-52403-1

Login Number: 52403
List Number: 1
Creator: Doerr, Bret C

List Source: TestAmerica Phoenix

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

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-54141-1
Client Project/Site: Broadway Pantano

For:
City of Tucson
Environmental Services
PO BOX 27210
Tucson, Arizona 85726-7210

Attn: Lori Ehman

Authorized for release by:
11/13/2015 3:34:55 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

Table of Contents

Definitions/Glossary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
B1	Target analyte detected in method blank at or above the method reporting limit.

Glossary

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

Case Narrative

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Job ID: 550-54141-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-54141-1

Comments
No additional comments.

Receipt
The samples were received on 11/10/2015 12:23 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

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

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

Sample Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-54141-1	C-026B	Water	11/10/15 10:00	11/10/15 12:23
550-54141-2	TB	Water	10/27/15 00:00	11/10/15 12:23

Detection Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: C-026B — Lab Sample ID: 550-54141-1

No Detections.

Client Sample ID: TB — Lab Sample ID: 550-54141-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: C-026B
Date Collected: 11/10/15 10:00
Date Received: 11/10/15 12:23

Lab Sample ID: 550-54141-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,1-Dichloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,1-Dichloroethene	ND		0.00050		mg/L			11/11/15 21:23	1
1,1-Dichloropropene	ND		0.00050		mg/L			11/11/15 21:23	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 21:23	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			11/11/15 21:23	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 21:23	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			11/11/15 21:23	1
1,2-Dibromoethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 21:23	1
1,2-Dichloroethane	ND		0.00050		mg/L			11/11/15 21:23	1
1,2-Dichloropropane	ND		0.00050		mg/L			11/11/15 21:23	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 21:23	1
1,3-Dichloropropane	ND		0.00050		mg/L			11/11/15 21:23	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 21:23	1
2,2-Dichloropropane	ND		0.0010		mg/L			11/11/15 21:23	1
2-Butanone (MEK)	ND		0.0050		mg/L			11/11/15 21:23	1
2-Chlorotoluene	ND		0.00050		mg/L			11/11/15 21:23	1
2-Hexanone	ND		0.0050		mg/L			11/11/15 21:23	1
4-Chlorotoluene	ND		0.00050		mg/L			11/11/15 21:23	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			11/11/15 21:23	1
Acetone	ND		0.010		mg/L			11/11/15 21:23	1
Benzene	ND		0.00050		mg/L			11/11/15 21:23	1
Bromobenzene	ND		0.00050		mg/L			11/11/15 21:23	1
Bromochloromethane	ND		0.00050		mg/L			11/11/15 21:23	1
Bromodichloromethane	ND		0.00050		mg/L			11/11/15 21:23	1
Bromoform	ND		0.0010		mg/L			11/11/15 21:23	1
Bromomethane	ND		0.0010		mg/L			11/11/15 21:23	1
Carbon disulfide	ND		0.0010		mg/L			11/11/15 21:23	1
Carbon tetrachloride	ND		0.00050		mg/L			11/11/15 21:23	1
Chlorobenzene	ND		0.00050		mg/L			11/11/15 21:23	1
Chloroethane	ND		0.0010		mg/L			11/11/15 21:23	1
Chloroform	ND		0.00050		mg/L			11/11/15 21:23	1
Chloromethane	ND		0.0010		mg/L			11/11/15 21:23	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 21:23	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 21:23	1
Chlorodibromomethane	ND		0.00050		mg/L			11/11/15 21:23	1
Dibromomethane	ND		0.00050		mg/L			11/11/15 21:23	1
Dichlorodifluoromethane	ND		0.00050		mg/L			11/11/15 21:23	1
Ethylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
Hexachlorobutadiene	ND		0.0010		mg/L			11/11/15 21:23	1
Iodomethane	ND		0.0025		mg/L			11/11/15 21:23	1
Isopropylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
m,p-Xylenes	ND		0.0010		mg/L			11/11/15 21:23	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: C-026B

Date Collected: 11/10/15 10:00
Date Received: 11/10/15 12:23

Lab Sample ID: 550-54141-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	B1	0.0010		mg/L			11/11/15 21:23	1
Methyl tert-butyl ether	ND		0.00050		mg/L			11/11/15 21:23	1
Naphthalene	ND		0.0025		mg/L			11/11/15 21:23	1
n-Butylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
N-Propylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
o-Xylene	ND		0.00050		mg/L			11/11/15 21:23	1
p-Isopropyltoluene	ND		0.00050		mg/L			11/11/15 21:23	1
sec-Butylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
Styrene	ND		0.00050		mg/L			11/11/15 21:23	1
tert-Butylbenzene	ND		0.00050		mg/L			11/11/15 21:23	1
Tetrachloroethene	ND		0.00050		mg/L			11/11/15 21:23	1
Toluene	ND		0.00050		mg/L			11/11/15 21:23	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 21:23	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 21:23	1
Trichloroethene	ND		0.00050		mg/L			11/11/15 21:23	1
Trichlorofluoromethane	ND		0.00050		mg/L			11/11/15 21:23	1
Vinyl acetate	ND		0.0020		mg/L			11/11/15 21:23	1
Vinyl chloride	ND		0.00050		mg/L			11/11/15 21:23	1
Xylenes, Total	ND		0.0015		mg/L			11/11/15 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*70 - 130*		*11/11/15 21:23*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/11/15 21:23*	*1*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*11/11/15 21:23*	*1*

Client Sample ID: TB

Date Collected: 10/27/15 00:00
Date Received: 11/10/15 12:23

Lab Sample ID: 550-54141-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,1-Dichloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,1-Dichloroethene	ND		0.00050		mg/L			11/11/15 15:03	1
1,1-Dichloropropene	ND		0.00050		mg/L			11/11/15 15:03	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 15:03	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			11/11/15 15:03	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 15:03	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			11/11/15 15:03	1
1,2-Dibromoethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 15:03	1
1,2-Dichloroethane	ND		0.00050		mg/L			11/11/15 15:03	1
1,2-Dichloropropane	ND		0.00050		mg/L			11/11/15 15:03	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 15:03	1
1,3-Dichloropropane	ND		0.00050		mg/L			11/11/15 15:03	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: TB
Date Collected: 10/27/15 00:00
Date Received: 11/10/15 12:23

Lab Sample ID: 550-54141-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 15:03	1
2,2-Dichloropropane	ND		0.0010		mg/L			11/11/15 15:03	1
2-Butanone (MEK)	ND		0.0050		mg/L			11/11/15 15:03	1
2-Chlorotoluene	ND		0.00050		mg/L			11/11/15 15:03	1
2-Hexanone	ND		0.0050		mg/L			11/11/15 15:03	1
4-Chlorotoluene	ND		0.00050		mg/L			11/11/15 15:03	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			11/11/15 15:03	1
Acetone	ND		0.010		mg/L			11/11/15 15:03	1
Benzene	ND		0.00050		mg/L			11/11/15 15:03	1
Bromobenzene	ND		0.00050		mg/L			11/11/15 15:03	1
Bromochloromethane	ND		0.00050		mg/L			11/11/15 15:03	1
Bromodichloromethane	ND		0.00050		mg/L			11/11/15 15:03	1
Bromoform	ND		0.0010		mg/L			11/11/15 15:03	1
Bromomethane	ND		0.0010		mg/L			11/11/15 15:03	1
Carbon disulfide	ND		0.0010		mg/L			11/11/15 15:03	1
Carbon tetrachloride	ND		0.00050		mg/L			11/11/15 15:03	1
Chlorobenzene	ND		0.00050		mg/L			11/11/15 15:03	1
Chloroethane	ND		0.0010		mg/L			11/11/15 15:03	1
Chloroform	ND		0.00050		mg/L			11/11/15 15:03	1
Chloromethane	ND		0.0010		mg/L			11/11/15 15:03	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 15:03	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 15:03	1
Chlorodibromomethane	ND		0.00050		mg/L			11/11/15 15:03	1
Dibromomethane	ND		0.00050		mg/L			11/11/15 15:03	1
Dichlorodifluoromethane	ND		0.00050		mg/L			11/11/15 15:03	1
Ethylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
Hexachlorobutadiene	ND		0.0010		mg/L			11/11/15 15:03	1
Iodomethane	ND		0.0025		mg/L			11/11/15 15:03	1
Isopropylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
m,p-Xylenes	ND		0.0010		mg/L			11/11/15 15:03	1
Methylene Chloride	ND	B1	0.0010		mg/L			11/11/15 15:03	1
Methyl tert-butyl ether	ND		0.00050		mg/L			11/11/15 15:03	1
Naphthalene	ND		0.0025		mg/L			11/11/15 15:03	1
n-Butylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
N-Propylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
o-Xylene	ND		0.00050		mg/L			11/11/15 15:03	1
p-Isopropyltoluene	ND		0.00050		mg/L			11/11/15 15:03	1
sec-Butylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
Styrene	ND		0.00050		mg/L			11/11/15 15:03	1
tert-Butylbenzene	ND		0.00050		mg/L			11/11/15 15:03	1
Tetrachloroethene	ND		0.00050		mg/L			11/11/15 15:03	1
Toluene	ND		0.00050		mg/L			11/11/15 15:03	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 15:03	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 15:03	1
Trichloroethene	ND		0.00050		mg/L			11/11/15 15:03	1
Trichlorofluoromethane	ND		0.00050		mg/L			11/11/15 15:03	1
Vinyl acetate	ND		0.0020		mg/L			11/11/15 15:03	1
Vinyl chloride	ND		0.00050		mg/L			11/11/15 15:03	1
Xylenes, Total	ND		0.0015		mg/L			11/11/15 15:03	1

Client Sample Results

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: TB
Date Collected: 10/27/15 00:00
Date Received: 11/10/15 12:23

Lab Sample ID: 550-54141-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	118		70 - 130		11/11/15 15:03	1
Toluene-d8 (Surr)	93		70 - 130		11/11/15 15:03	1
4-Bromofluorobenzene (Surr)	92		70 - 130		11/11/15 15:03	1

Surrogate Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-54124-A-1 MS	Matrix Spike	111	97	90
550-54124-A-1 MSD	Matrix Spike Duplicate	108	99	93
550-54141-1	C-026B	116	95	88
550-54141-2	TB	118	93	92
LCS 550-77713/3	Lab Control Sample	105	96	93
LCSD 550-77713/4	Lab Control Sample Dup	103	96	92
MB 550-77713/5	Method Blank	109	89	86

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 550-77713/5
Matrix: Water
Analysis Batch: 77713

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,1-Dichloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,1-Dichloroethene	ND		0.00050		mg/L			11/11/15 13:29	1
1,1-Dichloropropene	ND		0.00050		mg/L			11/11/15 13:29	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 13:29	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			11/11/15 13:29	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			11/11/15 13:29	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			11/11/15 13:29	1
1,2-Dibromoethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 13:29	1
1,2-Dichloroethane	ND		0.00050		mg/L			11/11/15 13:29	1
1,2-Dichloropropane	ND		0.00050		mg/L			11/11/15 13:29	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 13:29	1
1,3-Dichloropropane	ND		0.00050		mg/L			11/11/15 13:29	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			11/11/15 13:29	1
2,2-Dichloropropane	ND		0.0010		mg/L			11/11/15 13:29	1
2-Butanone (MEK)	ND		0.0050		mg/L			11/11/15 13:29	1
2-Chlorotoluene	ND		0.00050		mg/L			11/11/15 13:29	1
2-Hexanone	ND		0.0050		mg/L			11/11/15 13:29	1
4-Chlorotoluene	ND		0.00050		mg/L			11/11/15 13:29	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			11/11/15 13:29	1
Acetone	ND		0.010		mg/L			11/11/15 13:29	1
Benzene	ND		0.00050		mg/L			11/11/15 13:29	1
Bromobenzene	ND		0.00050		mg/L			11/11/15 13:29	1
Bromochloromethane	ND		0.00050		mg/L			11/11/15 13:29	1
Bromodichloromethane	ND		0.00050		mg/L			11/11/15 13:29	1
Bromoform	ND		0.0010		mg/L			11/11/15 13:29	1
Bromomethane	ND		0.0010		mg/L			11/11/15 13:29	1
Carbon disulfide	ND		0.0010		mg/L			11/11/15 13:29	1
Carbon tetrachloride	ND		0.00050		mg/L			11/11/15 13:29	1
Chlorobenzene	ND		0.00050		mg/L			11/11/15 13:29	1
Chloroethane	ND		0.0010		mg/L			11/11/15 13:29	1
Chloroform	ND		0.00050		mg/L			11/11/15 13:29	1
Chloromethane	ND		0.0010		mg/L			11/11/15 13:29	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 13:29	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 13:29	1
Chlorodibromomethane	ND		0.00050		mg/L			11/11/15 13:29	1
Dibromomethane	ND		0.00050		mg/L			11/11/15 13:29	1
Dichlorodifluoromethane	ND		0.00050		mg/L			11/11/15 13:29	1
Ethylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
Hexachlorobutadiene	ND		0.0010		mg/L			11/11/15 13:29	1
Iodomethane	ND		0.0025		mg/L			11/11/15 13:29	1
Isopropylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 550-77713/5
Matrix: Water
Analysis Batch: 77713

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	ND		0.0010		mg/L			11/11/15 13:29	1
Methylene Chloride	0.00101	B1	0.0010		mg/L			11/11/15 13:29	1
Methyl tert-butyl ether	ND		0.00050		mg/L			11/11/15 13:29	1
Naphthalene	ND		0.0025		mg/L			11/11/15 13:29	1
n-Butylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
N-Propylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
o-Xylene	ND		0.00050		mg/L			11/11/15 13:29	1
p-Isopropyltoluene	ND		0.00050		mg/L			11/11/15 13:29	1
sec-Butylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
Styrene	ND		0.00050		mg/L			11/11/15 13:29	1
tert-Butylbenzene	ND		0.00050		mg/L			11/11/15 13:29	1
Tetrachloroethene	ND		0.00050		mg/L			11/11/15 13:29	1
Toluene	ND		0.00050		mg/L			11/11/15 13:29	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			11/11/15 13:29	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			11/11/15 13:29	1
Trichloroethene	ND		0.00050		mg/L			11/11/15 13:29	1
Trichlorofluoromethane	ND		0.00050		mg/L			11/11/15 13:29	1
Vinyl acetate	ND		0.0020		mg/L			11/11/15 13:29	1
Vinyl chloride	ND		0.00050		mg/L			11/11/15 13:29	1
Xylenes, Total	ND		0.0015		mg/L			11/11/15 13:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*11/11/15 13:29*	*1*
Toluene-d8 (Surr)	*89*		*70 - 130*		*11/11/15 13:29*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*11/11/15 13:29*	*1*

Lab Sample ID: LCS 550-77713/3
Matrix: Water
Analysis Batch: 77713

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.0250	0.0231		mg/L		92	70 - 130
1,1,1-Trichloroethane	0.0250	0.0243		mg/L		97	71 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0261		mg/L		104	70 - 130
1,1,2-Trichloroethane	0.0250	0.0230		mg/L		92	70 - 130
1,1-Dichloroethane	0.0250	0.0288		mg/L		115	70 - 130
1,1-Dichloroethene	0.0250	0.0256		mg/L		102	63 - 131
1,1-Dichloropropene	0.0250	0.0242		mg/L		97	70 - 130
1,2,3-Trichlorobenzene	0.0250	0.0200		mg/L		80	79 - 139
1,2,3-Trichloropropane	0.0250	0.0249		mg/L		100	70 - 130
1,2,4-Trichlorobenzene	0.0250	0.0207		mg/L		83	80 - 137
1,2,4-Trimethylbenzene	0.0250	0.0243		mg/L		97	70 - 130
1,2-Dibromo-3-Chloropropane	0.0250	0.0233		mg/L		93	63 - 146
1,2-Dibromoethane	0.0250	0.0243		mg/L		97	70 - 130
1,2-Dichlorobenzene	0.0250	0.0239		mg/L		96	70 - 130
1,2-Dichloroethane	0.0250	0.0282		mg/L		113	66 - 139
1,2-Dichloropropane	0.0250	0.0267		mg/L		107	70 - 130
1,3,5-Trimethylbenzene	0.0250	0.0242		mg/L		97	70 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-77713/3
Matrix: Water
Analysis Batch: 77713

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0250	0.0241		mg/L		97	70 - 130
1,3-Dichloropropane	0.0250	0.0259		mg/L		104	70 - 130
1,4-Dichlorobenzene	0.0250	0.0231		mg/L		92	70 - 130
2,2-Dichloropropane	0.0250	0.0275		mg/L		110	69 - 139
2-Butanone (MEK)	0.0250	0.0308		mg/L		123	53 - 150
2-Chlorotoluene	0.0250	0.0236		mg/L		94	70 - 130
2-Hexanone	0.0250	0.0244		mg/L		97	55 - 150
4-Chlorotoluene	0.0250	0.0251		mg/L		100	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0250	0.0268		mg/L		107	64 - 142
Acetone	0.0250	0.0272		mg/L		109	38 - 150
Benzene	0.0250	0.0256		mg/L		102	70 - 130
Bromobenzene	0.0250	0.0251		mg/L		100	70 - 130
Bromochloromethane	0.0250	0.0268		mg/L		107	70 - 130
Bromodichloromethane	0.0250	0.0239		mg/L		96	70 - 130
Bromoform	0.0250	0.0221		mg/L		88	69 - 129
Bromomethane	0.0250	0.0227		mg/L		91	57 - 138
Carbon disulfide	0.0250	0.0214		mg/L		86	64 - 145
Carbon tetrachloride	0.0250	0.0223		mg/L		89	70 - 143
Chlorobenzene	0.0250	0.0239		mg/L		96	70 - 130
Chloroethane	0.0250	0.0276		mg/L		110	66 - 131
Chloroform	0.0250	0.0262		mg/L		105	70 - 130
Chloromethane	0.0250	0.0231		mg/L		93	56 - 129
cis-1,2-Dichloroethene	0.0250	0.0258		mg/L		103	70 - 130
cis-1,3-Dichloropropene	0.0250	0.0257		mg/L		103	70 - 130
Chlorodibromomethane	0.0250	0.0229		mg/L		92	70 - 130
Dibromomethane	0.0250	0.0241		mg/L		96	70 - 130
Dichlorodifluoromethane	0.0250	0.0236		mg/L		95	46 - 144
Ethylbenzene	0.0250	0.0245		mg/L		98	70 - 130
Hexachlorobutadiene	0.0250	0.0222		mg/L		89	76 - 145
Iodomethane	0.0250	0.0235		mg/L		94	70 - 130
Isopropylbenzene	0.0250	0.0263		mg/L		105	88 - 141
m,p-Xylenes	0.0250	0.0232		mg/L		93	70 - 130
Methylene Chloride	0.0250	0.0288		mg/L		115	63 - 128
Methyl tert-butyl ether	0.0250	0.0265		mg/L		106	70 - 130
Naphthalene	0.0250	0.0208		mg/L		83	78 - 143
n-Butylbenzene	0.0250	0.0240		mg/L		96	70 - 130
N-Propylbenzene	0.0250	0.0264		mg/L		106	70 - 130
o-Xylene	0.0250	0.0239		mg/L		96	70 - 130
p-Isopropyltoluene	0.0250	0.0245		mg/L		98	70 - 130
sec-Butylbenzene	0.0250	0.0239		mg/L		95	70 - 130
Styrene	0.0250	0.0237		mg/L		95	70 - 130
Tetrachloroethene	0.0250	0.0222		mg/L		89	70 - 130
Toluene	0.0250	0.0239		mg/L		95	70 - 130
trans-1,2-Dichloroethene	0.0250	0.0263		mg/L		105	69 - 127
trans-1,3-Dichloropropene	0.0250	0.0244		mg/L		98	70 - 130
Trichloroethene	0.0250	0.0230		mg/L		92	70 - 130
Trichlorofluoromethane	0.0250	0.0265		mg/L		106	69 - 150
Vinyl acetate	0.0250	0.0304		mg/L		122	67 - 148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-77713/3
Matrix: Water
Analysis Batch: 77713

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	0.0250	0.0228		mg/L		91	65 - 137
Xylenes, Total	0.0500	0.0471		mg/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 550-77713/4
Matrix: Water
Analysis Batch: 77713

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.0250	0.0232		mg/L		93	70 - 130	0	20
1,1,1-Trichloroethane	0.0250	0.0248		mg/L		99	71 - 131	2	20
1,1,2,2-Tetrachloroethane	0.0250	0.0255		mg/L		102	70 - 130	2	20
1,1,2-Trichloroethane	0.0250	0.0226		mg/L		90	70 - 130	2	20
1,1-Dichloroethane	0.0250	0.0280		mg/L		112	70 - 130	3	20
1,1-Dichloroethene	0.0250	0.0259		mg/L		103	63 - 131	1	22
1,1-Dichloropropene	0.0250	0.0248		mg/L		99	70 - 130	3	20
1,2,3-Trichlorobenzene	0.0250	0.0204		mg/L		82	79 - 139	2	20
1,2,3-Trichloropropane	0.0250	0.0246		mg/L		99	70 - 130	1	20
1,2,4-Trichlorobenzene	0.0250	0.0211		mg/L		84	80 - 137	2	20
1,2,4-Trimethylbenzene	0.0250	0.0253		mg/L		101	70 - 130	4	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0238		mg/L		95	63 - 146	2	22
1,2-Dibromoethane	0.0250	0.0234		mg/L		93	70 - 130	4	20
1,2-Dichlorobenzene	0.0250	0.0244		mg/L		98	70 - 130	2	20
1,2-Dichloroethane	0.0250	0.0276		mg/L		110	66 - 139	2	20
1,2-Dichloropropane	0.0250	0.0268		mg/L		107	70 - 130	0	20
1,3,5-Trimethylbenzene	0.0250	0.0257		mg/L		103	70 - 130	6	20
1,3-Dichlorobenzene	0.0250	0.0246		mg/L		98	70 - 130	2	20
1,3-Dichloropropane	0.0250	0.0250		mg/L		100	70 - 130	4	20
1,4-Dichlorobenzene	0.0250	0.0236		mg/L		95	70 - 130	2	20
2,2-Dichloropropane	0.0250	0.0273		mg/L		109	69 - 139	1	20
2-Butanone (MEK)	0.0250	0.0254		mg/L		102	53 - 150	19	35
2-Chlorotoluene	0.0250	0.0250		mg/L		100	70 - 130	6	20
2-Hexanone	0.0250	0.0205		mg/L		82	55 - 150	17	35
4-Chlorotoluene	0.0250	0.0258		mg/L		103	70 - 130	3	20
4-Methyl-2-pentanone (MIBK)	0.0250	0.0259		mg/L		104	64 - 142	4	25
Acetone	0.0250	0.0207		mg/L		83	38 - 150	27	35
Benzene	0.0250	0.0258		mg/L		103	70 - 130	1	20
Bromobenzene	0.0250	0.0253		mg/L		101	70 - 130	1	20
Bromochloromethane	0.0250	0.0264		mg/L		106	70 - 130	1	20
Bromodichloromethane	0.0250	0.0236		mg/L		94	70 - 130	1	20
Bromoform	0.0250	0.0223		mg/L		89	69 - 129	1	20
Bromomethane	0.0250	0.0218		mg/L		87	57 - 138	4	20
Carbon disulfide	0.0250	0.0217		mg/L		87	64 - 145	1	33
Carbon tetrachloride	0.0250	0.0229		mg/L		91	70 - 143	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 550-77713/4
Matrix: Water
Analysis Batch: 77713

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	0.0250	0.0239		mg/L		96	70 - 130	0	20
Chloroethane	0.0250	0.0272		mg/L		109	66 - 131	1	20
Chloroform	0.0250	0.0262		mg/L		105	70 - 130	0	20
Chloromethane	0.0250	0.0228		mg/L		91	56 - 129	2	20
cis-1,2-Dichloroethene	0.0250	0.0263		mg/L		105	70 - 130	2	20
cis-1,3-Dichloropropene	0.0250	0.0253		mg/L		101	70 - 130	2	20
Chlorodibromomethane	0.0250	0.0226		mg/L		91	70 - 130	1	20
Dibromomethane	0.0250	0.0240		mg/L		96	70 - 130	0	20
Dichlorodifluoromethane	0.0250	0.0233		mg/L		93	46 - 144	1	23
Ethylbenzene	0.0250	0.0248		mg/L		99	70 - 130	1	20
Hexachlorobutadiene	0.0250	0.0232		mg/L		93	76 - 145	4	20
Iodomethane	0.0250	0.0239		mg/L		96	70 - 130	2	20
Isopropylbenzene	0.0250	0.0269		mg/L		108	88 - 141	2	20
m,p-Xylenes	0.0250	0.0232		mg/L		93	70 - 130	0	20
Methylene Chloride	0.0250	0.0285		mg/L		114	63 - 128	1	21
Methyl tert-butyl ether	0.0250	0.0252		mg/L		101	70 - 130	5	20
Naphthalene	0.0250	0.0210		mg/L		84	78 - 143	1	20
n-Butylbenzene	0.0250	0.0249		mg/L		100	70 - 130	4	20
N-Propylbenzene	0.0250	0.0272		mg/L		109	70 - 130	3	20
o-Xylene	0.0250	0.0238		mg/L		95	70 - 130	1	20
p-Isopropyltoluene	0.0250	0.0255		mg/L		102	70 - 130	4	20
sec-Butylbenzene	0.0250	0.0253		mg/L		101	70 - 130	6	20
Styrene	0.0250	0.0235		mg/L		94	70 - 130	1	20
Tetrachloroethene	0.0250	0.0221		mg/L		88	70 - 130	1	20
Toluene	0.0250	0.0241		mg/L		97	70 - 130	1	20
trans-1,2-Dichloroethene	0.0250	0.0260		mg/L		104	69 - 127	1	20
trans-1,3-Dichloropropene	0.0250	0.0238		mg/L		95	70 - 130	3	20
Trichloroethene	0.0250	0.0238		mg/L		95	70 - 130	3	20
Trichlorofluoromethane	0.0250	0.0275		mg/L		110	69 - 150	4	22
Vinyl acetate	0.0250	0.0283		mg/L		113	67 - 148	7	22
Vinyl chloride	0.0250	0.0225		mg/L		90	65 - 137	1	20
Xylenes, Total	0.0500	0.0470		mg/L		94	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 550-54124-A-1 MS
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0233		mg/L		93	70 - 130
1,1,1-Trichloroethane	ND		0.0250	0.0243		mg/L		97	64 - 138
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0264		mg/L		106	63 - 137
1,1,2-Trichloroethane	ND		0.0250	0.0252		mg/L		101	63 - 132
1,1-Dichloroethane	ND		0.0250	0.0286		mg/L		114	62 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-54124-A-1 MS
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		0.0250	0.0224		mg/L		90	57 - 137
1,1-Dichloropropene	ND		0.0250	0.0233		mg/L		93	64 - 134
1,2,3-Trichlorobenzene	ND		0.0250	0.0290		mg/L		116	74 - 139
1,2,3-Trichloropropane	ND		0.0250	0.0273		mg/L		109	68 - 130
1,2,4-Trichlorobenzene	ND		0.0250	0.0287		mg/L		115	74 - 138
1,2,4-Trimethylbenzene	0.083		0.0250	0.104		mg/L		82	63 - 135
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0302		mg/L		121	53 - 145
1,2-Dibromoethane	ND		0.0250	0.0250		mg/L		100	70 - 130
1,2-Dichlorobenzene	ND		0.0250	0.0265		mg/L		106	70 - 130
1,2-Dichloroethane	ND		0.0250	0.0295		mg/L		118	54 - 147
1,2-Dichloropropane	ND		0.0250	0.0266		mg/L		106	68 - 126
1,3,5-Trimethylbenzene	0.039		0.0250	0.0616		mg/L		89	66 - 137
1,3-Dichlorobenzene	ND		0.0250	0.0264		mg/L		106	70 - 130
1,3-Dichloropropane	ND		0.0250	0.0266		mg/L		106	68 - 129
1,4-Dichlorobenzene	ND		0.0250	0.0252		mg/L		101	70 - 130
2,2-Dichloropropane	ND		0.0250	0.0245		mg/L		98	60 - 146
2-Butanone (MEK)	0.020		0.0250	0.0422		mg/L		88	31 - 143
2-Chlorotoluene	ND		0.0250	0.0289		mg/L		115	71 - 131
2-Hexanone	ND		0.0250	0.0226		mg/L		91	40 - 142
4-Chlorotoluene	ND		0.0250	0.0280		mg/L		112	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0026		0.0250	0.0326		mg/L		120	52 - 143
Acetone	ND	M1	0.0250	0.191	E2 M1	mg/L		763	29 - 139
Benzene	0.14	M3	0.0250	0.152	M3	mg/L		54	68 - 131
Bromobenzene	ND		0.0250	0.0257		mg/L		103	70 - 130
Bromochloromethane	ND		0.0250	0.0280		mg/L		112	64 - 132
Bromodichloromethane	ND		0.0250	0.0245		mg/L		97	63 - 138
Bromoform	ND		0.0250	0.0238		mg/L		95	60 - 128
Bromomethane	ND		0.0250	0.0237		mg/L		95	47 - 144
Carbon disulfide	ND		0.0250	0.0274		mg/L		110	45 - 150
Carbon tetrachloride	ND		0.0250	0.0208		mg/L		83	65 - 147
Chlorobenzene	ND		0.0250	0.0244		mg/L		98	70 - 130
Chloroethane	ND		0.0250	0.0260		mg/L		104	57 - 139
Chloroform	0.0017		0.0250	0.0283		mg/L		106	63 - 131
Chloromethane	ND		0.0250	0.0246		mg/L		98	47 - 134
cis-1,2-Dichloroethene	ND		0.0250	0.0265		mg/L		106	65 - 127
cis-1,3-Dichloropropene	ND		0.0250	0.0235		mg/L		94	63 - 135
Chlorodibromomethane	ND		0.0250	0.0234		mg/L		93	65 - 134
Dibromomethane	ND		0.0250	0.0249		mg/L		99	66 - 136
Dichlorodifluoromethane	ND		0.0250	0.0282		mg/L		113	40 - 148
Ethylbenzene	0.072	M2	0.0250	0.0909		mg/L		75	74 - 134
Hexachlorobutadiene	ND		0.0250	0.0251		mg/L		100	69 - 150
Iodomethane	ND		0.0250	0.0277		mg/L		111	53 - 150
Isopropylbenzene	0.014		0.0250	0.0372		mg/L		92	80 - 146
m,p-Xylenes	0.26	E2 M3	0.0250	0.271	E2 M3	mg/L		65	58 - 138
Methylene Chloride	ND	B1	0.0250	0.0264		mg/L		106	55 - 133
Methyl tert-butyl ether	0.045		0.0250	0.0713		mg/L		105	67 - 138
Naphthalene	ND		0.0250	0.0321		mg/L		126	67 - 146
n-Butylbenzene	0.0031		0.0250	0.0299		mg/L		107	69 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-54124-A-1 MS
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Propylbenzene	0.015		0.0250	0.0402		mg/L		99	74 - 140
o-Xylene	0.076		0.0250	0.0973		mg/L		86	66 - 137
p-Isopropyltoluene	0.00083		0.0250	0.0269		mg/L		104	70 - 133
sec-Butylbenzene	0.0013		0.0250	0.0270		mg/L		103	72 - 136
Styrene	ND		0.0250	0.0224		mg/L		90	43 - 144
Tetrachloroethene	ND		0.0250	0.0206		mg/L		83	67 - 131
Toluene	0.16	M3	0.0250	0.174	M3	mg/L		65	65 - 138
trans-1,2-Dichloroethene	ND		0.0250	0.0245		mg/L		98	62 - 131
trans-1,3-Dichloropropene	ND		0.0250	0.0246		mg/L		98	58 - 136
Trichloroethene	ND		0.0250	0.0225		mg/L		90	66 - 132
Trichlorofluoromethane	ND		0.0250	0.0243		mg/L		97	62 - 150
Vinyl acetate	ND		0.0250	0.0306		mg/L		123	47 - 150
Vinyl chloride	ND		0.0250	0.0222		mg/L		89	55 - 146
Xylenes, Total	0.34	M3	0.0500	0.368	M3	mg/L		65	68 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 550-54124-A-1 MSD
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0237		mg/L		95	70 - 130	2	30
1,1,1-Trichloroethane	ND		0.0250	0.0238		mg/L		95	64 - 138	2	35
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0245		mg/L		98	63 - 137	7	32
1,1,2-Trichloroethane	ND		0.0250	0.0251		mg/L		100	63 - 132	0	35
1,1-Dichloroethane	ND		0.0250	0.0272		mg/L		109	62 - 130	5	34
1,1-Dichloroethene	ND		0.0250	0.0221		mg/L		89	57 - 137	1	35
1,1-Dichloropropene	ND		0.0250	0.0231		mg/L		92	64 - 134	1	34
1,2,3-Trichlorobenzene	ND		0.0250	0.0289		mg/L		116	74 - 139	0	26
1,2,3-Trichloropropane	ND		0.0250	0.0253		mg/L		101	68 - 130	8	32
1,2,4-Trichlorobenzene	ND		0.0250	0.0291		mg/L		116	74 - 138	1	26
1,2,4-Trimethylbenzene	0.083		0.0250	0.105		mg/L		87	63 - 135	1	31
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0274		mg/L		109	53 - 145	10	35
1,2-Dibromoethane	ND		0.0250	0.0233		mg/L		93	70 - 130	7	33
1,2-Dichlorobenzene	ND		0.0250	0.0268		mg/L		107	70 - 130	1	27
1,2-Dichloroethane	ND		0.0250	0.0282		mg/L		113	54 - 147	4	35
1,2-Dichloropropane	ND		0.0250	0.0265		mg/L		106	68 - 126	0	32
1,3,5-Trimethylbenzene	0.039		0.0250	0.0621		mg/L		91	66 - 137	1	30
1,3-Dichlorobenzene	ND		0.0250	0.0261		mg/L		104	70 - 130	1	28
1,3-Dichloropropane	ND		0.0250	0.0253		mg/L		101	68 - 129	5	33
1,4-Dichlorobenzene	ND		0.0250	0.0259		mg/L		104	70 - 130	3	26
2,2-Dichloropropane	ND		0.0250	0.0235		mg/L		94	60 - 146	4	35
2-Butanone (MEK)	0.020		0.0250	0.0389		mg/L		74	31 - 143	8	35
2-Chlorotoluene	ND		0.0250	0.0290		mg/L		116	71 - 131	1	29

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-54124-A-1 MSD
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		0.0250	0.0211		mg/L		85	40 - 142	7	35
4-Chlorotoluene	ND		0.0250	0.0273		mg/L		109	70 - 130	2	28
4-Methyl-2-pentanone (MIBK)	0.0026		0.0250	0.0286		mg/L		104	52 - 143	13	35
Acetone	ND	M1	0.0250	0.176	E2 M1	mg/L		704	29 - 139	8	35
Benzene	0.14	M3	0.0250	0.149	M3	mg/L		43	68 - 131	2	32
Bromobenzene	ND		0.0250	0.0259		mg/L		104	70 - 130	1	28
Bromochloromethane	ND		0.0250	0.0259		mg/L		104	64 - 132	8	35
Bromodichloromethane	ND		0.0250	0.0229		mg/L		90	63 - 138	7	31
Bromoform	ND		0.0250	0.0231		mg/L		93	60 - 128	3	31
Bromomethane	ND		0.0250	0.0233		mg/L		93	47 - 144	2	35
Carbon disulfide	ND		0.0250	0.0269		mg/L		108	45 - 150	2	35
Carbon tetrachloride	ND		0.0250	0.0213		mg/L		85	65 - 147	2	35
Chlorobenzene	ND		0.0250	0.0247		mg/L		99	70 - 130	1	30
Chloroethane	ND		0.0250	0.0258		mg/L		103	57 - 139	1	35
Chloroform	0.0017		0.0250	0.0271		mg/L		102	63 - 131	4	33
Chloromethane	ND		0.0250	0.0242		mg/L		97	47 - 134	1	35
cis-1,2-Dichloroethene	ND		0.0250	0.0248		mg/L		99	65 - 127	6	34
cis-1,3-Dichloropropene	ND		0.0250	0.0232		mg/L		93	63 - 135	1	35
Chlorodibromomethane	ND		0.0250	0.0230		mg/L		92	65 - 134	2	33
Dibromomethane	ND		0.0250	0.0242		mg/L		97	66 - 136	3	35
Dichlorodifluoromethane	ND		0.0250	0.0280		mg/L		112	40 - 148	1	35
Ethylbenzene	0.072	M2	0.0250	0.0900	M2	mg/L		72	74 - 134	1	32
Hexachlorobutadiene	ND		0.0250	0.0263		mg/L		105	69 - 150	4	32
Iodomethane	ND		0.0250	0.0270		mg/L		108	53 - 150	3	35
Isopropylbenzene	0.014		0.0250	0.0373		mg/L		92	80 - 146	0	32
m,p-Xylenes	0.26	E2 M3	0.0250	0.267	E2 M3	mg/L		48	58 - 138	2	29
Methylene Chloride	ND	B1	0.0250	0.0265		mg/L		106	55 - 133	0	35
Methyl tert-butyl ether	0.045		0.0250	0.0657		mg/L		83	67 - 138	8	21
Naphthalene	ND		0.0250	0.0321		mg/L		126	67 - 146	0	29
n-Butylbenzene	0.0031		0.0250	0.0309		mg/L		111	69 - 140	3	32
N-Propylbenzene	0.015		0.0250	0.0404		mg/L		100	74 - 140	1	32
o-Xylene	0.076		0.0250	0.0952		mg/L		78	66 - 137	2	26
p-Isopropyltoluene	0.00083		0.0250	0.0272		mg/L		105	70 - 133	1	32
sec-Butylbenzene	0.0013		0.0250	0.0275		mg/L		105	72 - 136	2	33
Styrene	ND		0.0250	0.0225		mg/L		90	43 - 144	0	35
Tetrachloroethene	ND		0.0250	0.0208		mg/L		83	67 - 131	1	31
Toluene	0.16	M3	0.0250	0.170	M3	mg/L		50	65 - 138	2	33
trans-1,2-Dichloroethene	ND		0.0250	0.0239		mg/L		96	62 - 131	2	35
trans-1,3-Dichloropropene	ND		0.0250	0.0243		mg/L		97	58 - 136	1	35
Trichloroethene	ND		0.0250	0.0229		mg/L		92	66 - 132	2	29
Trichlorofluoromethane	ND		0.0250	0.0240		mg/L		96	62 - 150	1	35
Vinyl acetate	ND		0.0250	0.0293		mg/L		117	47 - 150	4	35
Vinyl chloride	ND		0.0250	0.0215		mg/L		86	55 - 146	3	35
Xylenes, Total	0.34	M3	0.0500	0.362	M3	mg/L		52	68 - 131	2	31

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-54124-A-1 MSD
Matrix: Water
Analysis Batch: 77713

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

QC Association Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

GC/MS VOA

Analysis Batch: 77713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-54124-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-54124-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
550-54141-1	C-026B	Total/NA	Water	8260B	
550-54141-2	TB	Total/NA	Water	8260B	
LCS 550-77713/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 550-77713/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 550-77713/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Client Sample ID: C-026B

Lab Sample ID: 550-54141-1

Date Collected: 11/10/15 10:00

Matrix: Water

Date Received: 11/10/15 12:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	77713	11/11/15 21:23	UT	TAL PHX

Client Sample ID: TB

Lab Sample ID: 550-54141-2

Date Collected: 10/27/15 00:00

Matrix: Water

Date Received: 11/10/15 12:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	77713	11/11/15 15:03	UT	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Laboratory: TestAmerica Phoenix

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-16

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-54141-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX

Protocol References:

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

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Phone: 602.437.3340 Fax:

Chain of Custody Record

550-54141

097348

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

11/13/2015

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Lori Ehman	Site Contact:	Date:	COC No:
Company Name: City of Tucson ES	Tel/Fax: 520-837-3702	Lab Contact:	Carrier:	____ of ____ COCs
Address:	Analysis Turnaround Time			Sampler: Mac - Taylor
City/State/Zip: Tucson, AZ	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 520-837-3702	TAT if different from Below ____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Broadway Pantano	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	$360	Sample Specific Notes:
C-026B -01	11-10-15	1000	G		3			X	Report to
TB -02	10-27-15				1			X	Low RL's

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for____ Months

Special Instructions/QC Requirements & Comments:

2 i 0C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Verdad Group	11-10-15 1223			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 11/10/15 1223

Login Sample Receipt Checklist

Client: City of Tucson

Job Number: 550-54141-1

Login Number: 54141
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-55537-1
Client Project/Site: Broadway Pantano

For:
City of Tucson
Environmental Services
PO BOX 27210
Tucson, Arizona 85726-7210

Attn: Lori Ehman

Authorized for release by:
12/14/2015 1:54:53 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

Table of Contents

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Glossary

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

Case Narrative

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Job ID: 550-55537-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-55537-1

Comments
No additional comments.

Receipt
The samples were received on 12/8/2015 5:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

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

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

Sample Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-55537-1	R-90A-25	Water	12/08/15 10:26	12/08/15 17:05
550-55537-2	R-92A	Water	12/08/15 11:45	12/08/15 17:05
550-55537-3	TB	Water	12/08/15 00:00	12/08/15 17:05

Detection Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Client Sample ID: R-90A-25 — Lab Sample ID: 550-55537-1

No Detections.

Client Sample ID: R-92A — Lab Sample ID: 550-55537-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	0.00072		0.00050		mg/L	1		8260B	Total/NA
Tetrachloroethene	0.0017		0.00050		mg/L	1		8260B	Total/NA

Client Sample ID: TB — Lab Sample ID: 550-55537-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: R-90A-25
Date Collected: 12/08/15 10:26
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,1-Dichloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,1-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:46	1
1,1-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:46	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 15:46	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			12/11/15 15:46	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 15:46	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			12/11/15 15:46	1
1,2-Dibromoethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:46	1
1,2-Dichloroethane	ND		0.00050		mg/L			12/11/15 15:46	1
1,2-Dichloropropane	ND		0.00050		mg/L			12/11/15 15:46	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:46	1
1,3-Dichloropropane	ND		0.00050		mg/L			12/11/15 15:46	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:46	1
2,2-Dichloropropane	ND		0.0010		mg/L			12/11/15 15:46	1
2-Butanone (MEK)	ND		0.0050		mg/L			12/11/15 15:46	1
2-Chlorotoluene	ND		0.00050		mg/L			12/11/15 15:46	1
2-Hexanone	ND		0.0050		mg/L			12/11/15 15:46	1
4-Chlorotoluene	ND		0.00050		mg/L			12/11/15 15:46	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			12/11/15 15:46	1
Acetone	ND		0.010		mg/L			12/11/15 15:46	1
Benzene	ND		0.00050		mg/L			12/11/15 15:46	1
Bromobenzene	ND		0.00050		mg/L			12/11/15 15:46	1
Bromochloromethane	ND		0.00050		mg/L			12/11/15 15:46	1
Bromodichloromethane	ND		0.00050		mg/L			12/11/15 15:46	1
Bromoform	ND		0.0010		mg/L			12/11/15 15:46	1
Bromomethane	ND		0.0010		mg/L			12/11/15 15:46	1
Carbon disulfide	ND		0.0010		mg/L			12/11/15 15:46	1
Carbon tetrachloride	ND		0.00050		mg/L			12/11/15 15:46	1
Chlorobenzene	ND		0.00050		mg/L			12/11/15 15:46	1
Chloroethane	ND		0.0010		mg/L			12/11/15 15:46	1
Chloroform	ND		0.00050		mg/L			12/11/15 15:46	1
Chloromethane	ND		0.0010		mg/L			12/11/15 15:46	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:46	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:46	1
Chlorodibromomethane	ND		0.00050		mg/L			12/11/15 15:46	1
Dibromomethane	ND		0.00050		mg/L			12/11/15 15:46	1
Dichlorodifluoromethane	ND		0.00050		mg/L			12/11/15 15:46	1
Ethylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
Hexachlorobutadiene	ND		0.0010		mg/L			12/11/15 15:46	1
Iodomethane	ND		0.0025		mg/L			12/11/15 15:46	1
Isopropylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
m,p-Xylenes	ND		0.0010		mg/L			12/11/15 15:46	1

Client Sample ID: R-90A-25

Date Collected: 12/08/15 10:26
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		0.0010		mg/L			12/11/15 15:46	1
Methyl tert-butyl ether	ND		0.00050		mg/L			12/11/15 15:46	1
Naphthalene	ND		0.0025		mg/L			12/11/15 15:46	1
n-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
N-Propylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
o-Xylene	ND		0.00050		mg/L			12/11/15 15:46	1
p-Isopropyltoluene	ND		0.00050		mg/L			12/11/15 15:46	1
sec-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
Styrene	ND		0.00050		mg/L			12/11/15 15:46	1
tert-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:46	1
Tetrachloroethene	ND		0.00050		mg/L			12/11/15 15:46	1
Toluene	ND		0.00050		mg/L			12/11/15 15:46	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:46	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:46	1
Trichloroethene	ND		0.00050		mg/L			12/11/15 15:46	1
Trichlorofluoromethane	ND		0.00050		mg/L			12/11/15 15:46	1
Vinyl acetate	ND		0.0020		mg/L			12/11/15 15:46	1
Vinyl chloride	ND		0.00050		mg/L			12/11/15 15:46	1
Xylenes, Total	ND		0.0015		mg/L			12/11/15 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*70 - 130*		*12/11/15 15:46*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*12/11/15 15:46*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*12/11/15 15:46*	*1*

Client Sample ID: R-92A

Date Collected: 12/08/15 11:45
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,1-Dichloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,1-Dichloroethene	ND		0.00050		mg/L			12/11/15 17:22	1
1,1-Dichloropropene	ND		0.00050		mg/L			12/11/15 17:22	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 17:22	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			12/11/15 17:22	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 17:22	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			12/11/15 17:22	1
1,2-Dibromoethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 17:22	1
1,2-Dichloroethane	ND		0.00050		mg/L			12/11/15 17:22	1
1,2-Dichloropropane	ND		0.00050		mg/L			12/11/15 17:22	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 17:22	1
1,3-Dichloropropane	ND		0.00050		mg/L			12/11/15 17:22	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Client Sample ID: R-92A
Date Collected: 12/08/15 11:45
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 17:22	1
2,2-Dichloropropane	ND		0.0010		mg/L			12/11/15 17:22	1
2-Butanone (MEK)	ND		0.0050		mg/L			12/11/15 17:22	1
2-Chlorotoluene	ND		0.00050		mg/L			12/11/15 17:22	1
2-Hexanone	ND		0.0050		mg/L			12/11/15 17:22	1
4-Chlorotoluene	ND		0.00050		mg/L			12/11/15 17:22	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			12/11/15 17:22	1
Acetone	ND		0.010		mg/L			12/11/15 17:22	1
Benzene	ND		0.00050		mg/L			12/11/15 17:22	1
Bromobenzene	ND		0.00050		mg/L			12/11/15 17:22	1
Bromochloromethane	ND		0.00050		mg/L			12/11/15 17:22	1
Bromodichloromethane	ND		0.00050		mg/L			12/11/15 17:22	1
Bromoform	ND		0.0010		mg/L			12/11/15 17:22	1
Bromomethane	ND		0.0010		mg/L			12/11/15 17:22	1
Carbon disulfide	ND		0.0010		mg/L			12/11/15 17:22	1
Carbon tetrachloride	ND		0.00050		mg/L			12/11/15 17:22	1
Chlorobenzene	ND		0.00050		mg/L			12/11/15 17:22	1
Chloroethane	ND		0.0010		mg/L			12/11/15 17:22	1
Chloroform	ND		0.00050		mg/L			12/11/15 17:22	1
Chloromethane	ND		0.0010		mg/L			12/11/15 17:22	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 17:22	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 17:22	1
Chlorodibromomethane	ND		0.00050		mg/L			12/11/15 17:22	1
Dibromomethane	ND		0.00050		mg/L			12/11/15 17:22	1
Dichlorodifluoromethane	**0.00072**		0.00050		mg/L			12/11/15 17:22	1
Ethylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
Hexachlorobutadiene	ND		0.0010		mg/L			12/11/15 17:22	1
Iodomethane	ND		0.0025		mg/L			12/11/15 17:22	1
Isopropylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
m,p-Xylenes	ND		0.0010		mg/L			12/11/15 17:22	1
Methylene Chloride	ND		0.0010		mg/L			12/11/15 17:22	1
Methyl tert-butyl ether	ND		0.00050		mg/L			12/11/15 17:22	1
Naphthalene	ND		0.0025		mg/L			12/11/15 17:22	1
n-Butylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
N-Propylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
o-Xylene	ND		0.00050		mg/L			12/11/15 17:22	1
p-Isopropyltoluene	ND		0.00050		mg/L			12/11/15 17:22	1
sec-Butylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
Styrene	ND		0.00050		mg/L			12/11/15 17:22	1
tert-Butylbenzene	ND		0.00050		mg/L			12/11/15 17:22	1
Tetrachloroethene	**0.0017**		0.00050		mg/L			12/11/15 17:22	1
Toluene	ND		0.00050		mg/L			12/11/15 17:22	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 17:22	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 17:22	1
Trichloroethene	ND		0.00050		mg/L			12/11/15 17:22	1
Trichlorofluoromethane	ND		0.00050		mg/L			12/11/15 17:22	1
Vinyl acetate	ND		0.0020		mg/L			12/11/15 17:22	1
Vinyl chloride	ND		0.00050		mg/L			12/11/15 17:22	1
Xylenes, Total	ND		0.0015		mg/L			12/11/15 17:22	1

Client Sample ID: R-92A

Date Collected: 12/08/15 11:45
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*123*		*70 - 130*		*12/11/15 17:22*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/11/15 17:22*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*12/11/15 17:22*	*1*

Client Sample ID: TB

Date Collected: 12/08/15 00:00
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,1-Dichloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,1-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:14	1
1,1-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:14	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 15:14	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			12/11/15 15:14	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 15:14	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			12/11/15 15:14	1
1,2-Dibromoethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:14	1
1,2-Dichloroethane	ND		0.00050		mg/L			12/11/15 15:14	1
1,2-Dichloropropane	ND		0.00050		mg/L			12/11/15 15:14	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:14	1
1,3-Dichloropropane	ND		0.00050		mg/L			12/11/15 15:14	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 15:14	1
2,2-Dichloropropane	ND		0.0010		mg/L			12/11/15 15:14	1
2-Butanone (MEK)	ND		0.0050		mg/L			12/11/15 15:14	1
2-Chlorotoluene	ND		0.00050		mg/L			12/11/15 15:14	1
2-Hexanone	ND		0.0050		mg/L			12/11/15 15:14	1
4-Chlorotoluene	ND		0.00050		mg/L			12/11/15 15:14	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			12/11/15 15:14	1
Acetone	ND		0.010		mg/L			12/11/15 15:14	1
Benzene	ND		0.00050		mg/L			12/11/15 15:14	1
Bromobenzene	ND		0.00050		mg/L			12/11/15 15:14	1
Bromochloromethane	ND		0.00050		mg/L			12/11/15 15:14	1
Bromodichloromethane	ND		0.00050		mg/L			12/11/15 15:14	1
Bromoform	ND		0.0010		mg/L			12/11/15 15:14	1
Bromomethane	ND		0.0010		mg/L			12/11/15 15:14	1
Carbon disulfide	ND		0.0010		mg/L			12/11/15 15:14	1
Carbon tetrachloride	ND		0.00050		mg/L			12/11/15 15:14	1
Chlorobenzene	ND		0.00050		mg/L			12/11/15 15:14	1
Chloroethane	ND		0.0010		mg/L			12/11/15 15:14	1
Chloroform	ND		0.00050		mg/L			12/11/15 15:14	1
Chloromethane	ND		0.0010		mg/L			12/11/15 15:14	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:14	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Client Sample ID: TB
Date Collected: 12/08/15 00:00
Date Received: 12/08/15 17:05

Lab Sample ID: 550-55537-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:14	1
Chlorodibromomethane	ND		0.00050		mg/L			12/11/15 15:14	1
Dibromomethane	ND		0.00050		mg/L			12/11/15 15:14	1
Dichlorodifluoromethane	ND		0.00050		mg/L			12/11/15 15:14	1
Ethylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
Hexachlorobutadiene	ND		0.0010		mg/L			12/11/15 15:14	1
Iodomethane	ND		0.0025		mg/L			12/11/15 15:14	1
Isopropylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
m,p-Xylenes	ND		0.0010		mg/L			12/11/15 15:14	1
Methylene Chloride	ND		0.0010		mg/L			12/11/15 15:14	1
Methyl tert-butyl ether	ND		0.00050		mg/L			12/11/15 15:14	1
Naphthalene	ND		0.0025		mg/L			12/11/15 15:14	1
n-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
N-Propylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
o-Xylene	ND		0.00050		mg/L			12/11/15 15:14	1
p-Isopropyltoluene	ND		0.00050		mg/L			12/11/15 15:14	1
sec-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
Styrene	ND		0.00050		mg/L			12/11/15 15:14	1
tert-Butylbenzene	ND		0.00050		mg/L			12/11/15 15:14	1
Tetrachloroethene	ND		0.00050		mg/L			12/11/15 15:14	1
Toluene	ND		0.00050		mg/L			12/11/15 15:14	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 15:14	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 15:14	1
Trichloroethene	ND		0.00050		mg/L			12/11/15 15:14	1
Trichlorofluoromethane	ND		0.00050		mg/L			12/11/15 15:14	1
Vinyl acetate	ND		0.0020		mg/L			12/11/15 15:14	1
Vinyl chloride	ND		0.00050		mg/L			12/11/15 15:14	1
Xylenes, Total	ND		0.0015		mg/L			12/11/15 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*70 - 130*		*12/11/15 15:14*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*12/11/15 15:14*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*12/11/15 15:14*	*1*

Surrogate Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-55537-1	R-90A-25	114	101	104
550-55537-1 MS	R-90A-25	108	109	99
550-55537-1 MSD	R-90A-25	107	107	98
550-55537-2	R-92A	123	102	107
550-55537-3	TB	118	103	106
LCS 550-79780/3	Lab Control Sample	95	102	99
LCSD 550-79780/4	Lab Control Sample Dup	96	101	95
MB 550-79780/5	Method Blank	115	102	108

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 550-79780/5
Matrix: Water
Analysis Batch: 79780

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,1,2,2-Tetrachloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,1-Dichloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,1-Dichloroethene	ND		0.00050		mg/L			12/11/15 14:11	1
1,1-Dichloropropene	ND		0.00050		mg/L			12/11/15 14:11	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 14:11	1
1,2,3-Trichloropropane	ND		0.0020		mg/L			12/11/15 14:11	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			12/11/15 14:11	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
1,2-Dibromo-3-Chloropropane	ND		0.0050		mg/L			12/11/15 14:11	1
1,2-Dibromoethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 14:11	1
1,2-Dichloroethane	ND		0.00050		mg/L			12/11/15 14:11	1
1,2-Dichloropropane	ND		0.00050		mg/L			12/11/15 14:11	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 14:11	1
1,3-Dichloropropane	ND		0.00050		mg/L			12/11/15 14:11	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			12/11/15 14:11	1
2,2-Dichloropropane	ND		0.0010		mg/L			12/11/15 14:11	1
2-Butanone (MEK)	ND		0.0050		mg/L			12/11/15 14:11	1
2-Chlorotoluene	ND		0.00050		mg/L			12/11/15 14:11	1
2-Hexanone	ND		0.0050		mg/L			12/11/15 14:11	1
4-Chlorotoluene	ND		0.00050		mg/L			12/11/15 14:11	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			12/11/15 14:11	1
Acetone	ND		0.010		mg/L			12/11/15 14:11	1
Benzene	ND		0.00050		mg/L			12/11/15 14:11	1
Bromobenzene	ND		0.00050		mg/L			12/11/15 14:11	1
Bromochloromethane	ND		0.00050		mg/L			12/11/15 14:11	1
Bromodichloromethane	ND		0.00050		mg/L			12/11/15 14:11	1
Bromoform	ND		0.0010		mg/L			12/11/15 14:11	1
Bromomethane	ND		0.0010		mg/L			12/11/15 14:11	1
Carbon disulfide	ND		0.0010		mg/L			12/11/15 14:11	1
Carbon tetrachloride	ND		0.00050		mg/L			12/11/15 14:11	1
Chlorobenzene	ND		0.00050		mg/L			12/11/15 14:11	1
Chloroethane	ND		0.0010		mg/L			12/11/15 14:11	1
Chloroform	ND		0.00050		mg/L			12/11/15 14:11	1
Chloromethane	ND		0.0010		mg/L			12/11/15 14:11	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 14:11	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 14:11	1
Chlorodibromomethane	ND		0.00050		mg/L			12/11/15 14:11	1
Dibromomethane	ND		0.00050		mg/L			12/11/15 14:11	1
Dichlorodifluoromethane	ND		0.00050		mg/L			12/11/15 14:11	1
Ethylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
Hexachlorobutadiene	ND		0.0010		mg/L			12/11/15 14:11	1
Iodomethane	ND		0.0025		mg/L			12/11/15 14:11	1
Isopropylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 550-79780/5
Matrix: Water
Analysis Batch: 79780

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	ND		0.0010		mg/L			12/11/15 14:11	1
Methylene Chloride	ND		0.0010		mg/L			12/11/15 14:11	1
Methyl tert-butyl ether	ND		0.00050		mg/L			12/11/15 14:11	1
Naphthalene	ND		0.0025		mg/L			12/11/15 14:11	1
n-Butylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
N-Propylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
o-Xylene	ND		0.00050		mg/L			12/11/15 14:11	1
p-Isopropyltoluene	ND		0.00050		mg/L			12/11/15 14:11	1
sec-Butylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
Styrene	ND		0.00050		mg/L			12/11/15 14:11	1
tert-Butylbenzene	ND		0.00050		mg/L			12/11/15 14:11	1
Tetrachloroethene	ND		0.00050		mg/L			12/11/15 14:11	1
Toluene	ND		0.00050		mg/L			12/11/15 14:11	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			12/11/15 14:11	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			12/11/15 14:11	1
Trichloroethene	ND		0.00050		mg/L			12/11/15 14:11	1
Trichlorofluoromethane	ND		0.00050		mg/L			12/11/15 14:11	1
Vinyl acetate	ND		0.0020		mg/L			12/11/15 14:11	1
Vinyl chloride	ND		0.00050		mg/L			12/11/15 14:11	1
Xylenes, Total	ND		0.0015		mg/L			12/11/15 14:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*70 - 130*		*12/11/15 14:11*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/11/15 14:11*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*12/11/15 14:11*	*1*

Lab Sample ID: LCS 550-79780/3
Matrix: Water
Analysis Batch: 79780

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.0250	0.0254		mg/L		102	70 - 130
1,1,1-Trichloroethane	0.0250	0.0266		mg/L		106	71 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0272		mg/L		109	70 - 130
1,1,2-Trichloroethane	0.0250	0.0257		mg/L		103	70 - 130
1,1-Dichloroethane	0.0250	0.0253		mg/L		101	70 - 130
1,1-Dichloroethene	0.0250	0.0265		mg/L		106	63 - 131
1,1-Dichloropropene	0.0250	0.0259		mg/L		104	70 - 130
1,2,3-Trichlorobenzene	0.0250	0.0258		mg/L		103	79 - 139
1,2,3-Trichloropropane	0.0250	0.0229		mg/L		92	70 - 130
1,2,4-Trichlorobenzene	0.0250	0.0262		mg/L		105	80 - 137
1,2,4-Trimethylbenzene	0.0250	0.0253		mg/L		101	70 - 130
1,2-Dibromo-3-Chloropropane	0.0250	0.0245		mg/L		98	63 - 146
1,2-Dibromoethane	0.0250	0.0263		mg/L		105	70 - 130
1,2-Dichlorobenzene	0.0250	0.0262		mg/L		105	70 - 130
1,2-Dichloroethane	0.0250	0.0258		mg/L		103	66 - 139
1,2-Dichloropropane	0.0250	0.0259		mg/L		103	70 - 130
1,3,5-Trimethylbenzene	0.0250	0.0256		mg/L		103	70 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-79780/3
Matrix: Water
Analysis Batch: 79780

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0250	0.0262		mg/L		105	70 - 130
1,3-Dichloropropane	0.0250	0.0244		mg/L		97	70 - 130
1,4-Dichlorobenzene	0.0250	0.0261		mg/L		104	70 - 130
2,2-Dichloropropane	0.0250	0.0241		mg/L		96	69 - 139
2-Butanone (MEK)	0.0250	0.0238		mg/L		95	53 - 150
2-Chlorotoluene	0.0250	0.0256		mg/L		102	70 - 130
2-Hexanone	0.0250	0.0233		mg/L		93	55 - 150
4-Chlorotoluene	0.0250	0.0251		mg/L		100	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0250	0.0231		mg/L		92	64 - 142
Acetone	0.0250	0.0248		mg/L		99	38 - 150
Benzene	0.0250	0.0257		mg/L		103	70 - 130
Bromobenzene	0.0250	0.0257		mg/L		103	70 - 130
Bromochloromethane	0.0250	0.0260		mg/L		104	70 - 130
Bromodichloromethane	0.0250	0.0254		mg/L		102	70 - 130
Bromoform	0.0250	0.0257		mg/L		103	69 - 129
Bromomethane	0.0250	0.0270		mg/L		108	57 - 138
Carbon disulfide	0.0250	0.0254		mg/L		102	64 - 145
Carbon tetrachloride	0.0250	0.0264		mg/L		105	70 - 143
Chlorobenzene	0.0250	0.0264		mg/L		106	70 - 130
Chloroethane	0.0250	0.0248		mg/L		99	66 - 131
Chloroform	0.0250	0.0257		mg/L		103	70 - 130
Chloromethane	0.0250	0.0267		mg/L		107	56 - 129
cis-1,2-Dichloroethene	0.0250	0.0267		mg/L		107	70 - 130
cis-1,3-Dichloropropene	0.0250	0.0272		mg/L		109	70 - 130
Chlorodibromomethane	0.0250	0.0254		mg/L		101	70 - 130
Dibromomethane	0.0250	0.0269		mg/L		108	70 - 130
Dichlorodifluoromethane	0.0250	0.0276		mg/L		110	46 - 144
Ethylbenzene	0.0250	0.0261		mg/L		104	70 - 130
Hexachlorobutadiene	0.0250	0.0261		mg/L		104	76 - 145
Iodomethane	0.0250	0.0264		mg/L		106	70 - 130
Isopropylbenzene	0.0250	0.0259		mg/L		104	88 - 141
m,p-Xylenes	0.0250	0.0252		mg/L		101	70 - 130
Methylene Chloride	0.0250	0.0277		mg/L		111	63 - 128
Methyl tert-butyl ether	0.0250	0.0298		mg/L		119	70 - 130
Naphthalene	0.0250	0.0258		mg/L		103	78 - 143
n-Butylbenzene	0.0250	0.0258		mg/L		103	70 - 130
N-Propylbenzene	0.0250	0.0257		mg/L		103	70 - 130
o-Xylene	0.0250	0.0261		mg/L		105	70 - 130
p-Isopropyltoluene	0.0250	0.0255		mg/L		102	70 - 130
sec-Butylbenzene	0.0250	0.0250		mg/L		100	70 - 130
Styrene	0.0250	0.0267		mg/L		107	70 - 130
Tetrachloroethene	0.0250	0.0255		mg/L		102	70 - 130
Toluene	0.0250	0.0250		mg/L		100	70 - 130
trans-1,2-Dichloroethene	0.0250	0.0239		mg/L		96	69 - 127
trans-1,3-Dichloropropene	0.0250	0.0276		mg/L		110	70 - 130
Trichloroethene	0.0250	0.0259		mg/L		103	70 - 130
Trichlorofluoromethane	0.0250	0.0271		mg/L		108	69 - 150
Vinyl acetate	0.0250	0.0245		mg/L		98	67 - 148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-79780/3
Matrix: Water
Analysis Batch: 79780

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			0.0250	0.0259		mg/L		104	65 - 137		
Xylenes, Total			0.0500	0.0513		mg/L		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 550-79780/4
Matrix: Water
Analysis Batch: 79780

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			0.0250	0.0262		mg/L		105	70 - 130	3	20
1,1,1-Trichloroethane			0.0250	0.0267		mg/L		107	71 - 131	0	20
1,1,2,2-Tetrachloroethane			0.0250	0.0267		mg/L		107	70 - 130	2	20
1,1,2-Trichloroethane			0.0250	0.0248		mg/L		99	70 - 130	3	20
1,1-Dichloroethane			0.0250	0.0259		mg/L		104	70 - 130	2	20
1,1-Dichloroethene			0.0250	0.0276		mg/L		110	63 - 131	4	22
1,1-Dichloropropene			0.0250	0.0256		mg/L		102	70 - 130	1	20
1,2,3-Trichlorobenzene			0.0250	0.0253		mg/L		101	79 - 139	2	20
1,2,3-Trichloropropane			0.0250	0.0224		mg/L		90	70 - 130	2	20
1,2,4-Trichlorobenzene			0.0250	0.0261		mg/L		104	80 - 137	0	20
1,2,4-Trimethylbenzene			0.0250	0.0253		mg/L		101	70 - 130	0	20
1,2-Dibromo-3-Chloropropane			0.0250	0.0216		mg/L		87	63 - 146	13	22
1,2-Dibromoethane			0.0250	0.0256		mg/L		103	70 - 130	3	20
1,2-Dichlorobenzene			0.0250	0.0259		mg/L		104	70 - 130	1	20
1,2-Dichloroethane			0.0250	0.0257		mg/L		103	66 - 139	0	20
1,2-Dichloropropane			0.0250	0.0259		mg/L		104	70 - 130	0	20
1,3,5-Trimethylbenzene			0.0250	0.0257		mg/L		103	70 - 130	0	20
1,3-Dichlorobenzene			0.0250	0.0259		mg/L		104	70 - 130	1	20
1,3-Dichloropropane			0.0250	0.0238		mg/L		95	70 - 130	2	20
1,4-Dichlorobenzene			0.0250	0.0254		mg/L		102	70 - 130	3	20
2,2-Dichloropropane			0.0250	0.0237		mg/L		95	69 - 139	2	20
2-Butanone (MEK)			0.0250	0.0176		mg/L		70	53 - 150	30	35
2-Chlorotoluene			0.0250	0.0250		mg/L		100	70 - 130	2	20
2-Hexanone			0.0250	0.0185		mg/L		74	55 - 150	23	35
4-Chlorotoluene			0.0250	0.0256		mg/L		103	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)			0.0250	0.0209		mg/L		83	64 - 142	10	25
Acetone			0.0250	0.0201		mg/L		80	38 - 150	21	35
Benzene			0.0250	0.0256		mg/L		103	70 - 130	0	20
Bromobenzene			0.0250	0.0258		mg/L		103	70 - 130	0	20
Bromochloromethane			0.0250	0.0260		mg/L		104	70 - 130	0	20
Bromodichloromethane			0.0250	0.0253		mg/L		101	70 - 130	1	20
Bromoform			0.0250	0.0237		mg/L		95	69 - 129	8	20
Bromomethane			0.0250	0.0257		mg/L		103	57 - 138	5	20
Carbon disulfide			0.0250	0.0257		mg/L		103	64 - 145	1	33
Carbon tetrachloride			0.0250	0.0263		mg/L		105	70 - 143	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 550-79780/4
Matrix: Water
Analysis Batch: 79780

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	0.0250	0.0268		mg/L		107	70 - 130	1	20
Chloroethane	0.0250	0.0252		mg/L		101	66 - 131	2	20
Chloroform	0.0250	0.0260		mg/L		104	70 - 130	1	20
Chloromethane	0.0250	0.0260		mg/L		104	56 - 129	2	20
cis-1,2-Dichloroethene	0.0250	0.0270		mg/L		108	70 - 130	1	20
cis-1,3-Dichloropropene	0.0250	0.0264		mg/L		106	70 - 130	3	20
Chlorodibromomethane	0.0250	0.0253		mg/L		101	70 - 130	0	20
Dibromomethane	0.0250	0.0254		mg/L		102	70 - 130	6	20
Dichlorodifluoromethane	0.0250	0.0257		mg/L		103	46 - 144	7	23
Ethylbenzene	0.0250	0.0262		mg/L		105	70 - 130	0	20
Hexachlorobutadiene	0.0250	0.0263		mg/L		105	76 - 145	1	20
Iodomethane	0.0250	0.0269		mg/L		108	70 - 130	2	20
Isopropylbenzene	0.0250	0.0252		mg/L		101	88 - 141	3	20
m,p-Xylenes	0.0250	0.0257		mg/L		103	70 - 130	2	20
Methylene Chloride	0.0250	0.0279		mg/L		111	63 - 128	1	21
Methyl tert-butyl ether	0.0250	0.0286		mg/L		114	70 - 130	4	20
Naphthalene	0.0250	0.0245		mg/L		98	78 - 143	5	20
n-Butylbenzene	0.0250	0.0261		mg/L		104	70 - 130	1	20
N-Propylbenzene	0.0250	0.0256		mg/L		102	70 - 130	1	20
o-Xylene	0.0250	0.0252		mg/L		101	70 - 130	4	20
p-Isopropyltoluene	0.0250	0.0242		mg/L		97	70 - 130	5	20
sec-Butylbenzene	0.0250	0.0247		mg/L		99	70 - 130	1	20
Styrene	0.0250	0.0259		mg/L		104	70 - 130	3	20
Tetrachloroethene	0.0250	0.0256		mg/L		102	70 - 130	1	20
Toluene	0.0250	0.0252		mg/L		101	70 - 130	1	20
trans-1,2-Dichloroethene	0.0250	0.0237		mg/L		95	69 - 127	1	20
trans-1,3-Dichloropropene	0.0250	0.0264		mg/L		105	70 - 130	4	20
Trichloroethene	0.0250	0.0257		mg/L		103	70 - 130	1	20
Trichlorofluoromethane	0.0250	0.0275		mg/L		110	69 - 150	2	22
Vinyl acetate	0.0250	0.0230		mg/L		92	67 - 148	7	22
Vinyl chloride	0.0250	0.0255		mg/L		102	65 - 137	2	20
Xylenes, Total	0.0500	0.0509		mg/L		102	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 550-55537-1 MS
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0264		mg/L		106	70 - 130
1,1,1-Trichloroethane	ND		0.0250	0.0279		mg/L		112	64 - 138
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0290		mg/L		116	63 - 137
1,1,2-Trichloroethane	ND		0.0250	0.0280		mg/L		112	63 - 132
1,1-Dichloroethane	ND		0.0250	0.0274		mg/L		110	62 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-55537-1 MS
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		0.0250	0.0289		mg/L		116	57 - 137
1,1-Dichloropropene	ND		0.0250	0.0268		mg/L		107	64 - 134
1,2,3-Trichlorobenzene	ND		0.0250	0.0286		mg/L		114	74 - 139
1,2,3-Trichloropropane	ND		0.0250	0.0245		mg/L		98	68 - 130
1,2,4-Trichlorobenzene	ND		0.0250	0.0280		mg/L		112	74 - 138
1,2,4-Trimethylbenzene	ND		0.0250	0.0252		mg/L		101	63 - 135
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0241		mg/L		96	53 - 145
1,2-Dibromoethane	ND		0.0250	0.0272		mg/L		109	70 - 130
1,2-Dichlorobenzene	ND		0.0250	0.0280		mg/L		112	70 - 130
1,2-Dichloroethane	ND		0.0250	0.0297		mg/L		119	54 - 147
1,2-Dichloropropane	ND		0.0250	0.0277		mg/L		111	68 - 126
1,3,5-Trimethylbenzene	ND		0.0250	0.0256		mg/L		102	66 - 137
1,3-Dichlorobenzene	ND		0.0250	0.0269		mg/L		108	70 - 130
1,3-Dichloropropane	ND		0.0250	0.0257		mg/L		103	68 - 129
1,4-Dichlorobenzene	ND		0.0250	0.0264		mg/L		106	70 - 130
2,2-Dichloropropane	ND		0.0250	0.0241		mg/L		96	60 - 146
2-Butanone (MEK)	ND		0.0250	0.0165		mg/L		66	31 - 143
2-Chlorotoluene	ND		0.0250	0.0256		mg/L		102	71 - 131
2-Hexanone	ND		0.0250	0.0164		mg/L		65	40 - 142
4-Chlorotoluene	ND		0.0250	0.0263		mg/L		105	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0245		mg/L		98	52 - 143
Acetone	ND		0.0250	0.0157		mg/L		63	29 - 139
Benzene	ND		0.0250	0.0273		mg/L		109	68 - 131
Bromobenzene	ND		0.0250	0.0275		mg/L		110	70 - 130
Bromochloromethane	ND		0.0250	0.0286		mg/L		114	64 - 132
Bromodichloromethane	ND		0.0250	0.0276		mg/L		110	63 - 138
Bromoform	ND		0.0250	0.0250		mg/L		100	60 - 128
Bromomethane	ND		0.0250	0.0277		mg/L		111	47 - 144
Carbon disulfide	ND		0.0250	0.0267		mg/L		107	45 - 150
Carbon tetrachloride	ND		0.0250	0.0275		mg/L		110	65 - 147
Chlorobenzene	ND		0.0250	0.0262		mg/L		105	70 - 130
Chloroethane	ND		0.0250	0.0266		mg/L		106	57 - 139
Chloroform	ND		0.0250	0.0280		mg/L		112	63 - 131
Chloromethane	ND		0.0250	0.0272		mg/L		109	47 - 134
cis-1,2-Dichloroethene	ND		0.0250	0.0298		mg/L		119	65 - 127
cis-1,3-Dichloropropene	ND		0.0250	0.0266		mg/L		106	63 - 135
Chlorodibromomethane	ND		0.0250	0.0259		mg/L		104	65 - 134
Dibromomethane	ND		0.0250	0.0292		mg/L		117	66 - 136
Dichlorodifluoromethane	ND		0.0250	0.0269		mg/L		108	40 - 148
Ethylbenzene	ND		0.0250	0.0257		mg/L		103	74 - 134
Hexachlorobutadiene	ND		0.0250	0.0270		mg/L		108	69 - 150
Iodomethane	ND		0.0250	0.0283		mg/L		113	53 - 150
Isopropylbenzene	ND		0.0250	0.0255		mg/L		102	80 - 146
m,p-Xylenes	ND		0.0250	0.0241		mg/L		96	58 - 138
Methylene Chloride	ND		0.0250	0.0300		mg/L		120	55 - 133
Methyl tert-butyl ether	ND		0.0250	0.0336		mg/L		134	67 - 138
Naphthalene	ND		0.0250	0.0273		mg/L		109	67 - 146
n-Butylbenzene	ND		0.0250	0.0269		mg/L		108	69 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-55537-1 MS
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Propylbenzene	ND		0.0250	0.0266		mg/L		106	74 - 140
o-Xylene	ND		0.0250	0.0253		mg/L		101	66 - 137
p-Isopropyltoluene	ND		0.0250	0.0252		mg/L		101	70 - 133
sec-Butylbenzene	ND		0.0250	0.0249		mg/L		100	72 - 136
Styrene	ND		0.0250	0.0264		mg/L		106	43 - 144
Tetrachloroethene	ND		0.0250	0.0247		mg/L		99	67 - 131
Toluene	ND		0.0250	0.0265		mg/L		106	65 - 138
trans-1,2-Dichloroethene	ND		0.0250	0.0248		mg/L		99	62 - 131
trans-1,3-Dichloropropene	ND		0.0250	0.0300		mg/L		120	58 - 136
Trichloroethene	ND		0.0250	0.0271		mg/L		108	66 - 132
Trichlorofluoromethane	ND		0.0250	0.0292		mg/L		117	62 - 150
Vinyl acetate	ND		0.0250	0.0269		mg/L		108	47 - 150
Vinyl chloride	ND		0.0250	0.0274		mg/L		109	55 - 146
Xylenes, Total	ND		0.0500	0.0494		mg/L		99	68 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
Toluene-d8 (Surr)	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 550-55537-1 MSD
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0266		mg/L		106	70 - 130	1	30
1,1,1-Trichloroethane	ND		0.0250	0.0277		mg/L		111	64 - 138	1	35
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0282		mg/L		113	63 - 137	3	32
1,1,2-Trichloroethane	ND		0.0250	0.0276		mg/L		110	63 - 132	2	35
1,1-Dichloroethane	ND		0.0250	0.0272		mg/L		109	62 - 130	1	34
1,1-Dichloroethene	ND		0.0250	0.0293		mg/L		117	57 - 137	1	35
1,1-Dichloropropene	ND		0.0250	0.0274		mg/L		110	64 - 134	2	34
1,2,3-Trichlorobenzene	ND		0.0250	0.0269		mg/L		108	74 - 139	6	26
1,2,3-Trichloropropane	ND		0.0250	0.0249		mg/L		99	68 - 130	1	32
1,2,4-Trichlorobenzene	ND		0.0250	0.0267		mg/L		107	74 - 138	5	26
1,2,4-Trimethylbenzene	ND		0.0250	0.0272		mg/L		109	63 - 135	7	31
1,2-Dibromo-3-Chloropropane	ND		0.0250	0.0247		mg/L		99	53 - 145	3	35
1,2-Dibromoethane	ND		0.0250	0.0263		mg/L		105	70 - 130	4	33
1,2-Dichlorobenzene	ND		0.0250	0.0278		mg/L		111	70 - 130	1	27
1,2-Dichloroethane	ND		0.0250	0.0287		mg/L		115	54 - 147	3	35
1,2-Dichloropropane	ND		0.0250	0.0267		mg/L		107	68 - 126	4	32
1,3,5-Trimethylbenzene	ND		0.0250	0.0263		mg/L		105	66 - 137	3	30
1,3-Dichlorobenzene	ND		0.0250	0.0275		mg/L		110	70 - 130	2	28
1,3-Dichloropropane	ND		0.0250	0.0256		mg/L		102	68 - 129	1	33
1,4-Dichlorobenzene	ND		0.0250	0.0273		mg/L		109	70 - 130	3	26
2,2-Dichloropropane	ND		0.0250	0.0239		mg/L		95	60 - 146	1	35
2-Butanone (MEK)	ND		0.0250	0.0144		mg/L		58	31 - 143	13	35
2-Chlorotoluene	ND		0.0250	0.0269		mg/L		108	71 - 131	5	29

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-55537-1 MSD
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		0.0250	0.0157		mg/L		63	40 - 142	4	35
4-Chlorotoluene	ND		0.0250	0.0267		mg/L		107	70 - 130	2	28
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0234		mg/L		94	52 - 143	4	35
Acetone	ND		0.0250	0.0124		mg/L		50	29 - 139	24	35
Benzene	ND		0.0250	0.0269		mg/L		108	68 - 131	2	32
Bromobenzene	ND		0.0250	0.0275		mg/L		110	70 - 130	0	28
Bromochloromethane	ND		0.0250	0.0273		mg/L		109	64 - 132	5	35
Bromodichloromethane	ND		0.0250	0.0271		mg/L		108	63 - 138	2	31
Bromoform	ND		0.0250	0.0256		mg/L		102	60 - 128	2	31
Bromomethane	ND		0.0250	0.0270		mg/L		108	47 - 144	3	35
Carbon disulfide	ND		0.0250	0.0265		mg/L		106	45 - 150	1	35
Carbon tetrachloride	ND		0.0250	0.0274		mg/L		110	65 - 147	0	35
Chlorobenzene	ND		0.0250	0.0267		mg/L		107	70 - 130	2	30
Chloroethane	ND		0.0250	0.0259		mg/L		104	57 - 139	3	35
Chloroform	ND		0.0250	0.0280		mg/L		112	63 - 131	0	33
Chloromethane	ND		0.0250	0.0275		mg/L		110	47 - 134	1	35
cis-1,2-Dichloroethene	ND		0.0250	0.0282		mg/L		113	65 - 127	5	34
cis-1,3-Dichloropropene	ND		0.0250	0.0270		mg/L		108	63 - 135	1	35
Chlorodibromomethane	ND		0.0250	0.0256		mg/L		102	65 - 134	1	33
Dibromomethane	ND		0.0250	0.0286		mg/L		114	66 - 136	2	35
Dichlorodifluoromethane	ND		0.0250	0.0270		mg/L		108	40 - 148	0	35
Ethylbenzene	ND		0.0250	0.0256		mg/L		102	74 - 134	1	32
Hexachlorobutadiene	ND		0.0250	0.0276		mg/L		110	69 - 150	2	32
Iodomethane	ND		0.0250	0.0283		mg/L		113	53 - 150	0	35
Isopropylbenzene	ND		0.0250	0.0262		mg/L		105	80 - 146	3	32
m,p-Xylenes	ND		0.0250	0.0252		mg/L		101	58 - 138	4	29
Methylene Chloride	ND		0.0250	0.0301		mg/L		120	55 - 133	0	35
Methyl tert-butyl ether	ND		0.0250	0.0328		mg/L		131	67 - 138	2	21
Naphthalene	ND		0.0250	0.0267		mg/L		107	67 - 146	2	29
n-Butylbenzene	ND		0.0250	0.0269		mg/L		108	69 - 140	0	32
N-Propylbenzene	ND		0.0250	0.0276		mg/L		110	74 - 140	4	32
o-Xylene	ND		0.0250	0.0259		mg/L		104	66 - 137	3	26
p-Isopropyltoluene	ND		0.0250	0.0259		mg/L		104	70 - 133	3	32
sec-Butylbenzene	ND		0.0250	0.0263		mg/L		105	72 - 136	5	33
Styrene	ND		0.0250	0.0265		mg/L		106	43 - 144	0	35
Tetrachloroethene	ND		0.0250	0.0258		mg/L		103	67 - 131	4	31
Toluene	ND		0.0250	0.0262		mg/L		105	65 - 138	1	33
trans-1,2-Dichloroethene	ND		0.0250	0.0250		mg/L		100	62 - 131	1	35
trans-1,3-Dichloropropene	ND		0.0250	0.0284		mg/L		114	58 - 136	6	35
Trichloroethene	ND		0.0250	0.0264		mg/L		106	66 - 132	3	29
Trichlorofluoromethane	ND		0.0250	0.0288		mg/L		115	62 - 150	2	35
Vinyl acetate	ND		0.0250	0.0256		mg/L		102	47 - 150	5	35
Vinyl chloride	ND		0.0250	0.0270		mg/L		108	55 - 146	1	35
Xylenes, Total	ND		0.0500	0.0511		mg/L		102	68 - 131	3	31

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
Toluene-d8 (Surr)	*107*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-55537-1 MSD
Matrix: Water
Analysis Batch: 79780

Client Sample ID: R-90A-25
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

QC Association Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

GC/MS VOA

Analysis Batch: 79780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-55537-1	R-90A-25	Total/NA	Water	8260B	
550-55537-1 MS	R-90A-25	Total/NA	Water	8260B	
550-55537-1 MSD	R-90A-25	Total/NA	Water	8260B	
550-55537-2	R-92A	Total/NA	Water	8260B	
550-55537-3	TB	Total/NA	Water	8260B	
LCS 550-79780/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 550-79780/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 550-79780/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Client Sample ID: R-90A-25

Lab Sample ID: 550-55537-1

Date Collected: 12/08/15 10:26

Matrix: Water

Date Received: 12/08/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	79780	12/11/15 15:46	UT	TAL PHX

Client Sample ID: R-92A

Lab Sample ID: 550-55537-2

Date Collected: 12/08/15 11:45

Matrix: Water

Date Received: 12/08/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	79780	12/11/15 17:22	UT	TAL PHX

Client Sample ID: TB

Lab Sample ID: 550-55537-3

Date Collected: 12/08/15 00:00

Matrix: Water

Date Received: 12/08/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	79780	12/11/15 15:14	UT	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Laboratory: TestAmerica Phoenix

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-16

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-55537-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX

Protocol References:

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

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Phone: 602.437.3340 Fax:

Chain of Custody Record

550-55537

114451

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Lori Ehman	Site Contact:	Date:	COC No:
Company Name: City of Tucson ES	Tel/Fax: 520-837-3702	Lab Contact:	Carrier:	____ of ____ COCs
Address:	Analysis Turnaround Time			Sampler: Marc Taylor
City/State/Zip: Tucson AZ	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 520-837-3702	TAT if different from Below ____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Broadway Pantano	☐ 1 week			Job / SDG No.:
Site:	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	8260	Sample Specific Notes:
R-90A-25 -01	12-8-15	1026			3	N		X	
R-92A -02	12-8-15	1145	G		3			X	Report to Low RLs
TB -03	11-30-15				1			X	


550-55537 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

2.0°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Verdad Group	12-8-15 1450		TA	12/8/15 14:30
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	TA	12/8/15 17:05			
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				TA	12/8/15 17:05

12/14/2015

Login Sample Receipt Checklist

Client: City of Tucson

Job Number: 550-55537-1

Login Number: 55537
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-56631-1
Client Project/Site: Broadway Pantano

For:
City of Tucson
Environmental Services
PO BOX 27210
Tucson, Arizona 85726-7210

Attn: Lori Ehman

Authorized for release by:
1/11/2016 7:55:03 AM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

Table of Contents

Definitions/Glossary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
V1	CCV recovery was above method acceptance limits. The analyte was not detected in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.

Glossary

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

Sample Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-56631-1	C-26B	Water	01/05/16 12:00	01/05/16 16:00
550-56631-2	TB	Water	01/05/16 00:00	01/05/16 16:00

Detection Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: C-26B — Lab Sample ID: 550-56631-1

No Detections.

Client Sample ID: TB — Lab Sample ID: 550-56631-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: C-26B
Date Collected: 01/05/16 12:00
Date Received: 01/05/16 16:00

Lab Sample ID: 550-56631-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,1,2,2-Tetrachloroethane	ND	L5 V1	0.00050		mg/L			01/06/16 17:06	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,1-Dichloroethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,1-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:06	1
1,1-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:06	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 17:06	1
1,2,3-Trichloropropane	ND	V1	0.0020		mg/L			01/06/16 17:06	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 17:06	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
1,2-Dibromo-3-Chloropropane	ND	V1	0.0050		mg/L			01/06/16 17:06	1
1,2-Dibromoethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:06	1
1,2-Dichloroethane	ND		0.00050		mg/L			01/06/16 17:06	1
1,2-Dichloropropane	ND		0.00050		mg/L			01/06/16 17:06	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:06	1
1,3-Dichloropropane	ND		0.00050		mg/L			01/06/16 17:06	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:06	1
2,2-Dichloropropane	ND		0.0010		mg/L			01/06/16 17:06	1
2-Butanone (MEK)	ND		0.0050		mg/L			01/06/16 17:06	1
2-Chlorotoluene	ND		0.00050		mg/L			01/06/16 17:06	1
2-Hexanone	ND		0.0050		mg/L			01/06/16 17:06	1
4-Chlorotoluene	ND		0.00050		mg/L			01/06/16 17:06	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			01/06/16 17:06	1
Acetone	ND		0.010		mg/L			01/06/16 17:06	1
Benzene	ND		0.00050		mg/L			01/06/16 17:06	1
Bromobenzene	ND		0.00050		mg/L			01/06/16 17:06	1
Bromochloromethane	ND		0.00050		mg/L			01/06/16 17:06	1
Bromodichloromethane	ND		0.00050		mg/L			01/06/16 17:06	1
Bromoform	ND		0.0010		mg/L			01/06/16 17:06	1
Bromomethane	ND		0.0010		mg/L			01/06/16 17:06	1
Carbon disulfide	ND		0.0010		mg/L			01/06/16 17:06	1
Carbon tetrachloride	ND		0.00050		mg/L			01/06/16 17:06	1
Chlorobenzene	ND		0.00050		mg/L			01/06/16 17:06	1
Chloroethane	ND		0.0010		mg/L			01/06/16 17:06	1
Chloroform	ND		0.00050		mg/L			01/06/16 17:06	1
Chloromethane	ND		0.0010		mg/L			01/06/16 17:06	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:06	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:06	1
Chlorodibromomethane	ND		0.00050		mg/L			01/06/16 17:06	1
Dibromomethane	ND		0.00050		mg/L			01/06/16 17:06	1
Dichlorodifluoromethane	ND		0.00050		mg/L			01/06/16 17:06	1
Ethylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
Hexachlorobutadiene	ND		0.0010		mg/L			01/06/16 17:06	1
Iodomethane	ND		0.0025		mg/L			01/06/16 17:06	1
Isopropylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
m,p-Xylenes	ND		0.0010		mg/L			01/06/16 17:06	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: C-26B

Lab Sample ID: 550-56631-1

Date Collected: 01/05/16 12:00

Matrix: Water

Date Received: 01/05/16 16:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		0.0010		mg/L			01/06/16 17:06	1
Methyl tert-butyl ether	ND	L5 V1	0.00050		mg/L			01/06/16 17:06	1
Naphthalene	ND		0.0025		mg/L			01/06/16 17:06	1
n-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
N-Propylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
o-Xylene	ND		0.00050		mg/L			01/06/16 17:06	1
p-Isopropyltoluene	ND		0.00050		mg/L			01/06/16 17:06	1
sec-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
Styrene	ND		0.00050		mg/L			01/06/16 17:06	1
tert-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:06	1
Tetrachloroethene	ND		0.00050		mg/L			01/06/16 17:06	1
Toluene	ND		0.00050		mg/L			01/06/16 17:06	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:06	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:06	1
Trichloroethene	ND		0.00050		mg/L			01/06/16 17:06	1
Trichlorofluoromethane	ND		0.00050		mg/L			01/06/16 17:06	1
Vinyl acetate	ND		0.0020		mg/L			01/06/16 17:06	1
Vinyl chloride	ND		0.00050		mg/L			01/06/16 17:06	1
Xylenes, Total	ND		0.0015		mg/L			01/06/16 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*123*		*70 - 130*		*01/06/16 17:06*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*01/06/16 17:06*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*01/06/16 17:06*	*1*

Client Sample ID: TB

Lab Sample ID: 550-56631-2

Date Collected: 01/05/16 00:00

Matrix: Water

Date Received: 01/05/16 16:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,1,2,2-Tetrachloroethane	ND	L5 V1	0.00050		mg/L			01/06/16 17:39	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,1-Dichloroethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,1-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:39	1
1,1-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:39	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 17:39	1
1,2,3-Trichloropropane	ND	V1	0.0020		mg/L			01/06/16 17:39	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 17:39	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
1,2-Dibromo-3-Chloropropane	ND	V1	0.0050		mg/L			01/06/16 17:39	1
1,2-Dibromoethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:39	1
1,2-Dichloroethane	ND		0.00050		mg/L			01/06/16 17:39	1
1,2-Dichloropropane	ND		0.00050		mg/L			01/06/16 17:39	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:39	1
1,3-Dichloropropane	ND		0.00050		mg/L			01/06/16 17:39	1

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: TB
Date Collected: 01/05/16 00:00
Date Received: 01/05/16 16:00

Lab Sample ID: 550-56631-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 17:39	1
2,2-Dichloropropane	ND		0.0010		mg/L			01/06/16 17:39	1
2-Butanone (MEK)	ND		0.0050		mg/L			01/06/16 17:39	1
2-Chlorotoluene	ND		0.00050		mg/L			01/06/16 17:39	1
2-Hexanone	ND		0.0050		mg/L			01/06/16 17:39	1
4-Chlorotoluene	ND		0.00050		mg/L			01/06/16 17:39	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			01/06/16 17:39	1
Acetone	ND		0.010		mg/L			01/06/16 17:39	1
Benzene	ND		0.00050		mg/L			01/06/16 17:39	1
Bromobenzene	ND		0.00050		mg/L			01/06/16 17:39	1
Bromochloromethane	ND		0.00050		mg/L			01/06/16 17:39	1
Bromodichloromethane	ND		0.00050		mg/L			01/06/16 17:39	1
Bromoform	ND		0.0010		mg/L			01/06/16 17:39	1
Bromomethane	ND		0.0010		mg/L			01/06/16 17:39	1
Carbon disulfide	ND		0.0010		mg/L			01/06/16 17:39	1
Carbon tetrachloride	ND		0.00050		mg/L			01/06/16 17:39	1
Chlorobenzene	ND		0.00050		mg/L			01/06/16 17:39	1
Chloroethane	ND		0.0010		mg/L			01/06/16 17:39	1
Chloroform	ND		0.00050		mg/L			01/06/16 17:39	1
Chloromethane	ND		0.0010		mg/L			01/06/16 17:39	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:39	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:39	1
Chlorodibromomethane	ND		0.00050		mg/L			01/06/16 17:39	1
Dibromomethane	ND		0.00050		mg/L			01/06/16 17:39	1
Dichlorodifluoromethane	ND		0.00050		mg/L			01/06/16 17:39	1
Ethylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
Hexachlorobutadiene	ND		0.0010		mg/L			01/06/16 17:39	1
Iodomethane	ND		0.0025		mg/L			01/06/16 17:39	1
Isopropylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
m,p-Xylenes	ND		0.0010		mg/L			01/06/16 17:39	1
Methylene Chloride	ND		0.0010		mg/L			01/06/16 17:39	1
Methyl tert-butyl ether	ND	L5 V1	0.00050		mg/L			01/06/16 17:39	1
Naphthalene	ND		0.0025		mg/L			01/06/16 17:39	1
n-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
N-Propylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
o-Xylene	ND		0.00050		mg/L			01/06/16 17:39	1
p-Isopropyltoluene	ND		0.00050		mg/L			01/06/16 17:39	1
sec-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
Styrene	ND		0.00050		mg/L			01/06/16 17:39	1
tert-Butylbenzene	ND		0.00050		mg/L			01/06/16 17:39	1
Tetrachloroethene	ND		0.00050		mg/L			01/06/16 17:39	1
Toluene	ND		0.00050		mg/L			01/06/16 17:39	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 17:39	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 17:39	1
Trichloroethene	ND		0.00050		mg/L			01/06/16 17:39	1
Trichlorofluoromethane	ND		0.00050		mg/L			01/06/16 17:39	1
Vinyl acetate	ND		0.0020		mg/L			01/06/16 17:39	1
Vinyl chloride	ND		0.00050		mg/L			01/06/16 17:39	1
Xylenes, Total	ND		0.0015		mg/L			01/06/16 17:39	1

Client Sample Results

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: TB
Date Collected: 01/05/16 00:00
Date Received: 01/05/16 16:00

Lab Sample ID: 550-56631-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	119		70 - 130		01/06/16 17:39	1
Toluene-d8 (Surr)	102		70 - 130		01/06/16 17:39	1
4-Bromofluorobenzene (Surr)	108		70 - 130		01/06/16 17:39	1

Surrogate Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-56622-A-1 MS	Matrix Spike	108	106	96
550-56622-A-1 MSD	Matrix Spike Duplicate	111	106	96
550-56631-1	C-26B	123	102	106
550-56631-2	TB	119	102	108
LCS 550-81167/3	Lab Control Sample	110	105	97
LCSD 550-81167/4	Lab Control Sample Dup	102	105	98
MB 550-81167/5	Method Blank	119	100	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 550-81167/5
Matrix: Water
Analysis Batch: 81167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,1,1-Trichloroethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,1,2,2-Tetrachloroethane	ND	V1	0.00050		mg/L			01/06/16 12:16	1
1,1,2-Trichloroethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,1-Dichloroethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,1-Dichloroethene	ND		0.00050		mg/L			01/06/16 12:16	1
1,1-Dichloropropene	ND		0.00050		mg/L			01/06/16 12:16	1
1,2,3-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 12:16	1
1,2,3-Trichloropropane	ND	V1	0.0020		mg/L			01/06/16 12:16	1
1,2,4-Trichlorobenzene	ND		0.0010		mg/L			01/06/16 12:16	1
1,2,4-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
1,2-Dibromo-3-Chloropropane	ND	V1	0.0050		mg/L			01/06/16 12:16	1
1,2-Dibromoethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,2-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 12:16	1
1,2-Dichloroethane	ND		0.00050		mg/L			01/06/16 12:16	1
1,2-Dichloropropane	ND		0.00050		mg/L			01/06/16 12:16	1
1,3,5-Trimethylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
1,3-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 12:16	1
1,3-Dichloropropane	ND		0.00050		mg/L			01/06/16 12:16	1
1,4-Dichlorobenzene	ND		0.00050		mg/L			01/06/16 12:16	1
2,2-Dichloropropane	ND		0.0010		mg/L			01/06/16 12:16	1
2-Butanone (MEK)	ND		0.0050		mg/L			01/06/16 12:16	1
2-Chlorotoluene	ND		0.00050		mg/L			01/06/16 12:16	1
2-Hexanone	ND		0.0050		mg/L			01/06/16 12:16	1
4-Chlorotoluene	ND		0.00050		mg/L			01/06/16 12:16	1
4-Methyl-2-pentanone (MIBK)	ND		0.0025		mg/L			01/06/16 12:16	1
Acetone	ND		0.010		mg/L			01/06/16 12:16	1
Benzene	ND		0.00050		mg/L			01/06/16 12:16	1
Bromobenzene	ND		0.00050		mg/L			01/06/16 12:16	1
Bromochloromethane	ND		0.00050		mg/L			01/06/16 12:16	1
Bromodichloromethane	ND		0.00050		mg/L			01/06/16 12:16	1
Bromoform	ND		0.0010		mg/L			01/06/16 12:16	1
Bromomethane	ND		0.0010		mg/L			01/06/16 12:16	1
Carbon disulfide	ND		0.0010		mg/L			01/06/16 12:16	1
Carbon tetrachloride	ND		0.00050		mg/L			01/06/16 12:16	1
Chlorobenzene	ND		0.00050		mg/L			01/06/16 12:16	1
Chloroethane	ND		0.0010		mg/L			01/06/16 12:16	1
Chloroform	ND		0.00050		mg/L			01/06/16 12:16	1
Chloromethane	ND		0.0010		mg/L			01/06/16 12:16	1
cis-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 12:16	1
cis-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 12:16	1
Chlorodibromomethane	ND		0.00050		mg/L			01/06/16 12:16	1
Dibromomethane	ND		0.00050		mg/L			01/06/16 12:16	1
Dichlorodifluoromethane	ND		0.00050		mg/L			01/06/16 12:16	1
Ethylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
Hexachlorobutadiene	ND		0.0010		mg/L			01/06/16 12:16	1
Iodomethane	ND		0.0025		mg/L			01/06/16 12:16	1
Isopropylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 550-81167/5
Matrix: Water
Analysis Batch: 81167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	ND		0.0010		mg/L			01/06/16 12:16	1
Methylene Chloride	ND		0.0010		mg/L			01/06/16 12:16	1
Methyl tert-butyl ether	ND	V1	0.00050		mg/L			01/06/16 12:16	1
Naphthalene	ND		0.0025		mg/L			01/06/16 12:16	1
n-Butylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
N-Propylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
o-Xylene	ND		0.00050		mg/L			01/06/16 12:16	1
p-Isopropyltoluene	ND		0.00050		mg/L			01/06/16 12:16	1
sec-Butylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
Styrene	ND		0.00050		mg/L			01/06/16 12:16	1
tert-Butylbenzene	ND		0.00050		mg/L			01/06/16 12:16	1
Tetrachloroethene	ND		0.00050		mg/L			01/06/16 12:16	1
Toluene	ND		0.00050		mg/L			01/06/16 12:16	1
trans-1,2-Dichloroethene	ND		0.00050		mg/L			01/06/16 12:16	1
trans-1,3-Dichloropropene	ND		0.00050		mg/L			01/06/16 12:16	1
Trichloroethene	ND		0.00050		mg/L			01/06/16 12:16	1
Trichlorofluoromethane	ND		0.00050		mg/L			01/06/16 12:16	1
Vinyl acetate	ND		0.0020		mg/L			01/06/16 12:16	1
Vinyl chloride	ND		0.00050		mg/L			01/06/16 12:16	1
Xylenes, Total	ND		0.0015		mg/L			01/06/16 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*70 - 130*		*01/06/16 12:16*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*01/06/16 12:16*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*01/06/16 12:16*	*1*

Lab Sample ID: LCS 550-81167/3
Matrix: Water
Analysis Batch: 81167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.0250	0.0253		mg/L		101	70 - 130
1,1,1-Trichloroethane	0.0250	0.0254		mg/L		102	71 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0343	L5 V1	mg/L		137	70 - 130
1,1,2-Trichloroethane	0.0250	0.0282		mg/L		113	70 - 130
1,1-Dichloroethane	0.0250	0.0256		mg/L		102	70 - 130
1,1-Dichloroethene	0.0250	0.0258		mg/L		103	63 - 131
1,1-Dichloropropene	0.0250	0.0254		mg/L		102	70 - 130
1,2,3-Trichlorobenzene	0.0250	0.0289		mg/L		116	79 - 139
1,2,3-Trichloropropane	0.0250	0.0299	V1	mg/L		120	70 - 130
1,2,4-Trichlorobenzene	0.0250	0.0290		mg/L		116	80 - 137
1,2,4-Trimethylbenzene	0.0250	0.0278		mg/L		111	70 - 130
1,2-Dibromo-3-Chloropropane	0.0250	0.0304	V1	mg/L		122	63 - 146
1,2-Dibromoethane	0.0250	0.0269		mg/L		108	70 - 130
1,2-Dichlorobenzene	0.0250	0.0296		mg/L		119	70 - 130
1,2-Dichloroethane	0.0250	0.0274		mg/L		110	66 - 139
1,2-Dichloropropane	0.0250	0.0252		mg/L		101	70 - 130
1,3,5-Trimethylbenzene	0.0250	0.0271		mg/L		108	70 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-81167/3
Matrix: Water
Analysis Batch: 81167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0250	0.0265		mg/L		106	70 - 130
1,3-Dichloropropane	0.0250	0.0251		mg/L		101	70 - 130
1,4-Dichlorobenzene	0.0250	0.0268		mg/L		107	70 - 130
2,2-Dichloropropane	0.0250	0.0214		mg/L		86	69 - 139
2-Butanone (MEK)	0.0250	0.0215		mg/L		86	53 - 150
2-Chlorotoluene	0.0250	0.0279		mg/L		112	70 - 130
2-Hexanone	0.0250	0.0205		mg/L		82	55 - 150
4-Chlorotoluene	0.0250	0.0274		mg/L		110	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0250	0.0211		mg/L		84	64 - 142
Acetone	0.0250	0.0227		mg/L		91	38 - 150
Benzene	0.0250	0.0255		mg/L		102	70 - 130
Bromobenzene	0.0250	0.0278		mg/L		111	70 - 130
Bromochloromethane	0.0250	0.0266		mg/L		106	70 - 130
Bromodichloromethane	0.0250	0.0262		mg/L		105	70 - 130
Bromoform	0.0250	0.0293		mg/L		117	69 - 129
Bromomethane	0.0250	0.0260		mg/L		104	57 - 138
Carbon disulfide	0.0250	0.0251		mg/L		100	64 - 145
Carbon tetrachloride	0.0250	0.0250		mg/L		100	70 - 143
Chlorobenzene	0.0250	0.0244		mg/L		98	70 - 130
Chloroethane	0.0250	0.0256		mg/L		102	66 - 131
Chloroform	0.0250	0.0266		mg/L		106	70 - 130
Chloromethane	0.0250	0.0256		mg/L		102	56 - 129
cis-1,2-Dichloroethene	0.0250	0.0264		mg/L		106	70 - 130
cis-1,3-Dichloropropene	0.0250	0.0254		mg/L		101	70 - 130
Chlorodibromomethane	0.0250	0.0254		mg/L		101	70 - 130
Dibromomethane	0.0250	0.0279		mg/L		111	70 - 130
Dichlorodifluoromethane	0.0250	0.0267		mg/L		107	46 - 144
Ethylbenzene	0.0250	0.0244		mg/L		98	70 - 130
Hexachlorobutadiene	0.0250	0.0279		mg/L		112	76 - 145
Iodomethane	0.0250	0.0246		mg/L		98	70 - 130
Isopropylbenzene	0.0250	0.0265		mg/L		106	88 - 141
m,p-Xylenes	0.0250	0.0240		mg/L		96	70 - 130
Methylene Chloride	0.0250	0.0291		mg/L		116	63 - 128
Methyl tert-butyl ether	0.0250	0.0337	L5 V1	mg/L		135	70 - 130
Naphthalene	0.0250	0.0305		mg/L		122	78 - 143
n-Butylbenzene	0.0250	0.0287		mg/L		115	70 - 130
N-Propylbenzene	0.0250	0.0279		mg/L		111	70 - 130
o-Xylene	0.0250	0.0238		mg/L		95	70 - 130
p-Isopropyltoluene	0.0250	0.0264		mg/L		105	70 - 130
sec-Butylbenzene	0.0250	0.0269		mg/L		108	70 - 130
Styrene	0.0250	0.0260		mg/L		104	70 - 130
Tetrachloroethene	0.0250	0.0231		mg/L		92	70 - 130
Toluene	0.0250	0.0241		mg/L		96	70 - 130
trans-1,2-Dichloroethene	0.0250	0.0226		mg/L		90	69 - 127
trans-1,3-Dichloropropene	0.0250	0.0289		mg/L		116	70 - 130
Trichloroethene	0.0250	0.0248		mg/L		99	70 - 130
Trichlorofluoromethane	0.0250	0.0289		mg/L		115	69 - 150
Vinyl acetate	0.0250	0.0238		mg/L		95	67 - 148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-81167/3
Matrix: Water
Analysis Batch: 81167

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			0.0250	0.0254		mg/L		101	65 - 137		
Xylenes, Total			0.0500	0.0478		mg/L		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*110*		*70 - 130*
Toluene-d8 (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 550-81167/4
Matrix: Water
Analysis Batch: 81167

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			0.0250	0.0249		mg/L		100	70 - 130	2	20
1,1,1-Trichloroethane			0.0250	0.0239		mg/L		96	71 - 131	6	20
1,1,2,2-Tetrachloroethane			0.0250	0.0349	L5 V1	mg/L		140	70 - 130	2	20
1,1,2-Trichloroethane			0.0250	0.0268		mg/L		107	70 - 130	5	20
1,1-Dichloroethane			0.0250	0.0241		mg/L		96	70 - 130	6	20
1,1-Dichloroethene			0.0250	0.0260		mg/L		104	63 - 131	1	22
1,1-Dichloropropene			0.0250	0.0249		mg/L		100	70 - 130	2	20
1,2,3-Trichlorobenzene			0.0250	0.0283		mg/L		113	79 - 139	2	20
1,2,3-Trichloropropane			0.0250	0.0295	V1	mg/L		118	70 - 130	2	20
1,2,4-Trichlorobenzene			0.0250	0.0273		mg/L		109	80 - 137	6	20
1,2,4-Trimethylbenzene			0.0250	0.0263		mg/L		105	70 - 130	6	20
1,2-Dibromo-3-Chloropropane			0.0250	0.0312	V1	mg/L		125	63 - 146	3	22
1,2-Dibromoethane			0.0250	0.0274		mg/L		110	70 - 130	2	20
1,2-Dichlorobenzene			0.0250	0.0285		mg/L		114	70 - 130	4	20
1,2-Dichloroethane			0.0250	0.0259		mg/L		104	66 - 139	6	20
1,2-Dichloropropane			0.0250	0.0250		mg/L		100	70 - 130	1	20
1,3,5-Trimethylbenzene			0.0250	0.0263		mg/L		105	70 - 130	3	20
1,3-Dichlorobenzene			0.0250	0.0273		mg/L		109	70 - 130	3	20
1,3-Dichloropropane			0.0250	0.0245		mg/L		98	70 - 130	3	20
1,4-Dichlorobenzene			0.0250	0.0268		mg/L		107	70 - 130	0	20
2,2-Dichloropropane			0.0250	0.0211		mg/L		84	69 - 139	2	20
2-Butanone (MEK)			0.0250	0.0218		mg/L		87	53 - 150	1	35
2-Chlorotoluene			0.0250	0.0253		mg/L		101	70 - 130	10	20
2-Hexanone			0.0250	0.0209		mg/L		84	55 - 150	2	35
4-Chlorotoluene			0.0250	0.0256		mg/L		102	70 - 130	7	20
4-Methyl-2-pentanone (MIBK)			0.0250	0.0223		mg/L		89	64 - 142	6	25
Acetone			0.0250	0.0204		mg/L		82	38 - 150	11	35
Benzene			0.0250	0.0253		mg/L		101	70 - 130	1	20
Bromobenzene			0.0250	0.0268		mg/L		107	70 - 130	4	20
Bromochloromethane			0.0250	0.0255		mg/L		102	70 - 130	4	20
Bromodichloromethane			0.0250	0.0252		mg/L		101	70 - 130	4	20
Bromoform			0.0250	0.0277		mg/L		111	69 - 129	6	20
Bromomethane			0.0250	0.0258		mg/L		103	57 - 138	1	20
Carbon disulfide			0.0250	0.0246		mg/L		98	64 - 145	2	33
Carbon tetrachloride			0.0250	0.0247		mg/L		99	70 - 143	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 550-81167/4
Matrix: Water
Analysis Batch: 81167

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			0.0250	0.0239		mg/L		96	70 - 130	2	20
Chloroethane			0.0250	0.0255		mg/L		102	66 - 131	0	20
Chloroform			0.0250	0.0251		mg/L		101	70 - 130	6	20
Chloromethane			0.0250	0.0254		mg/L		102	56 - 129	1	20
cis-1,2-Dichloroethene			0.0250	0.0252		mg/L		101	70 - 130	5	20
cis-1,3-Dichloropropene			0.0250	0.0251		mg/L		100	70 - 130	1	20
Chlorodibromomethane			0.0250	0.0251		mg/L		100	70 - 130	1	20
Dibromomethane			0.0250	0.0276		mg/L		111	70 - 130	1	20
Dichlorodifluoromethane			0.0250	0.0269		mg/L		108	46 - 144	1	23
Ethylbenzene			0.0250	0.0245		mg/L		98	70 - 130	0	20
Hexachlorobutadiene			0.0250	0.0288		mg/L		115	76 - 145	3	20
Iodomethane			0.0250	0.0233		mg/L		93	70 - 130	6	20
Isopropylbenzene			0.0250	0.0259		mg/L		104	88 - 141	2	20
m,p-Xylenes			0.0250	0.0242		mg/L		97	70 - 130	1	20
Methylene Chloride			0.0250	0.0260		mg/L		104	63 - 128	11	21
Methyl tert-butyl ether			0.0250	0.0316	V1	mg/L		126	70 - 130	7	20
Naphthalene			0.0250	0.0313		mg/L		125	78 - 143	3	20
n-Butylbenzene			0.0250	0.0283		mg/L		113	70 - 130	2	20
N-Propylbenzene			0.0250	0.0275		mg/L		110	70 - 130	1	20
o-Xylene			0.0250	0.0240		mg/L		96	70 - 130	1	20
p-Isopropyltoluene			0.0250	0.0265		mg/L		106	70 - 130	1	20
sec-Butylbenzene			0.0250	0.0264		mg/L		105	70 - 130	2	20
Styrene			0.0250	0.0254		mg/L		102	70 - 130	2	20
Tetrachloroethene			0.0250	0.0229		mg/L		92	70 - 130	1	20
Toluene			0.0250	0.0244		mg/L		98	70 - 130	1	20
trans-1,2-Dichloroethene			0.0250	0.0222		mg/L		89	69 - 127	2	20
trans-1,3-Dichloropropene			0.0250	0.0284		mg/L		114	70 - 130	2	20
Trichloroethene			0.0250	0.0247		mg/L		99	70 - 130	0	20
Trichlorofluoromethane			0.0250	0.0297		mg/L		119	69 - 150	3	22
Vinyl acetate			0.0250	0.0229		mg/L		91	67 - 148	4	22
Vinyl chloride			0.0250	0.0253		mg/L		101	65 - 137	0	20
Xylenes, Total			0.0500	0.0482		mg/L		96	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 550-56622-A-1 MS
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0222		mg/L		89	70 - 130
1,1,1-Trichloroethane	ND		0.0250	0.0236		mg/L		95	64 - 138
1,1,2,2-Tetrachloroethane	ND	V1	0.0250	0.0293	V1	mg/L		117	63 - 137
1,1,2-Trichloroethane	ND		0.0250	0.0247		mg/L		99	63 - 132
1,1-Dichloroethane	ND		0.0250	0.0238		mg/L		95	62 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-56622-A-1 MS
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		0.0250	0.0242		mg/L		97	57 - 137
1,1-Dichloropropene	ND		0.0250	0.0222		mg/L		89	64 - 134
1,2,3-Trichlorobenzene	ND		0.0250	0.0253		mg/L		101	74 - 139
1,2,3-Trichloropropane	ND	V1	0.0250	0.0246	V1	mg/L		98	68 - 130
1,2,4-Trichlorobenzene	ND		0.0250	0.0255		mg/L		102	74 - 138
1,2,4-Trimethylbenzene	ND		0.0250	0.0221		mg/L		88	63 - 135
1,2-Dibromo-3-Chloropropane	ND	V1	0.0250	0.0236	V1	mg/L		94	53 - 145
1,2-Dibromoethane	ND		0.0250	0.0229		mg/L		92	70 - 130
1,2-Dichlorobenzene	ND		0.0250	0.0274		mg/L		110	70 - 130
1,2-Dichloroethane	ND		0.0250	0.0255		mg/L		102	54 - 147
1,2-Dichloropropane	ND		0.0250	0.0248		mg/L		99	68 - 126
1,3,5-Trimethylbenzene	ND	M2	0.0250	0.00431	M2	mg/L		17	66 - 137
1,3-Dichlorobenzene	ND		0.0250	0.0254		mg/L		102	70 - 130
1,3-Dichloropropane	ND		0.0250	0.0217		mg/L		87	68 - 129
1,4-Dichlorobenzene	ND		0.0250	0.0252		mg/L		101	70 - 130
2,2-Dichloropropane	ND		0.0250	0.0205		mg/L		82	60 - 146
2-Butanone (MEK)	ND		0.0250	0.0126		mg/L		51	31 - 143
2-Chlorotoluene	ND		0.0250	0.0245		mg/L		98	71 - 131
2-Hexanone	ND		0.0250	0.0114		mg/L		45	40 - 142
4-Chlorotoluene	ND		0.0250	0.0250		mg/L		100	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0167		mg/L		67	52 - 143
Acetone	ND		0.0250	0.0119		mg/L		48	29 - 139
Benzene	ND		0.0250	0.0242		mg/L		97	68 - 131
Bromobenzene	ND		0.0250	0.0250		mg/L		100	70 - 130
Bromochloromethane	ND		0.0250	0.0253		mg/L		101	64 - 132
Bromodichloromethane	0.026		0.0250	0.0474		mg/L		84	63 - 138
Bromoform	ND		0.0250	0.0251		mg/L		97	60 - 128
Bromomethane	ND		0.0250	0.0257		mg/L		103	47 - 144
Carbon disulfide	ND		0.0250	0.0236		mg/L		94	45 - 150
Carbon tetrachloride	ND		0.0250	0.0237		mg/L		95	65 - 147
Chlorobenzene	ND		0.0250	0.0226		mg/L		91	70 - 130
Chloroethane	ND		0.0250	0.0242		mg/L		97	57 - 139
Chloroform	0.028		0.0250	0.0472		mg/L		78	63 - 131
Chloromethane	ND		0.0250	0.0268		mg/L		107	47 - 134
cis-1,2-Dichloroethene	ND		0.0250	0.0259		mg/L		104	65 - 127
cis-1,3-Dichloropropene	ND		0.0250	0.0238		mg/L		95	63 - 135
Chlorodibromomethane	0.013		0.0250	0.0343		mg/L		86	65 - 134
Dibromomethane	ND		0.0250	0.0259		mg/L		103	66 - 136
Dichlorodifluoromethane	ND		0.0250	0.0257		mg/L		103	40 - 148
Ethylbenzene	ND		0.0250	0.0223		mg/L		89	74 - 134
Hexachlorobutadiene	ND		0.0250	0.0268		mg/L		107	69 - 150
Iodomethane	ND	M2 R13	0.0250	ND	M2	mg/L		7	53 - 150
Isopropylbenzene	ND		0.0250	0.0237		mg/L		95	80 - 146
m,p-Xylenes	ND		0.0250	0.0211		mg/L		84	58 - 138
Methylene Chloride	ND		0.0250	0.0262		mg/L		105	55 - 133
Methyl tert-butyl ether	ND	V1	0.0250	0.0298	V1	mg/L		119	67 - 138
Naphthalene	ND		0.0250	0.0247		mg/L		99	67 - 146
n-Butylbenzene	ND		0.0250	0.0262		mg/L		105	69 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-56622-A-1 MS
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Propylbenzene	ND		0.0250	0.0247		mg/L		99	74 - 140
o-Xylene	ND		0.0250	0.0233		mg/L		93	66 - 137
p-Isopropyltoluene	ND		0.0250	0.0241		mg/L		96	70 - 133
sec-Butylbenzene	ND		0.0250	0.0244		mg/L		98	72 - 136
Styrene	ND	M2	0.0250	ND	M2	mg/L		0	43 - 144
Tetrachloroethene	ND		0.0250	0.0203		mg/L		81	67 - 131
Toluene	ND		0.0250	0.0231		mg/L		92	65 - 138
trans-1,2-Dichloroethene	ND		0.0250	0.0220		mg/L		88	62 - 131
trans-1,3-Dichloropropene	ND		0.0250	0.0263		mg/L		105	58 - 136
Trichloroethene	ND		0.0250	0.0227		mg/L		91	66 - 132
Trichlorofluoromethane	ND		0.0250	0.0276		mg/L		110	62 - 150
Vinyl acetate	ND	M2	0.0250	ND	M2	mg/L		0	47 - 150
Vinyl chloride	ND		0.0250	0.0234		mg/L		94	55 - 146
Xylenes, Total	ND		0.0500	0.0444		mg/L		89	68 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 550-56622-A-1 MSD
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		0.0250	0.0249		mg/L		100	70 - 130	11	30
1,1,1-Trichloroethane	ND		0.0250	0.0241		mg/L		97	64 - 138	2	35
1,1,2,2-Tetrachloroethane	ND	V1	0.0250	0.0337	V1	mg/L		135	63 - 137	14	32
1,1,2-Trichloroethane	ND		0.0250	0.0280		mg/L		112	63 - 132	13	35
1,1-Dichloroethane	ND		0.0250	0.0258		mg/L		103	62 - 130	8	34
1,1-Dichloroethene	ND		0.0250	0.0245		mg/L		98	57 - 137	1	35
1,1-Dichloropropene	ND		0.0250	0.0248		mg/L		99	64 - 134	11	34
1,2,3-Trichlorobenzene	ND		0.0250	0.0279		mg/L		112	74 - 139	10	26
1,2,3-Trichloropropane	ND	V1	0.0250	0.0273	V1	mg/L		109	68 - 130	11	32
1,2,4-Trichlorobenzene	ND		0.0250	0.0266		mg/L		106	74 - 138	4	26
1,2,4-Trimethylbenzene	ND		0.0250	0.0223		mg/L		89	63 - 135	1	31
1,2-Dibromo-3-Chloropropane	ND	V1	0.0250	0.0279	V1	mg/L		112	53 - 145	17	35
1,2-Dibromoethane	ND		0.0250	0.0254		mg/L		101	70 - 130	10	33
1,2-Dichlorobenzene	ND		0.0250	0.0282		mg/L		113	70 - 130	3	27
1,2-Dichloroethane	ND		0.0250	0.0281		mg/L		112	54 - 147	10	35
1,2-Dichloropropane	ND		0.0250	0.0252		mg/L		101	68 - 126	2	32
1,3,5-Trimethylbenzene	ND	M2	0.0250	0.00352	M2	mg/L		14	66 - 137	20	30
1,3-Dichlorobenzene	ND		0.0250	0.0272		mg/L		109	70 - 130	7	28
1,3-Dichloropropane	ND		0.0250	0.0239		mg/L		96	68 - 129	10	33
1,4-Dichlorobenzene	ND		0.0250	0.0269		mg/L		108	70 - 130	7	26
2,2-Dichloropropane	ND		0.0250	0.0219		mg/L		87	60 - 146	6	35
2-Butanone (MEK)	ND		0.0250	0.0144		mg/L		57	31 - 143	13	35
2-Chlorotoluene	ND		0.0250	0.0250		mg/L		100	71 - 131	2	29

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-56622-A-1 MSD
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		0.0250	0.0136		mg/L		54	40 - 142	18	35
4-Chlorotoluene	ND		0.0250	0.0257		mg/L		103	70 - 130	3	28
4-Methyl-2-pentanone (MIBK)	ND		0.0250	0.0203		mg/L		81	52 - 143	19	35
Acetone	ND		0.0250	0.0135		mg/L		54	29 - 139	12	35
Benzene	ND		0.0250	0.0256		mg/L		102	68 - 131	6	32
Bromobenzene	ND		0.0250	0.0262		mg/L		105	70 - 130	5	28
Bromochloromethane	ND		0.0250	0.0267		mg/L		107	64 - 132	5	35
Bromodichloromethane	0.026		0.0250	0.0509		mg/L		98	63 - 138	7	31
Bromoform	ND		0.0250	0.0283		mg/L		109	60 - 128	12	31
Bromomethane	ND		0.0250	0.0267		mg/L		107	47 - 144	4	35
Carbon disulfide	ND		0.0250	0.0241		mg/L		97	45 - 150	2	35
Carbon tetrachloride	ND		0.0250	0.0241		mg/L		97	65 - 147	2	35
Chlorobenzene	ND		0.0250	0.0240		mg/L		96	70 - 130	6	30
Chloroethane	ND		0.0250	0.0248		mg/L		99	57 - 139	3	35
Chloroform	0.028		0.0250	0.0480		mg/L		81	63 - 131	2	33
Chloromethane	ND		0.0250	0.0286		mg/L		114	47 - 134	7	35
cis-1,2-Dichloroethene	ND		0.0250	0.0263		mg/L		105	65 - 127	2	34
cis-1,3-Dichloropropene	ND		0.0250	0.0256		mg/L		102	63 - 135	7	35
Chlorodibromomethane	0.013		0.0250	0.0371		mg/L		97	65 - 134	8	33
Dibromomethane	ND		0.0250	0.0284		mg/L		114	66 - 136	9	35
Dichlorodifluoromethane	ND		0.0250	0.0257		mg/L		103	40 - 148	0	35
Ethylbenzene	ND		0.0250	0.0237		mg/L		95	74 - 134	6	32
Hexachlorobutadiene	ND		0.0250	0.0267		mg/L		107	69 - 150	0	32
Iodomethane	ND	M2 R13	0.0250	ND	M2 R13	mg/L		4	53 - 150	54	35
Isopropylbenzene	ND		0.0250	0.0243		mg/L		97	80 - 146	2	32
m,p-Xylenes	ND		0.0250	0.0220		mg/L		88	58 - 138	4	29
Methylene Chloride	ND		0.0250	0.0287		mg/L		115	55 - 133	9	35
Methyl tert-butyl ether	ND	V1	0.0250	0.0339	V1	mg/L		136	67 - 138	13	21
Naphthalene	ND		0.0250	0.0274		mg/L		110	67 - 146	10	29
n-Butylbenzene	ND		0.0250	0.0263		mg/L		105	69 - 140	1	32
N-Propylbenzene	ND		0.0250	0.0249		mg/L		100	74 - 140	1	32
o-Xylene	ND		0.0250	0.0249		mg/L		100	66 - 137	7	26
p-Isopropyltoluene	ND		0.0250	0.0246		mg/L		98	70 - 133	2	32
sec-Butylbenzene	ND		0.0250	0.0242		mg/L		97	72 - 136	1	33
Styrene	ND	M2	0.0250	0.000833	M2	mg/L		3	43 - 144	NC	35
Tetrachloroethene	ND		0.0250	0.0212		mg/L		85	67 - 131	4	31
Toluene	ND		0.0250	0.0242		mg/L		97	65 - 138	5	33
trans-1,2-Dichloroethene	ND		0.0250	0.0224		mg/L		90	62 - 131	2	35
trans-1,3-Dichloropropene	ND		0.0250	0.0290		mg/L		116	58 - 136	10	35
Trichloroethene	ND		0.0250	0.0250		mg/L		100	66 - 132	9	29
Trichlorofluoromethane	ND		0.0250	0.0299		mg/L		120	62 - 150	8	35
Vinyl acetate	ND	M2	0.0250	ND	M2	mg/L		0	47 - 150	NC	35
Vinyl chloride	ND		0.0250	0.0243		mg/L		97	55 - 146	4	35
Xylenes, Total	ND		0.0500	0.0469		mg/L		94	68 - 131	5	31

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*70 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-56622-A-1 MSD
Matrix: Water
Analysis Batch: 81167

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

QC Association Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

GC/MS VOA

Analysis Batch: 81167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-56622-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-56622-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
550-56631-1	C-26B	Total/NA	Water	8260B	
550-56631-2	TB	Total/NA	Water	8260B	
LCS 550-81167/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 550-81167/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 550-81167/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Client Sample ID: C-26B

Lab Sample ID: 550-56631-1

Date Collected: 01/05/16 12:00

Matrix: Water

Date Received: 01/05/16 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	81167	01/06/16 17:06	T1S	TAL PHX

Client Sample ID: TB

Lab Sample ID: 550-56631-2

Date Collected: 01/05/16 00:00

Matrix: Water

Date Received: 01/05/16 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	81167	01/06/16 17:39	T1S	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Laboratory: TestAmerica Phoenix

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-16

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: City of Tucson
Project/Site: Broadway Pantano

TestAmerica Job ID: 550-56631-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX

Protocol References:

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

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Phone: 602.437.3340 Fax:

Chain of Custody Record

126895

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

1/11/2016

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Lori Ehmen	Site Contact:	Date:	COC No:
Company Name: City of Tucson Environmental Services	Tel/Fax: 520-837-3702	Lab Contact:	Carrier:	1 of 1 COCs
Address:	Analysis Turnaround Time			Sampler: Marc Taylor
City/State/Zip: Tucson AZ	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Broadway Pantano	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260	Sample Specific Notes:
C-26B	1-5-16	1200	G		3			1	55e31
TB	1-5-16				1			1	Report to LOW RL's

550-56631 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

1.8

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Vanderl Group	1-5-16/1254		TA	1/5/16 1254
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	TA	1/5/16 16:00		TA	1/5/16 16:00
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: City of Tucson

Job Number: 550-56631-1

Login Number: 56631
List Number: 1
Creator: Stimson, Stephanie

List Source: TestAmerica Phoenix

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

Broadway-Pantano WQARF Site List of Action Items for
Long Term Shutdown of the Western Containment System

1. Drain water from injection piping down injection wells but leave GAC full of water, manufacturer recommends carbon be stored wet.

2. Return Nitrogen bottles.

3. Remove pressure gauges and small valves, install pipe plugs to cover pressure taps, this is for freeze protection.

4. Install pipe plugs on ball valves at GAC vessels used for air vents and drains, ball valves should all be stored in the open position for freeze protection.

5. Remove and plug all sample port valves and piping on GAC vessels and above ground well piping.

6. Drain bag filters, open and remove all cloth bag media and dispose, store with all piping drained. Drain all water from differential pressure switches and valves.

7. Wrap well head pressure switches and any small piping that cannot be removed with fiberglass insulation and aluminum foil for freeze protection.

8. Install hasps and padlocks on control panel enclosure at well C-026, leave access for meter reader on door to the right hand side.

9. Install vandal screen on control building windows, we have not had issues but there are two large glass windows in the building.

10. Download a complete package and system software back-up (In case the computers do not boot up in the future)

11. Move onsite remaining construction files to City of Tucson Offices (Prevent Burglary)

12. Might consider a final herbicide treatment in the treatment compound (with no maintenance the weeds will start to grow in the future)

13. If power and phone at the facility will be shutdown, then some associated equipment can be removed

14. Leave extraction and injection wells in a state which would allow grab groundwater sampling and water level data without pulling equipment.

15. Minimally monthly checks of the buildings at the WCS main compound and injection well site for vandalism and thief.

16. List or memo of actions completed at the WCS for long term shut down.

17. Until a final remedy is selected/implemented, an adequate groundwater monitoring program should be implemented.