



March 24, 2016
Cardno I052000015.S15

Mr. Doug Kirkland
Pima County – Regional Wastewater Reclamation Department
Technical Services Section, Industrial Wastewater Control
2955 West Calle Agua Nueva
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SUBJECT Industrial Wastewater Discharge Permit Self-Monitoring Report Form

City of Tucson Fire and Police Headquarters
UST Facility ID 0-005176
LUST File No. 3208.01
PCWW Permit No. 12916
265 South Church Avenue, Tucson, Arizona

Mr. Kirkland:

Cardno, on behalf of the City of Tucson – Environmental Services (COT-ES), hereby submits this Industrial Wastewater Discharge Permit Self-monitoring Report Form (SMRF) for discharge of treated water at the above-noted Site (Appendix A). This SMRF is submitted for discharges at the permitted discharge location (Permit No. 12916) for the reporting period of December 1, 2015 through February 29, 2016. Compliance samples were collected on December 21, 2015, and submitted to Accutest Laboratories of Phoenix, Arizona, a state-certified laboratory, under chain of custody protocol (Appendix B). Monitored parameters did not exceed the permit limits during the reporting period (Appendix C).

Discharge sample collection and a site inspection were conducted on January 5, 2016 by Pima County staff. An Inspection Report form was completed by Pima County and submitted to COT-ES with no issues noted in the Inspection Report (Appendix D).

LIMITATIONS

For any documents cited that were not generated by Cardno, the data taken from those documents is used “as is” and is assumed to be accurate. Cardno does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

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This document was prepared in accordance with generally accepted standards of environmental, geological, and engineering practices in Arizona at the time of investigation. No soil engineering geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

Please call Mr. Justin T. Patton with Cardno at (602) 909-3448 or Mr. Richard Byrd with the City of Tucson at (520) 837-3710 with questions regarding this Site.

Respectfully submitted,



Justin T. Patton
Project Manager
for Cardno
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Email: justin.patton@cardno.com

Enclosures:

Table 1 Flow Calculations

Table 2 Historical Data

Appendix A Pima County Regional Wastewater Reclamation Department Industrial Waste Water Control Self-Monitoring Reporting Form

Appendix B Laboratory Analytical Report and Chain-of-Custody Record

Appendix C Field Data Sheet

Appendix D Pima County Regional Wastewater Reclamation Department Industrial Waste Water Control Inspection Report

cc: Richard Byrd, COT-ES

TABLE 1**FLOW CALCULATIONS**

City of Tucson Police/Fire Station Headquarters
 265 South Church Avenue, Tucson, Arizona
 UST Facility ID 0-005176; LUST File No. 3208.01
 PCWW Permit No. 12916

Operational Period (December 1, 2015 through February 29, 2016)

Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
337-339 ¹	11/30/15 - 12/20/15	1,970,960	1,970,960	0	0	0
340	12/21/15 - 12/27/15	1,970,960	1,972,390	1,430	7	204
341	12/28/15 - 01/03/16	1,972,390	1,972,781	391	3	130
342	01/04/16 - 01/10/16	1,972,781	1,972,792	11	1	11
343-345 ²	01/11/16 - 01/31/16	1,972,792	1,972,897	105	1	105
346	02/01/16 - 02/07/16	1,972,897	1,973,037	140	1	140
347	02/08/16 - 02/14/16	1,973,037	1,977,577	4,540	7	649
348	02/15/16 - 02/21/16	1,977,577	1,979,215	1,638	4	410
349-350 ³	02/22/16 - 03/06/16	1,979,215	1,982,649	3,434	6	572
Operational Period Average Flowrate (GPD)						247

Notes:

GPD = gallons per day

¹ On September 9, 2015, the system was shut down and groundwater pumps were removed from monitor wells HQUST-523A and HQUST-524A to assess free product recovery, groundwater conditions, and collect quarterly groundwater samples. The system was restarted on December 14, 2015.

² On January 5, 2016 the system was shut down due to prolonged freezing temperatures, and was restarted on January 26, 2016.

³ On February 22, 2016 the system was shut down for routine maintenance, and was restarted on March 1, 2016.

**TABLE 2
HISTORICAL DATA**

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
UST Facility ID 0-005176; LUST File No. 3208.01
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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
1 thru 4 ¹	6/11/09 - 7/5/09	0	6,099	6,099	6	1,017
5 ²	7/6/09 - 7/12/09	6,099	8,897	2,798	2	1,399
6 ³	7/13/09 - 7/19/09	8,897	26,264	17,367	5	3,473
7 ⁴	7/20/09 - 7/26/09	17,367	39,543	22,176	5	4,435
8 ⁵	7/27/09 - 8/2/09	39,543	42,685	3,142	2	1,571
9 ⁶	8/3/09 - 8/9/09	42,685	42,685	0	0	0
10 ⁷	8/10/09 - 8/23/09	42,685	42,685	0	0	0
11 ⁸	8/24/09 - 8/31/09	42,685	43,179	494	3	165
12 thru 15 ⁹	9/1/09 - 9/28/09	43,178	43,178	0	0	0
16	9/29/09 - 10/5/09	43,178	48,812	5,634	6	1,024
17	10/6/09 - 10/12/09	48,812	56,291	7,479	7	1,151
18 ¹⁰	10/13/09 - 10/19/09	56,291	56,391	100	1	200
19 ¹¹	10/20/09 - 10/26/09	56,391	60,202	3,811	3	1,270
20	10/27/09 - 11/2/09	60,202	69,162	8,960	6	1,493
21 ¹²	11/3/09 - 11/9/09	69,162	81,224	12,062	3	4,021
22 ¹³	11/10/09 - 11/16/09	81,224	83,198	1,974	1	1,974
23-24 ¹⁴	11/17/09 - 11/30/09	60,202	83,198	22,996	0	0
25-26 ¹⁵	12/1/09 - 12/14/09	83,198	83,198	0	0	0
27-28	12/15/09 - 12/28/09	83,198	107,435	24,237	12	2,020
29-37 ¹⁶	12/29/09 - 2/28/10	107,435	107,435	0	0	0
38-41 ¹⁷	3/1/10 - 3/28/10	107,435	107,897	462	1	462
42-43 ¹⁸	3/29/10 - 4/11/10	107,897	137,822	29,925	8	3,741
44-45 ¹⁹	4/12/10 - 4/25/10	137,822	156,941	19,119	5	3,824
46-47	4/26/10 - 5/9/10	156,941	208,684	51,743	12	4,312
48-49	5/10/10 - 5/23/10	208,684	239,591	30,907	10	3,091
50	5/24/10 - 5/30/10	239,591	247,010	7,419	2	3,710
51	6/1/10 - 6/6/10	247,010	250,100	3,090	6	515
52	6/7/10 - 6/13/10	250,100	257,200	7,100	7	1,014

**TABLE 2
HISTORICAL DATA**

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
53	6/14/10 - 6/20/10	257,200	274,200	17,000	7	2,429
54	6/21/10 - 6/27/10	274,200	284,100	9,900	7	1,414
55	6/28/10 - 7/4/10	284,100	298,400	14,300	7	2,043
56	7/5/10 - 7/11/10	298,400	326,000	27,600	7	3,943
57	7/18/10 - 7/25/10	326,000	356,700	30,700	7	4,386
58	7/26/10 - 8/1/10	356,700	380,000	23,300	7	3,329
59-63 ²⁰	8/1/10 - 8/27/10	380,000	383,468	3,468	2	2,312
64	9/06/10 - 9/12/10	383,468	420,192	36,724	7	5,246
65	9/13/10 - 9/19/10	420,192	431,481	11,289	4	2,822
66	9/20/10 - 9/26/10	431,481	443,113	11,632	6	1,939
67	9/27/10 - 10/3/10	443,113	462,381	19,268	2	9,634
68	10/4/10 - 10/10/10	462,381	466,814	4,433	4	1,108
69 ²¹	10/11/10 - 10/17/10	466,814	467,868	1,054	7	151
70 ²¹	10/18/10 - 10/24/10	467,868	472,010	4,142	7	592
71	10/25/10 - 10/31/10	472,010	475,563	3,553	7	508
72	11/1/10 - 11/7/10	475,563	476,500	937	7	134
73	11/8/10 - 11/14/10	476,500	478,638	2,138	2	1,069
74	11/15/10 - 11/21/10	478,638	478,638	0	0	0
75	11/22/10 - 11/28/10	478,638	482,211	3,573	6	596
76	11/29/10 - 12/5/10	478,638	482,211	3,573	7	510
77	12/6/2010 - 12/12/10	482,211	488,222	6,011	6.5	925
78	12/13/10 - 12/19/10	488,222	492,024	3,802	7	543
79	12/20/10 - 12/26/10	492,024	492,838	814	7	116
80	12/27/10 - 01/02/11	492,838	498,188	5,350	7	764
81	1/03/11 - 1/09/11	498,188	498,853	665	7	95
82	1/10/11 - 1/16/11	498,853	502,826	3,973	7	568
83	1/17/11 - 1/23/11	502,826	505,253	2,427	7	347
84-85	1/24/11 - 2/06/11	505,253	507,480	2,227	14	159

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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
86 ²²	2/07/11 - 2/13/11	507,480	507,624	144	0	0
87	2/14/11 - 2/20/11	507,624	519,500	11,876	7	1,697
88 ²³	2/21/11 - 2/27/11	519,500	520,935	1,435	1	1,435
89 ²⁴	2/28/11 - 3/06/11	520,935	520,935	0	0	0
90 ²⁴	3/07/11 - 3/13/11	520,935	520,935	0	0	0
91 ²⁴	3/14/11 - 3/20/11	520,935	520,935	0	0	0
92	3/21/11 - 3/27/11	520,935	524,743	3,808	2	1,731
93	3/28/11 - 4/03/11	524,743	535,683	10,940	7	1,563
94	4/04/11 - 4/10/11	535,683	547,289	11,606	7	1,658
95	4/11/11 - 4/17/11	547,289	557,001	9,712	7	1,387
96	4/18/11 - 4/24/11	557,001	565,437	8,436	7	1,205
97	4/25/11 - 5/01/11	565,437	572,853	7,416	7	1,059
98	5/02/11 - 5/08/11	572,853	576,644	3,791	7	542
99-101 ²⁵	5/9/11 - 5/29/11	576,644	576,984	340	3	113
102	5/30/11 - 6/05/11	576,984	594,342	17,358	7	2,480
103	6/06/11 - 6/12/11	594,342	604,988	10,646	7	1,521
104	6/13/11 - 6/19/11	604,988	615,449	10,460	7	1,494
105	6/20/11 - 6/26/11	615,449	626,388	10,940	7	1,563
106	6/27/11 - 7/03/11	626,388	637,170	10,782	7	1,540
107	7/04/11 - 7/10/11	637,170	648,171	11,001	7	1,572
108	7/11/11 - 7/17/11	648,171	660,652	12,481	7	1,783
109	7/18/11 - 7/24/11	660,652	673,118	12,466	7	1,781
110	7/25/11 - 7/31/11	673,118	686,024	12,906	7	1,844
111	8/01/11 - 8/07/11	686,024	698,681	12,657	7	1,808
112	8/08/11 - 8/14/11	698,681	706,220	7,539	7	1,077
113	8/15/11 - 8/21/11	706,220	711,929	5,709	7	816
114 ²⁶	8/22/11 - 8/28/11	711,929	713,612	1,683	7	240
115-116 ²⁷	08/29/11 - 09/11/11	713,612	715,787	2,175	14	155

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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
117 ²⁸	09/12/11 - 09/18/11	715,787	716,366	578	7	83
118 ²⁸	09/19/11 - 09/25/11	716,366	717,136	771	7	110
119 ²⁸	09/26/11 - 10/02/11	717,136	717,597	461	7	66
120 ²⁸	10/03/11 - 10/09/11	717,597	717,639	41	7	6
121 ²⁸	10/10/11 - 10/16/11	717,639	717,767	128	7	18
122	10/17/11 - 10/23/11	717,767	728,705	10,938	7	1,563
123	10/24/11 - 10/30/11	728,705	743,617	14,912	7	2,130
124	10/31/11 - 11/06/11	743,617	752,756	9,139	7	1,306
125	11/07/11 - 11/13/11	752,756	766,463	13,707	7	1,958
126 ²⁹	11/14/11 - 11/20/11	766,463	768,288	1,825	1	1,825
127 ²⁹	11/21/11 - 11/27/11	768,288	768,288	0	0	0
128 ²⁹	11/28/11 - 12/04/11	768,288	768,288	0	0	0
129 ²⁹	12/05/11 - 12/11/11	768,288	778,260	9,972	6	1662
130	12/12/11 - 12/18/11	778,260	786,866	8,606	7	1229
131	12/19/11 - 12/25/11	786,866	801,536	14,671	7	2157
132	12/26/11 - 01/01/12	801,536	816,699	15,163	7	2166
133	01/02/12 - 01/08/12	816,699	834,132	17,432	7	2490
134	01/09/12 - 01/15/12	834,132	849,913	15,781	7	2254
135-136	01/16/12 - 01/29/12	849,913	881,200	31,287	14	2235
137	01/30/12 - 02/05/12	881,200	896,731	15,531	7	2219
138	02/06/12 - 02/12/12	896,731	909,539	12,808	7	1830
139	02/13/12 - 02/19/12	909,539	921,154	11,615	7	1659
140 ³⁰	02/20/12 - 02/26/12	921,154	936,511	15,356	7	2194
141 ³¹	02/27/12 - 03/04/12	936,511	951,910	15,399	7	2,200
142 ³¹	03/05/12 - 03/11/12	951,910	967,310	15,400	7	2,200
143	03/12/12 - 03/18/12	967,310	991,742	24,432	7	3,490
144	03/19/12 - 03/25/12	991,742	1,019,635	27,893	7	3,985
145	03/26/12 - 04/01/12	1,019,635	1,048,934	29,299	7	4,186

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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
146	04/02/12 - 04/08/12	1,048,934	1,073,527	24,593	7	3,513
147	04/09/12 - 04/15/12	1,073,527	1,098,624	25,097	7	3,585
148	04/16/12 - 04/22/12	1,098,624	1,119,880	21,256	7	3,037
149	04/23/12 - 04/29/12	1,119,880	1,134,604	14,724	7	2,103
150	04/30/12 - 05/06/12	1,134,604	1,159,385	24,781	7	3,540
151 ³²	05/07/12 - 05/13/12	1,159,385	1,175,193	15,808	3	5,269
152-180 ³²	05/14/12 - 12/02/12	1,175,193	1,175,193	0	0	0
181	12/03/12 - 12/09/12	1,175,193	1,177,608	2,415	2	1,208
182	12/10/12 - 12/16/12	1,177,608	1,192,146	14,538	7	2,077
183	12/17/12 - 12/23/12	1,192,146	1,205,512	13,366	7	1,909
184	12/24/12 - 12/30/12	1,205,512	1,223,296	17,784	7	2,541
185	12/31/12 - 01/06/13	1,223,296	1,234,797	11,501	7	1,643
186 ³³	01/07/13 - 01/13/13	1,234,797	1,248,826	14,029	4	3,507
187 ³³	01/14/13 - 01/20/13	1,248,826	1,248,826	0	0	0
188 ³³	01/21/13 - 01/27/13	1,248,826	1,248,826	0	0	0
189	01/28/13 - 02/03/13	1,248,826	1,251,438	2,612	7	373
190-191	02/04/13 - 02/17/13	1,251,438	1,274,104	22,666	14	1,619
192	02/18/13 - 02/24/13	1,274,104	1,294,556	20,452	7	2,922
193	02/25/13 - 03/03/13	1,294,556	1,296,842	2,286	7	327
194-197 ³⁴	03/04/13 - 03/31/13	1,296,842	1,296,842	0	0	0
198	04/01/13 - 04/07/13	1,296,842	1,315,743	18,901	10	1,890
199	04/08/13 - 04/14/13	1,315,743	1,321,002	5,259	3	1,753
200	04/15/13 - 04/21/13	1,321,002	1,338,303	17,301	10	1,730
201	04/22/13 - 04/28/13	1,338,303	1,350,271	11,968	7	1,710
202 ³⁵	04/29/13 - 05/05/13	1,350,271	1,350,384	113	1	113
203 ³⁵	05/06/13 - 05/12/13	1,350,384	1,350,520	136	1	136
204	05/13/13 - 05/19/13	1,350,520	1,361,086	10,566	7	1,509
205	05/20/13 - 05/26/13	1,361,086	1,371,441	10,355	6	1,726

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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
206	05/27/13 - 06/02/13	1,371,441	1,384,244	12,803	10	1,280
207	06/03/13 - 06/09/13	1,384,244	1,387,673	3,429	5	686
208 ³⁶	06/10/13 - 06/16/13	1,387,673	1,387,673	0	0	0
209	06/17/13 - 06/23/13	1,387,673	1,404,318	16,645	10	1,665
210	06/24/13 - 06/30/13	1,404,318	1,411,709	7,391	4	1,848
211	07/01/13 - 07/07/13	1,411,709	1,421,303	9,594	6	1,599
212	07/08/13 - 07/14/13	1,421,303	1,427,382	6,079	7	868
213	07/15/13 - 07/21/13	1,427,382	1,427,803	421	11	38
214	07/22/13 - 07/28/13	1,427,803	1,428,778	975	6	163
215	07/29/13 - 08/04/13	1,428,778	1,429,568	790	5	158
216	08/05/13 - 08/11/13	1,429,568	1,443,307	13,739	6	2,290
217	08/12/13 - 08/18/13	1,443,307	1,443,783	476	7	68
218	08/19/13 - 08/25/13	1,443,783	1,451,604	7,821	7	1,117
219	08/26/13 - 09/01/13	1,451,604	1,451,756	152	8	19
220	09/02/13 - 09/08/13	1,451,756	1,452,079	323	8	40
221	09/09/13 - 09/15/13	1,452,079	1,452,309	230	6	0
222	09/16/13 - 09/22/13	1,452,309	1,452,571	262	7	37
223	09/23/13 - 09/29/13	1,452,571	1,457,893	5,322	9	591
224 ³⁷	09/30/13 - 10/06/13	1,457,893	1,457,893	0	0	0
225	10/07/13 - 10/13/13	1,457,893	1,457,921	28	4	7
226	10/14/13 - 10/20/13	1,457,921	1,458,318	397	7	57
227	10/21/13 - 10/27/13	1,458,318	1,465,485	7,167	7	1,024
228-232 ³⁸	10/28/13 - 12/01/13	1,465,485	1,465,485	0	0	0
233	12/02/13 - 12/08/13	1,465,485	1,487,150	21,665	7	3,095
234	12/09/13 - 12/15/13	1,487,150	1,501,268	14,118	10	1,412
235	12/16/13 - 12/22/13	1,501,268	1,509,669	8,401	6	1,400
236	12/23/13 - 12/29/13	1,509,669	1,517,976	8,307	6	1,385
237	12/30/13 - 01/05/14	1,517,976	1,530,691	12,715	9	1,413

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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
238	01/06/14 - 01/12/14	1,530,691	1,538,973	8,282	6	1,380
239	01/13/14 - 01/19/14	1,538,973	1,545,515	6,542	6	1,090
240	01/20/14 - 01/26/14	1,545,515	1,556,550	11,035	8	1,379
241	01/27/14 - 02/02/14	1,556,550	1,564,560	8,010	6	1,335
242-243 ³⁹	02/03/14 - 02/16/14	1,564,560	1,564,762	202	7	29
244 ⁴⁰	02/17/14 - 02/23/14	1,564,762	1,564,825	63	1	63
245-249 ³⁹	02/24/14 - 03/30/14	1,564,825	1,564,825	0	0	0
250	03/31/14 - 04/06/14	1,564,825	1,569,015	4,190	3	1,397
251	04/07/14 - 04/13/14	1,569,015	1,574,555	5,540	4	1,385
252	04/14/14 - 04/20/14	1,574,555	1,584,173	9,618	7	1,374
253	04/21/14 - 04/27/14	1,584,173	1,599,135	14,962	11	1,360
254	04/28/14 - 05/04/14	1,599,135	1,607,115	7,980	6	1,330
255	05/05/14 - 05/11/14	1,607,115	1,615,156	8,041	6	1,340
256	05/12/14 - 05/18/14	1,615,156	1,625,283	10,127	8	1,266
257	05/19/14 - 05/25/14	1,625,283	1,630,365	5,082	4	1,271
258	05/26/14 - 06/01/14	1,630,365	1,641,307	10,942	10	1,094
259	06/02/14 - 06/08/14	1,641,307	1,650,187	8,880	7	1,269
260	06/09/14 - 06/15/14	1,650,187	1,658,291	8,104	7	1,158
261	06/16/14 - 06/22/14	1,658,291	1,663,401	5,110	4	1,278
262	06/23/14 - 06/29/14	1,663,401	1,675,837	12,436	10	1,244
263 ⁴¹	06/30/14 - 07/06/14	1,675,837	1,680,617	4,780	7	683
264-265 ⁴¹	07/07/14 - 07/20/14	1,680,617	1,680,617	0	0	0
266	07/21/14 - 07/27/14	1,680,617	1,687,513	6,896	9	766
267	07/28/14 - 08/03/14	1,687,513	1,694,891	7,378	6	1,230
268	08/04/14 - 08/10/14	1,694,891	1,704,692	9,801	8	1,225
269 ⁴²	08/11/14 - 08/17/14	1,704,692	1,705,240	548	8	69
270 ⁴²	08/18/14 - 08/24/14	1,705,240	1,705,240	0	0	0
271	08/25/14 - 08/31/14	1,705,240	1,711,210	5,970	9	663

**TABLE 2
HISTORICAL DATA**

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
UST Facility ID 0-005176; LUST File No. 3208.01
PCWW Permit No. 12916
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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
272	09/01/14 - 09/07/14	1,711,210	1,722,842	11,632	5	2,326
273	09/08/14 - 09/14/14	1,722,842	1,731,915	9,073	8	1,134
274	09/15/14 - 09/21/14	1,731,915	1,741,505	9,590	6	1,598
275	09/22/14 - 09/28/14	1,741,505	1,751,876	10,371	7	1,482
276	09/29/14 - 10/05/14	1,751,876	1,764,479	12,603	9	1,400
277	10/06/14 - 10/12/14	1,764,479	1,764,590	111	6	19
278-281 ⁴³	10/13/14 - 11/09/14	1,764,590	1,764,590	0	0	0
282	11/10/14 - 11/16/14	1,764,590	1,764,939	349	2	175
283	11/17/14 - 11/23/14	1,764,939	1,765,072	133	6	22
284	11/24/14 - 11/30/14	1,765,072	1,768,069	2,997	7	428
285	12/01/14 - 12/07/14	1,768,069	1,776,776	8,707	9	967
286	12/08/14 - 12/14/14	1,776,776	1,783,699	6,923	5	1,385
287	12/15/14 - 12/21/14	1,783,699	1,794,167	10,468	7	1,495
288	12/22/14 - 12/28/14	1,794,167	1,807,424	13,257	7	1,894
289	12/29/14 - 01/04/15	1,807,424	1,814,099	6,675	5	1,335
290	01/05/15 - 01/11/15	1,814,099	1,826,744	12,645	9	1,405
291	01/12/15 - 01/18/15	1,826,744	1,827,037	293	7	42
292	01/19/15 - 01/25/15	1,827,037	1,835,990	8,953	6	1,492
293	01/26/15 - 02/01/15	1,835,990	1,846,014	10,024	7	1,432
294	02/02/15 - 02/08/15	1,846,014	1,853,780	7,766	7	1,109
295 ⁴⁴	02/09/15 - 02/15/15	1,853,780	1,853,780	0	0	0
296	02/16/15 - 02/22/15	1,853,780	1,859,970	6,190	5	1,238
297	02/23/15 - 03/01/15	1,859,970	1,869,717	9,747	9	1,083
298	03/02/15 - 03/08/15	1,869,717	1,875,196	5,479	6	913
299	03/09/15 - 03/15/15	1,875,196	1,884,662	9,466	9	1,052
300	03/16/15 - 03/22/15	1,884,662	1,885,340	678	3	226
301	03/23/15 - 03/29/15	1,885,340	1,886,690	1,350	8	169
302	03/30/15 - 04/05/15	1,886,690	1,889,727	3,037	8	380

**TABLE 2
HISTORICAL DATA**

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
UST Facility ID 0-005176; LUST File No. 3208.01
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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
303	04/06/15 - 04/12/15	1,889,727	1,893,945	4,218	5	844
304	04/13/15 - 04/19/15	1,893,945	1,898,374	4,429	7	633
305	04/20/15 - 04/26/15	1,898,374	1,906,409	8,035	9	893
306-307 ⁴⁵	04/27/15 - 05/10/15	1,906,409	1,911,604	5,195	5	1,039
308	05/11/15 - 05/17/15	1,911,604	1,915,491	3,887	7	555
309 ⁴⁶	05/18/15 - 05/24/15	1,915,491	1,915,501	10	1	10
310-312 ⁴⁶	05/25/15 - 06/14/15	1,915,501	1,915,648	147	1	147
313	06/15/15 - 06/21/15	1,915,648	1,923,673	8,025	8	1,003
314	06/22/15 - 06/28/15	1,923,673	1,931,556	7,883	8	985
315	06/29/15 - 07/05/15	1,931,556	1,937,904	6,348	7	907
316-317 ⁴⁷	07/06/15 - 07/19/15	1,937,904	1,942,214	4,310	5	862
317	07/13/15 - 07/19/15	1,942,214	1,942,214	0	0	0
318	07/20/15 - 07/26/15	1,942,214	1,948,458	6,244	7	892
319	07/27/15 - 08/02/15	1,948,458	1,953,256	4,798	7	685
320	08/03/15 - 08/09/15	1,953,256	1,959,514	6,258	10	626
321	08/10/15 - 08/16/15	1,959,514	1,962,004	2,490	4	623
322	08/17/15 - 08/23/15	1,962,004	1,964,557	2,553	10	255
323	08/24/15 - 08/30/15	1,964,557	1,964,604	47	7	7
324	08/31/15 - 09/06/15	1,964,604	1,969,005	4,401	3	1,467
325	09/07/15 - 09/13/15	1,969,005	1,970,949	1,944	9	216
326-335 ⁴⁸	09/14/15 - 11/22/15	1,970,949	1,970,949	0	0	0
336 ⁴⁹	11/23/15 - 11/29/15	1,970,949	1,970,960	11	1	11
337-339 ⁴⁸	11/30/15 - 12/20/15	1,970,960	1,970,960	0	0	0
340	12/21/15 - 12/27/15	1,970,960	1,972,390	1,430	7	204
341	12/28/15 - 01/03/16	1,972,390	1,972,781	391	3	130
342	01/04/16 - 01/10/16	1,972,781	1,972,792	11	1	11
343-345 ⁵⁰	01/11/16 - 01/31/16	1,972,792	1,972,897	105	1	105
346	02/01/16 - 02/07/16	1,972,897	1,973,037	140	1	140

**TABLE 2
HISTORICAL DATA**

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
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Week No.	Dates	Previous Weeks' Total (Gallons)	Weeks' Total (Gallons)	Total Volume for Week(s) (Gallons)	Well Pump Run Time (Days)	Average Daily Flow Rate (GPD)
347	02/08/16 - 02/14/16	1,973,037	1,977,577	4,540	7	649
348	02/15/16 - 02/21/16	1,977,577	1,979,215	1,638	4	410
349-350 ⁵¹	02/22/16 - 03/06/16	1,979,215	1,982,649	3,434	6	572
Total Average Flowrate (GPD)						1,226

Notes:

GPD = gallons per day

- ¹ Well water extraction was not turned on until 6/30/09 due to air leaks needing repairs. Actual Well Pump Run-time from 6/11 to 7/5 is 6 days.
- ² Well water extraction was turned off for 5 days for maintenance of system and pumps. Well Pump Run-time from 7/6 to 7/12 is 2 days.
- ³ Well water extraction was turned off for 2 days to for maintenance inspection. Well Pump Run-time from 7/13 to 7/19 is 5 days.
- ⁴ Well water extraction was turned off for 2 days to replace cam locks and maintenance. Well Pump Run-time from 7/20 to 7/26 is 5 days.
- ⁵ Well water extraction was on for only 2 days to open up wells DIW & DIE and to conduct light non-aqueous phase liquids (LNAPL) readings. Well Pump Run-time from 7/27 to 8/2 is 2 days.
- ⁶ Well water extraction was off to open up wells DIW & DIE and to conduct LNAPL readings. Well Pump Run-time from 8/3 to 8/9 is 0 days.
- ⁷ Well water extraction was off to open up wells DIW & DIE and to conduct LNAPL readings. Well Pump Run-time from 8/10 to 8/23 is 0 days.
- ⁸ Well water extraction was on for 3 days due to needed repairs for pumps and maintenance inspection. Well Pump Run-time from 7/27 to 8/2 is 3 days.
- ⁹ Well water extraction was off due to extraction pump malfunctioning.
- ¹⁰ Extraction from water wells was terminated to measure LNAPL rebound. Well Pump Run-time from 10/13 to 10/19 is 1 day.
- ¹¹ Extraction from water wells was terminated to measure LNAPL rebound. Well Pump Run-time from 10/20 to 10/26 is 3 days.
- ¹² Well water extraction was turned off for maintenance of system. Well Pump Run-time from 11/3 to 11/9 is 3 days.
- ¹³ Well water extraction was turned off for maintenance of system and to relocate RSI ICE Unit to Area of Concern 2 (AOC2) at well CEP-519A. Well Pump Run-time from 11/10 to 11/16 is 1 day.
- ¹⁴ RSI unit was relocated to AOC2 for vapor extraction at well CEP-519A.
- ¹⁵ No groundwater extraction was conducted during this period (soil vapor extraction was conducted at AOC2).
- ¹⁶ The vapor extraction/groundwater extraction (VEGE) system was shutdown on 12/29/09 and not operated thereafter. The unit was returned to the equipment vendor on 1/6/10.
- ¹⁷ System construction of the oil/water seperator (OWS) remediation system was conducted in March 2010. The system began operation on 3/24/10.
- ¹⁸ Periodic operation during system start-up and commissioning.
- ¹⁹ Periodic operation during system start-up and commissioning. System was shut down for several days beginning on 4/20/10 to review and implement modifications.
- ²⁰ System was shut down for most of the time during this period due to needed maintenance and repairs to the OWS, remediation system, and pump air lines.
The system was operational on 8/26 and 8/27.
- ²¹ Pump in well HQUST 524A was turned off by City of Tucson (COT) maintenance for a 5-day period.

TABLE 2
HISTORICAL DATA

City of Tucson Police/Fire Station Headquarters
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Notes:

- ²² System was shut down for repairs (pipes burst due to the extremely long freezing temperatures).
- ²³ System was shut down on 2/21/11 so LNAPL rebound monitoring could be conducted.
- ²⁴ System was shut down on 2/21/11 to 3/25/11 so LNAPL rebound monitoring could be conducted.
- ²⁵ The pumps had plugged and were not pumping groundwater during a 3-week period. The final totalizer reading was collected on 5/26/11 when system maintenance was conducted. The number of days of Run-time is estimated.
- ²⁶ The pump in well HQUST-523A was plugged and was pulled for maintenance on 8/24/11.
- ²⁷ Extraction well HQUST-524A was taken off line due to a faulty air regulator.
- ²⁸ Extraction well HQUST-523A was taken off line, pump had become non-functional due to mechanical failure, new pump on order.
- ²⁹ System shut down for ISCO pilot test and COT quarterly sampling event.
- ³⁰ Extraction well HQUST-523A was taken off line, pump had become non-functional due to mechanical failure.
- ³¹ Extraction well HQUST-524A was taken off line, pump had become non-functional due to mechanical failure.
- ³² System was initially shut down for May 2012 ISCO pilot test, COT second quarterly sampling event, and for remedial technology evaluation.
- ³³ System was shut down on January 11, 2013 due to freezing temperatures.
- ³⁴ System was shut down on March 1, 2013 for soil vapor extraction remedial equipment install. The system was restarted the week of April 1, 2013.
- ³⁵ System was shut down on April 30, 2013 for pump manifold replacement. System was cycled manually during the repair phase and re-started on May 7, 2013.
- ³⁶ System was shut down on June 4, 2013 due to an observed leak in the carbon vessel hose. The hose was replaced and the system was restarted on June 11, 2013.
- ³⁷ System was shut down for maintenance of well pumps.
- ³⁸ System was shut down on October 21, 2013 for replacement of well pumps.
- ³⁹ System was shut down on February 4, 2014 due to an observed leak in carbon vessel CV2. The vessel was repaired and the system was restarted on March 31, 2014.
- ⁴⁰ On February 18, 2014 the system was cycled on to collect discharge compliance samples.
- ⁴¹ System was shut down on July 3, 2014 due to damaged transfer pump fittings. Transfer pump fittings were replaced and the system was restarted the week of July 14, 2014.
- ⁴² System was shut down on August 11, 2014 to replace the transfer pump, and was restarted on August 21, 2014.
- ⁴³ System was shut down the week of October 13, 2014 to repair the air compressor. The air compressor was repaired and the system was restarted on November 12, 2014.
- ⁴⁴ The system was shut down on February 6, 2015 for routine maintenance, and was restarted on February 12, 2015.
- ⁴⁵ The system was shut down on April 27, 2015 for routine maintenance, and was restarted on May 4, 2015.
- ⁴⁶ The system was shut down on May 12, 2015 for transfer pump maintenance, and was cycled on to collect discharge compliance samples on May 26, 2015. The system was restarted on June 8, 2015.
- ⁴⁷ The system was shut down on July 6, 2015 for well pump maintenance, and was restarted on July 14, 2015.
- ⁴⁸ On September 9, 2015, the system was shut down and groundwater pumps were removed from monitor wells HQUST-523A and HQUST-524A to assess free product recovery, groundwater conditions, and collect quarterly groundwater samples. The system was restarted on December 14, 2015.

TABLE 2

HISTORICAL DATA

City of Tucson Police/Fire Station Headquarters
265 South Church Avenue, Tucson, Arizona
UST Facility ID 0-005176; LUST File No. 3208.01
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⁴⁹ On November 24, 2015 the system was cycled on to collect discharge compliance samples.

⁵⁰ On January 5, 2016 the system was shut down due to prolonged freezing temperatures, and was restarted on January 26, 2016.

⁵¹ On February 22, 2016 the system was shut down for routine maintenance, and was restarted on March 1, 2016.

APPENDIX A

**PIMA COUNTY REGIONAL WASTEWATER RECLAMATION
DEPARTMENT INDUSTRIAL WASTE WATER CONTROL
SELF-MONITORING REPORTING FORM**

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT INDUSTRIAL WASTEWATER CONTROL SELF-MONITORING REPORT FORM

PART I. BUSINESS INFORMATION (Make necessary corrections)

FACILITY NAME: City of Tucson Environmental Services

PERMIT NO.: 12916

MAILING ADDRESS PO Box 27210
Tucson, AZ 85701

SERVICE ADDRESS: 265 South Church Avenue
Tucson, AZ 85710

PART II. REPORT INFORMATION

SAMPLING PERIOD: 12/01/2015 to 02/29/2016 **REPORT DUE:** 03/28/2016

PERMIT EXPIRATION PERIOD: 06/07/2017

PERMIT RENEWAL DATE: 12/09/2016

PART III. MONITORING REQUIREMENTS (Fill in the blanks)

A. ANALYSIS LIMITS AND RESULTS

SAMPLE LOCATION: 100 Collected at a sample port located down stream from the process water carbon vessels.

PARAMETER	LIMITS	SAMPLE FREQ	PERMITTED SAMPLE TYPE	ACTUAL SAMPLE TYPE	NAME OF SAMPLER	SAMPLE DATE	RESULTS
Chemical Oxygen Demand	***	QUARTERLY	COMPOS	Composite	John Manley	12/21/15	<20 mg/L
Oil and Grease	200.0 mg/L	QUARTERLY	GRAB	Grab	John Manley	12/21/15	<5.0 mg/L
pH	5.0-11 S.U.	QUARTERLY	GRAB	Grab	John Manley	12/21/15	7.00
Purgeable Aromatics	***	QUARTERLY	GRAB	Grab	John Manley	12/21/15	ND
Purgeable Halocarbons	***	QUARTERLY	GRAB	Grab	John Manley	12/21/15	ND
Total Suspended Solids	***	QUARTERLY	COMPOS	Composite	John Manley	12/21/15	<5.0 mg/L

*** = Monitoring and reporting required. No limits set at this time.

Sample Location: 100 Collected at a sample port located down stream from the process water carbon vessels.

Were any additional compliance samples taken? YES [] NO [X]

FACILITY NAME: City of Tucson Environmental Services

PERMIT NO.: 12916

SAMPLING PERIOD: 12/01/2015 to 02/29/2016

MAILING ADDRESS PO Box 27210
Tucson, AZ 85701

SERVICE ADDRESS: 265 South Church Avenue
Tucson, AZ 85710

B. LABORATORY INFORMATION (check which one is applicable and fill in the blank)

Samples were taken by an independent lab [X]

Samples were NOT taken by an independent lab []

Name of Lab Performing Analysis: Accutest Laboratories

C. WASTEWATER FLOW INFORMATION (Fill in the blanks)

NOTE: 1 CCF = 100 Cubic Feet = 748 Gallons

SAMPLE LOCATION: 100 Collected at a sample port located down stream from the process water carbon vessels.

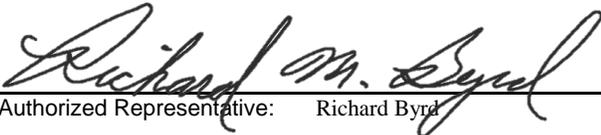
MEASRD Flow (total)

Date: 12/21/2015 ** Flow is monitored weekly for permit compliance.

Flow (Gallons): **247

PART IV. REPORT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Authorized Representative: Richard Byrd

Date: 03 / 24 / 2016

Mail completed Report to: Pima County Regional Wastewater Reclamation Department
Industrial Wastewater Control
2955 West Calle Agua Nueva
Tucson, AZ 85745

Pima County Regional Wastewater Reclamation Department
Industrial Wastewater Control Section

INSTRUCTIONS FOR COMPLETING THE SELF-MONITORING REPORT FORM (SMRF)

Part I. Business Information

Review information and make any changes or corrections on the Self-Monitoring Report Form (SMRF).

Part II. Report Information

This part lists the Sampling Period for the SMRF. All required industrial wastewater samples shall be taken during normal operations within the sampling period. Return the completed SMRF to Industrial Wastewater Control Section no later than the report due date.

Part III. Monitoring Requirements

This part of the report form provides blanks for submittal of sampling and flow data collected for the sampling period. A blank is provided for each analysis result required to be reported.

A. Transfer (type or print) the following information from the laboratory analysis report into the blanks provided:

1. Actual Sample Type (grab or composite)
2. Name of Sampler (name of the person who collected sample)
3. Sample Date (date the sample was collected, not analysis date)
4. Analysis Results (from the report by an independent laboratory.) If the results are "ND" or "Not Detected", please indicate the detection limit in parenthesis; i.e., "ND (0.001)"
5. Sample Location (that part of your system where the sample was collected, i.e., "Cleanout on the discharge side of the grease trap.")

Refer to Part 1.A.3. of your permit if you are not sure of the sampling requirements. Do not send laboratory analysis reports. Keep all records for a minimum of three years.

B. Check the box next to the appropriate statement to indicate whether the person who collected the sample(s) is an employee of your business or an employee of the independent laboratory that performed the sample analysis. Write in the name of the independent laboratory that performed the sample analysis.

C. A blank is provided for each flow value requirement. Type or print the flow data into the blanks provided. Note: if flow monitoring is not required for your permit this part will not appear on the SMRF.

Part IV. Report Certification

Please read carefully. The only acceptable signature is that of the Authorized Representative whose name is printed under the signature line. If this person is no longer the Authorized Representative, indicate the new Authorized Representative.

Refer to your permit for clarification of the requirements. SMRFs are provided as a courtesy. Every effort has been made to verify that they accurately reflect your permit requirements. In the event it does not, you are required to submit the information required by your permit. For further information or help completing the SMRF, please call (520) 724-6200.

APPENDIX B

LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY RECORD

Technical Report for

City of Tucson Environmental Services

HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

P01152

Accutest Job Number: C43415

Sampling Date: 12/21/15

Report to:

City of Tucson - Env.Services
4400 S. Park Ave., Bldg 1 P.O. Box 27210
Tucson, AZ 85726
Lori.Ehman@tucsonaz.gov; richard.byrd@tucsonaz.gov;
norman.buxton@cardno.com; justin.patton@cardno.com;
ATTN: Richard Byrd

Total number of pages in report: **37**



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



James J. Rhudy
Lab Director

Client Service contact: Maureen Coloma 408-588-0200

Certifications: CA (ELAP 2910) AK (UST-092) AZ (AZ0762) NV (CA00150) OR (CA300006) WA (C925)
DoD ELAP (L-A-B L2242)

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

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Sample Summary

City of Tucson Environmental Services

Job No: C43415

HQUST P01152 - 260 South Stone Avenue, Tucson, AZ
Project No: P01152

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
C43415-1	12/21/15	12:00 FM	12/22/15	AQ	Ground Water	HQUST-GW-EFF
C43415-2	12/21/15	13:00 FM	12/22/15	AQ	Ground Water	HQUST-GW-CV1
C43415-3	12/21/15	12:15 FM	12/22/15	AQ	Ground Water	HQUST-GW-INF
C43415-4	12/21/15	00:00 FM	12/22/15	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: City of Tucson Environmental Services

Job No C43415

Site: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Report Date 12/28/2015 8:08:19 P

3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 12/21/2015 and were received at Accutest on 12/22/2015 properly preserved, at 3.2 Deg. C and intact. These Samples received an Accutest job number of C43415. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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

Volatiles by GCMS By Method EPA 624

Matrix: AQ

Batch ID: VV1258

- All method blanks and blank spikes for this batch meet method specific criteria.

Wet Chemistry By Method EPA 1664A

Matrix: AQ

Batch ID: GP8834

- All method blanks and blank spikes for this batch meet method specific criteria.
- Sample(s) C43415-1MS were used as the QC samples for HEM Oil and Grease.
- Matrix Spike Recovery(s) for HEM Oil and Grease are outside control limits. Spike recovery indicates possible matrix interference.

Wet Chemistry By Method HACH 8000

Matrix: AQ

Batch ID: GP8837

- All method blanks and blank spikes for this batch meet method specific criteria.
- Sample(s) C43415-1MSD, C43415-1MS were used as the QC samples for Chemical Oxygen Demand.

Wet Chemistry By Method SM2540 D-07

Matrix: AQ

Batch ID: GN18139

- All method blanks and blank spikes for this batch meet method specific criteria.
- Sample(s) C43399-2DUP were used as the QC samples for Solids, Total Suspended.
- RPD(s) for Duplicate for Solids, Total Suspended are outside control limits due to sample nonhomogeneity.

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

Summary of Hits

Job Number: C43415
Account: City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ
Collected: 12/21/15



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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C43415-1 HQUST-GW-EFF

No hits reported in this sample.

C43415-2 HQUST-GW-CV1

No hits reported in this sample.

C43415-3 HQUST-GW-INF

Ethylbenzene	13.1	1.0		ug/l	EPA 624
Isopropylbenzene	2.2	1.0		ug/l	EPA 624
Naphthalene	45.5	5.0		ug/l	EPA 624
n-Propylbenzene	3.0	2.0		ug/l	EPA 624
1,2,4-Trimethylbenzene ^a	118	5.0		ug/l	EPA 624
1,3,5-Trimethylbenzene	60.2	2.0		ug/l	EPA 624
Toluene	1.7	1.0		ug/l	EPA 624
m,p-Xylene	81.3	1.0		ug/l	EPA 624
o-Xylene	59.2	1.0		ug/l	EPA 624
Chemical Oxygen Demand	29.5	20		mg/l	HACH 8000
Solids, Total Suspended	5.0	5.0		mg/l	SM2540 D-07

C43415-4 TRIP BLANK

No hits reported in this sample.

(a) AZ:D2

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	HQUST-GW-EFF	Date Sampled:	12/21/15
Lab Sample ID:	C43415-1	Date Received:	12/22/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V30797.D	1	12/28/15	KZ	n/a	n/a	VV1258
Run #2							

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

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
108-20-3	Di-Isopropyl ether ^a	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HQUST-GW-EFF	Date Sampled:	12/21/15
Lab Sample ID:	C43415-1	Date Received:	12/22/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether ^a	ND	2.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	100%		70-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HQUST-GW-EFF		Date Sampled: 12/21/15
Lab Sample ID: C43415-1		Date Received: 12/22/15
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 624		
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%		70-130%

(a) AZ: T2, T6

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

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

4.1
4

Report of Analysis

Client Sample ID: HQUST-GW-EFF	Date Sampled: 12/21/15
Lab Sample ID: C43415-1	Date Received: 12/22/15
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chemical Oxygen Demand	< 20	20	mg/l	1	12/28/15 10:27	EB	HACH 8000
HEM Oil and Grease	< 5.0	5.0	mg/l	1	12/26/15 20:00	PH	EPA 1664A
Solids, Total Suspended	< 5.0	5.0	mg/l	1	12/24/15 09:13	EA	SM2540 D-07

RL = Reporting Limit

4.1
 4

Report of Analysis

Client Sample ID:	HQUST-GW-CV1	Date Sampled:	12/21/15
Lab Sample ID:	C43415-2	Date Received:	12/22/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V30798.D	1	12/28/15	KZ	n/a	n/a	VV1258
Run #2							

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

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
108-20-3	Di-Isopropyl ether ^a	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HQUST-GW-CV1	Date Sampled:	12/21/15
Lab Sample ID:	C43415-2	Date Received:	12/22/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether ^a	ND	2.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	102%		70-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HQUST-GW-CV1		Date Sampled: 12/21/15
Lab Sample ID: C43415-2		Date Received: 12/22/15
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 624		
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		70-130%

(a) AZ: T2, T6

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

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

4.2
4

Report of Analysis

Client Sample ID: HQUST-GW-INF		Date Sampled: 12/21/15
Lab Sample ID: C43415-3		Date Received: 12/22/15
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 624		
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V30799.D	1	12/28/15	KZ	n/a	n/a	VV1258
Run #2	V30802.D	2.5	12/28/15	KZ	n/a	n/a	VV1258

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

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
108-20-3	Di-Isopropyl ether ^a	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: HQUST-GW-INF	
Lab Sample ID: C43415-3	Date Sampled: 12/21/15
Matrix: AQ - Ground Water	Date Received: 12/22/15
Method: EPA 624	Percent Solids: n/a
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ	

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	13.1	1.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	2.2	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	45.5	5.0	ug/l	
103-65-1	n-Propylbenzene	3.0	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether ^a	ND	2.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene ^b	118 ^c	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	60.2	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	1.7	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
	m,p-Xylene	81.3	1.0	ug/l	
95-47-6	o-Xylene	59.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	99%	70-130%
2037-26-5	Toluene-D8	101%	100%	70-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HQUST-GW-INF		Date Sampled: 12/21/15
Lab Sample ID: C43415-3		Date Received: 12/22/15
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 624		
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%	99%	70-130%

- (a) AZ:T2,T6
- (b) AZ:D2
- (c) Result is from Run# 2

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

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

Report of Analysis

Client Sample ID: HQUST-GW-INF	Date Sampled: 12/21/15
Lab Sample ID: C43415-3	Date Received: 12/22/15
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chemical Oxygen Demand	29.5	20	mg/l	1	12/28/15 10:27	EB	HACH 8000
HEM Oil and Grease	< 5.0	5.0	mg/l	1	12/26/15 20:00	PH	EPA 1664A
Solids, Total Suspended	5.0	5.0	mg/l	1	12/24/15 09:13	EA	SM2540 D-07

RL = Reporting Limit

4.3
4

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	12/21/15
Lab Sample ID:	C43415-4	Date Received:	12/22/15
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUEST P01152 - 260 South Stone Avenue, Tucson, AZ		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V30796.D	1	12/28/15	KZ	n/a	n/a	VV1258
Run #2							

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

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	ug/l	
75-25-2	Bromoform	ND	0.50	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	0.50	ug/l	
75-00-3	Chloroethane	ND	0.50	ug/l	
67-66-3	Chloroform	ND	0.50	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
108-20-3	Di-Isopropyl ether ^a	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	12/21/15
Lab Sample ID:	C43415-4	Date Received:	12/22/15
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 624		
Project:	HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether ^a	ND	2.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	ug/l	
75-01-4	Vinyl chloride	ND	0.50	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	103%		70-130%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK		Date Sampled: 12/21/15
Lab Sample ID: C43415-4		Date Received: 12/22/15
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: EPA 624		
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ		

VOA 624 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		70-130%

(a) AZ: T2, T6

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

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

4.4
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Arizona Qualifiers
- Chain of Custody

Arizona Qualifiers

Job Number: C43415

Account: CTESAZT City of Tucson Environmental Services

Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

The following Arizona qualifiers have been applied to data and/or QC in this report.

Qual	Description
D2	Sample required dilution due to high concentration of target analyte.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
R9	Sample RPD exceeded the laboratory acceptance limit.
T2	Cited ADHS licensed method does not contain this analyte as part of method compound list.
T6	The reported result cannot be used for compliance purposes.

5.1

5



ACCUTEST[®]

LABORATORIES

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
 (408) 588-0200 FAX: (408) 588-0201

Page 1 of 1

FED-EX Tracking # 7752 6844 0218 Bottle Order Control #
 Accutest Quote # _____ Accutest NC Job #: C43415

Client / Reporting Information		Project Information		Requested Analysis										Matrix Codes																
Company Name City of Tucson Environmental Services		Project Name: HQUEST P01152												WW- Wastewater GW- Ground Water SW- Surface Water SO- Soil OI-Oil WP-Wipe LIQ - Non-aqueous Liquid AIR DW- Drinking Water (Perchlorate Only)																
Address 4004 South Park Avenue		Street 260 South Stone Avenue																												
City State Zip Tucson AZ 85726		City State Tucson AZ																												
Project Contact: Richard Byrd		Project #																												
Phone # 520.837.3710		EMAIL: richard.byrd@tucsonaz.gov justin.patton@cardno.com																												
Sampler's Name John Manby		Client Purchase Order #																												
Accutest Sample ID	Sample ID / Field Point / Point of Collection	Collection			Matrix	# of bottles	Number of preserved Bottles										COD	VOC 624	O&G 1664	TSS	LAB USE ONLY									
		Date	Time	Sampled by			Q	1	2	3	4	5	6	7	8	9						10	11	12						
1	HQUEST-GW-EFF	12-21-15	12:00	JM	GW	8	3														X	X	X	X						
2	HQUEST-GW-CV1	12-21-15	13:00	JM	GW	3	3																							
3	HQUEST-GW-INF	12-21-15	12:15	JM	GW	8	3																							
4	Trip Blank					2	2																							

3 DAYS

Turnaround Time (Business days) _____ Data Deliverable Information _____

Approved By / Date: _____

10 Day
 5 Day
 3 Day (125% markup)
 2 Day (150% markup)
 1 Day (200% markup)
 Same Day (300% markup)

Commercial "A" - Results only
 Commercial "B" - Results with QC summaries
 Commercial "B+" - Results, QC, and chromatograms
 FULL1 - Level 4 data package
 EDF for Geotracker EDD Format _____
 Provide EDF Global ID _____
 Provide EDF Logcode: _____

Emergency T/A data available VIA Lablink

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: <u>John Manby</u>	Date Time: <u>12-21-15 16:00</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Date Time: <u>12-21-15 17:00</u>	Received By: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Date Time: <u>12-22-15 12:40</u>	Received By: <u>[Signature]</u>

Custody Seal # 15785 Appropriate Bottle / Pres. Y / N _____ Headspace Y / N _____ On Ice Y / N _____
 Labels match Coc? Y / N _____ Separate Receiving Check List used: Y / N _____
 Cooler Temp: 4.1 / 3.2

C43415: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C43415 **Client:** CITY OF TUCSON ENVIRONMENTAL SE **Project:** HQUST P01152
Date / Time Received: 12/22/2015 12:40:00 PM **Delivery Method:** FedEx **Airbill #s:** 775268440218
Cooler Temps (Initial/Adjusted): #1: (4.1/3.2):

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

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Therm ID:	IR3;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

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

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

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

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

Comments

5.2
5

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-MB	V30795.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	

Method Blank Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-MB	V30795.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Compound	Result	RL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	99% 70-130%

Method Blank Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-MB	V30795.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	101% 70-130%
460-00-4	4-Bromofluorobenzene	100% 70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-BS	V30792.D	1	12/28/15	KZ	n/a	n/a	VV1258
VV1258-BSD	V30793.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	17.6	88	17.9	90	2	77-122/25
108-86-1	Bromobenzene	20	18.9	95	19.1	96	1	76-126/17
74-97-5	Bromochloromethane	20	18.8	94	19.0	95	1	77-130/17
75-27-4	Bromodichloromethane	20	18.2	91	18.4	92	1	75-127/16
75-25-2	Bromoform	20	18.5	93	18.9	95	2	69-141/17
104-51-8	n-Butylbenzene	20	19.5	98	19.2	96	2	72-129/18
135-98-8	sec-Butylbenzene	20	19.1	96	18.9	95	1	74-128/18
98-06-6	tert-Butylbenzene	20	18.6	93	18.6	93	0	73-127/18
108-90-7	Chlorobenzene	20	18.0	90	18.2	91	1	77-122/16
75-00-3	Chloroethane	20	16.7	84	16.9	85	1	69-133/18
67-66-3	Chloroform	20	17.8	89	17.8	89	0	74-126/17
95-49-8	o-Chlorotoluene	20	18.8	94	17.8	89	5	72-127/20
106-43-4	p-Chlorotoluene	20	18.6	93	18.5	93	1	68-127/18
56-23-5	Carbon tetrachloride	20	18.7	94	17.9	90	4	71-133/19
75-34-3	1,1-Dichloroethane	20	17.0	85	17.0	85	0	71-125/17
75-35-4	1,1-Dichloroethylene	20	17.0	85	16.4	82	4	66-125/20
563-58-6	1,1-Dichloropropene	20	16.2	81	15.9	80	2	75-124/18
96-12-8	1,2-Dibromo-3-chloropropane	20	18.9	95	18.7	94	1	65-131/20
106-93-4	1,2-Dibromoethane	20	18.6	93	18.9	95	2	75-135/17
107-06-2	1,2-Dichloroethane	20	18.1	91	18.2	91	1	71-131/17
78-87-5	1,2-Dichloropropane	20	18.5	93	18.6	93	1	78-124/16
142-28-9	1,3-Dichloropropane	20	19.4	97	19.7	99	2	78-123/16
108-20-3	Di-Isopropyl ether	20	17.9	90	18.1	91	1	68-129/17
594-20-7	2,2-Dichloropropane	20	19.6	98	18.9	95	4	70-131/19
124-48-1	Dibromochloromethane	20	18.4	92	18.6	93	1	76-132/16
75-71-8	Dichlorodifluoromethane	20	18.5	93	17.8	89	4	32-168/28
156-59-2	cis-1,2-Dichloroethylene	20	18.8	94	18.9	95	1	73-126/17
10061-01-5	cis-1,3-Dichloropropene	20	19.5	98	19.8	99	2	72-130/16
541-73-1	m-Dichlorobenzene	20	18.7	94	18.8	94	1	75-124/16
95-50-1	o-Dichlorobenzene	20	18.7	94	19.0	95	2	76-124/16
106-46-7	p-Dichlorobenzene	20	18.6	93	19.0	95	2	75-124/16
156-60-5	trans-1,2-Dichloroethylene	20	16.1	81	15.8	79	2	71-126/18
10061-02-6	trans-1,3-Dichloropropene	20	18.7	94	18.8	94	1	71-126/16
100-41-4	Ethylbenzene	20	18.5	93	18.6	93	1	76-126/17
637-92-3	Ethyl Tert Butyl Ether	20	18.1	91	18.2	91	1	75-134/17
591-78-6	2-Hexanone	80	72.6	91	76.0	95	5	67-150/22

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-BS	V30792.D	1	12/28/15	KZ	n/a	n/a	VV1258
VV1258-BSD	V30793.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	20	20.2	101	20.5	103	1	69-135/20
98-82-8	Isopropylbenzene	20	18.5	93	18.7	94	1	61-125/17
99-87-6	p-Isopropyltoluene	20	19.0	95	19.1	96	1	68-127/18
108-10-1	4-Methyl-2-pentanone	80	72.2	90	74.6	93	3	71-142/21
74-83-9	Methyl bromide	20	19.1	96	19.1	96	0	68-132/18
74-87-3	Methyl chloride	20	17.2	86	17.8	89	3	39-150/28
74-95-3	Methylene bromide	20	19.1	96	19.3	97	1	77-127/16
75-09-2	Methylene chloride	20	17.1	86	17.4	87	2	67-128/18
78-93-3	Methyl ethyl ketone	80	72.4	91	71.2	89	2	56-155/23
1634-04-4	Methyl Tert Butyl Ether	20	17.2	86	17.3	87	1	73-132/17
91-20-3	Naphthalene	20	17.1	86	17.3	87	1	70-136/20
103-65-1	n-Propylbenzene	20	18.5	93	18.4	92	1	71-127/17
100-42-5	Styrene	20	19.1	96	19.3	97	1	72-134/16
994-05-8	Tert-Amyl Methyl Ether	20	18.5	93	18.6	93	1	73-133/17
75-65-0	Tert-Butyl Alcohol	100	79.0	79	74.9	75	5	60-149/26
630-20-6	1,1,1,2-Tetrachloroethane	20	19.2	96	19.7	99	3	77-130/16
71-55-6	1,1,1-Trichloroethane	20	18.0	90	17.7	89	2	74-128/19
79-34-5	1,1,2,2-Tetrachloroethane	20	18.2	91	18.8	94	3	77-129/17
79-00-5	1,1,2-Trichloroethane	20	18.4	92	18.9	95	3	77-125/16
87-61-6	1,2,3-Trichlorobenzene	20	18.8	94	19.2	96	2	70-133/18
96-18-4	1,2,3-Trichloropropane	20	17.9	90	18.3	92	2	69-126/18
120-82-1	1,2,4-Trichlorobenzene	20	19.2	96	19.5	98	2	68-129/17
95-63-6	1,2,4-Trimethylbenzene	20	18.5	93	18.7	94	1	74-129/17
108-67-8	1,3,5-Trimethylbenzene	20	19.3	97	19.4	97	1	77-129/17
127-18-4	Tetrachloroethylene	20	17.7	89	17.4	87	2	69-127/20
108-88-3	Toluene	20	18.2	91	18.5	93	2	75-122/17
79-01-6	Trichloroethylene	20	17.7	89	17.5	88	1	78-123/17
75-69-4	Trichlorofluoromethane	20	20.2	101	19.8	99	2	65-136/23
75-01-4	Vinyl chloride	20	18.4	92	18.4	92	0	57-146/22
	m,p-Xylene	40	36.8	92	36.9	92	0	76-125/17
95-47-6	o-Xylene	20	18.2	91	18.4	92	1	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	99%	99%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C43415
Account: CTESAZT City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV1258-BS	V30792.D	1	12/28/15	KZ	n/a	n/a	VV1258
VV1258-BSD	V30793.D	1	12/28/15	KZ	n/a	n/a	VV1258

The QC reported here applies to the following samples:

Method: EPA 624

C43415-1, C43415-2, C43415-3, C43415-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
2037-26-5	Toluene-D8	100%	101%	70-130%
460-00-4	4-Bromofluorobenzene	99%	99%	70-130%

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
 GENERAL CHEMISTRY

Login Number: C43415
 Account: CTESAZT - City of Tucson Environmental Services
 Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chemical Oxygen Demand	GP8837/GN18152	20	0.0	mg/l	500	461	92.1	90-110%
HEM Oil and Grease	GP8834/GN18148	5.0	0.0	mg/l	40	35.9	89.8	78-114%
Solids, Total Suspended	GN18139	5.0	0.0	mg/l	1000	801	80.1	80-120%

Associated Samples:

Batch GP8834: C43415-1, C43415-3
 Batch GP8837: C43415-1, C43415-3
 Batch GN18139: C43415-1, C43415-3
 (*) Outside of QC limits

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BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C43415
Account: CTESAZT - City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chemical Oxygen Demand	GP8837/GN18152	mg/l	500	457	0.9	25%
HEM Oil and Grease	GP8834/GN18148	mg/l	40	36.2	0.8	18%

Associated Samples:

Batch GP8834: C43415-1, C43415-3

Batch GP8837: C43415-1, C43415-3

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C43415
Account: CTESAZT - City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Suspended	GN18139	C43399-2	mg/l	165	180	8.7*(a)	0-5%

Associated Samples:

Batch GN18139: C43415-1, C43415-3

(*) Outside of QC limits

(a) High RPD due to sample nonhomogeneity. AZ:R9

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C43415
Account: CTESAZT - City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chemical Oxygen Demand	GP8837/GN18152	C43415-1	mg/l	15.4	250	236	88.2(a)	90-110%
HEM Oil and Grease	GP8834/GN18148	C43415-1	mg/l	1.3	38.1	22.3	55.0*(b)	78-114%

Associated Samples:

Batch GP8834: C43415-1, C43415-3

Batch GP8837: C43415-1, C43415-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Within 75-125% criteria for method COD HACH 8000.

(b) Spike recovery indicates possible matrix interference. AZ:M2

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MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C43415
Account: CTESAZT - City of Tucson Environmental Services
Project: HQUST P01152 - 260 South Stone Avenue, Tucson, AZ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chemical Oxygen Demand	GP8837/GN18152	C43415-1	mg/l	15.4	250	238	0.9	25%

Associated Samples:

Batch GP8837: C43415-1, C43415-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

APPENDIX C
FIELD DATA SHEET

OPERATION AND MAINTENANCE PUMP AND TREAT SYSTEM READINGS

City of Tucson Fire and Police Headquarters
 265 South Church Avenue, Tucson, Arizona
 UST Facility ID 0-005176; LUST File No. 3208.01
 PCWW Permit No. 12916

Date	Discharge Totalizer	Water Filters			Carbon vessels			Air compressor		Water Parameters			Well Pumps			
		INF Filter (PSI)	EFF Filter (PSI)	Discharge Filter (PSI)	CV1 Top gauge (PSI)	CV2 Top gauge (PSI)	CV2 Lower gauge (PSI)	Tank (PSI)	Outlet (PSI)	HQUST-GW-EFF			523A Counter	523A Pressure (PSI)	524A Counter	524A Pressure (PSI)
										pH	Temp. (°F)	Conductivity (µS/cm)				
12/21/15	1,972,390	8	8	7	17	8	9	115	60	7.00	78.4	2.89	NT	65	NT	NT

Notes:

- INF = Influent
- EFF = Effluent
- CV1 = 1,000-pound liquid carbon vessel
- CV2 = 1,000-pound liquid carbon vessel
- PSI = Pounds per square inch
- Temp. = Temperature
- °F = Fahrenheit
- µS/cm = Micro-siemens per centimeter
- NT = Not Taken

APPENDIX D

**PIMA COUNTY REGIONAL WASTEWATER RECLAMATION
DEPARTMENT INDUSTRIAL WASTE WATER CONTROL
INSPECTION REPORT**



January 20, 2016

Mr. Richard Byrd
City of Tucson – Environmental Services
100 North Stone Avenue, 2nd Floor
Tucson, Arizona 85701

PERMIT NO. 12916

Dear Mr. Byrd:

RE: INSPECTION REPORT NO. 16-002C

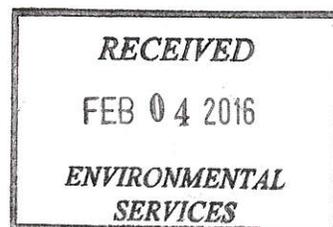
Pima County's Industrial Wastewater Control Section (IWC) inspected your facility on January 5, 2016. A copy of the report regarding this inspection is attached for your information and files.

If you have any questions regarding the inspection report, please contact the Industrial Wastewater Control staff at (520) 724-6200. Thank you for your assistance in completing this information.

Sincerely,

Douglas Kirkland
Supervisor – IWC

DK:dg
Enclosure



Industrial Wastewater Control

Jackson Jenkins, Director

2955 West Calle Agua Nueva Tucson, AZ 85745 • Phone: 520-724-6200 • Fax: 520-724-6211

**PIMA COUNTY REGIONAL WASTEWATER
RECLAMATION DEPARTMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
INSPECTION REPORT**

PERMIT NO.
12916

IWC INSPECTION NO.
16-002C

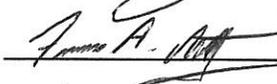
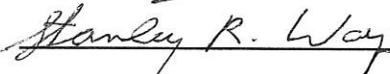
NAME AND MAILING ADDRESS
City of Tucson – Environmental Services
100 North Stone Avenue, 2nd Floor
Tucson, Arizona 85701

INSPECTION DATE AND TIME
January 05, 2016 @ 1000 Hrs.

SERVICE ADDRESS OF FACILITY
265 South Church Avenue
Tucson, Arizona 85701

NAME OF AUTHORIZED REPRESENTATIVE
Mr. Richard Byrd

NAME, TITLE AND PHONE NO. OF ON-SITE REPRESENTATIVE
Mr. John Manley, Technician, (480) 363-2915

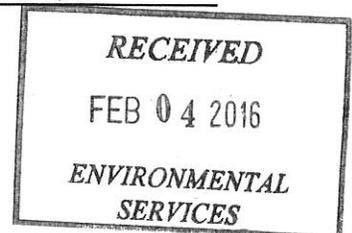
NAME AND SIGNATURE OF INSPECTOR	DATE
Robert Speir <u></u>	<u>1.14.16</u>
Francisco Martinez <u></u>	<u>1/14/16</u>
Stan Way <u></u>	<u>Jan 19, 2016</u>

NAME AND SIGNATURE OF REVIEWER	DATE
Doug Kirkland <u></u>	<u>1-19-16</u>

INSPECTION TYPE
Significant Industrial User, Compliance (C).

I. PURPOSE OF INSPECTION

This inspection was conducted to evaluate compliance with the requirements of Pima County Code, Title 13, Chapter 36, Industrial Wastewater Discharge Permit No. 12916, and Federal Regulations defined in 40 CFR Part 403.8.



II. FINDINGS OF INSPECTION

Type of Business

The City of Tucson has contracted ATC Group Services to operate a soil and groundwater remediation facility at this location. There are two methods employed to remediate the groundwater: groundwater extraction wells, and soil vapor extraction (SVE). Extraction wells are used to draw contaminated groundwater and run it through an oil and water separator. Vapor extraction air is run through granular activated carbon (GAC). An automated package plant is housed in a fenced enclosure. The facility operates 24-hours a day, seven days a week. The facility has been determined to be an Industrial User that meets the criteria for inclusion to the list of Significant Industrial Users as defined by CFR 403.3(v). Operations at the facility have been identified as having the North American Industry Classification (NAICS) Code of 562910.

Industrial Wastewater Generated

The byproducts of processing the air and groundwater produces industrial wastewater. This site has subsurface contamination of gasoline and diesel fuels from a former City of Tucson fueling station. After removal or destruction of the petroleum hydrocarbons from the adjacent remediation wells at the site, industrial wastewater is discharged to the Pima County POTW.

Pretreatment Equipment and Process

Two of the three extraction wells are involved in vapor extraction and utilize incineration. The other well, designated as 523A, utilizes a small air powered pump submerged in the well casing to lift water to the processing system.

The SVE process creates no wastewater directly. A vacuum is placed upon the two well columns, drawing in organic compounds with the air. During the winter months, condensates will form within the system. The vacuum is decreased during the winter to minimize this condensation. Condensates from this process go to the oil and water separator. The drawn in air is then passed through an oxidation vessel and vented to the atmosphere. Any remaining organics from this process are then incinerated on site.

Well water is pumped directly to the oil and water separator. Oil is collected in a 55-gallon drum, while the water with traces of organics is collected in the 300-gallon black poly tank. The black poly holding tank automatically transfers water for processing in 50-gallon increments, triggered via a float switch. The flow from the holding tank is filtered through two 50-micron socks, passed through two GAC vessels in series, and filtered again through another 50-micron sock before collections system discharge.

Sample Location

Samples shall be taken at the sampling valve, on the discharge side of the package treatment plant, immediately following the second filter sock.

Spill and Slug-load Control

On June 7, 2012, the Permittee submitted a comprehensive Spill Protection and Slug Discharge Control Plan to Pima County that contains the minimum program elements required by 40 CFR 403.8(f)(2)(vi).

III. SUMMARY OF FINDINGS

The onsite representative, Mr. Manley, was met at the plant by IWC Personnel. Mr. Manley stated that Cardno ERI was acquired by ATC Group Services recently based out of Tempe Arizona, and that they will be fulfilling the contract with the City of Tucson. A detailed tour of the facility showed that the entire compound is contained within a berm. All of the equipment was in good working order – there were no leaks observed or indicators of leaks or spills.



Sump with the discharge pipe leading to the black poly tank.

There was a sump located within the compound with some standing water in it. A trace of the plumbing and an inquiry to Mr. Manley showed that this sump was float switch activated, and that it followed to the black poly tank to treat any water collected. There would be some storm water intrusion because of this, but it would be limited to the footprint of the compound due to the berm.

Discrete samples were collected from the designated sample location. The reason for the discrete samples versus composite sample was due to the duration of the 105 gallon discharge, which lasted less than ten minutes. The typical automated discharge is 50 gallons.

IV. FOLLOW-UP REQUIRED

Determine the frequency in which the 55-gallon black oil drum fills and is emptied.