TETRA TECH

MEMO

To:	Nevada Division of Environmental Protection Nevada Environmental Response Trust
Cc:	Nevada Environmental Response Trust Stakeholders
From:	Frank Johns/Tt
Date:	November 26, 2014
Subject:	NERT – GWETS Operation Monthly Report – October 2014

Tetra Tech is providing this monthly report to provide a summary of GWETS operation during October 2014 and oversight tasks performed by Tetra Tech.

Summary of GWETS Operation

The groundwater extraction and treatment system (GWETS) operated normally in October, with the exception of GW-11. GW-11 is still being bypassed due to high suspended solids content, primarily insects and some algae, causing frequent plugging of the bag filters and increased the backwash frequency for the GAC. Envirogen Technologies, Inc. (ETI) has ordered automatic cleaning filters to replace the bag filters. The new filters are expected to be online with the pond taken out of bypass by early December.

The flow rate to the plant averaged approximately 930 gpm during the month. At the end of the month, the GW-11 volume was 42.8 MG, equal to 13.6 days of available storage in event of an emergency. The volume decreased approximately 0.5 MG from the end of September, likely due to evaporation. The influent perchlorate concentration from the equalization tank to the FBR plant averaged 113 mg/L for the month, with a maximum concentration of 120 mg/L.

There were no exceedances at the GWETS Outfall for perchlorate or any other constituent in excess of the NPDES permitted numerical discharge limits (Attachment A, prepared by ENVIRON).

Operational Metrics

The approved program to add instruments, controls, data acquisition systems, along with various other technical upgrades to improve the efficiency of data collection and reporting remains on-schedule for phased activation beginning in March 2015.

See attached Tables 1 and 2 for a summary of the current GWETS operational metrics that provide data for flow rates and perchlorate and chromium concentrations and mass removal. The attached tables and figure have been revised and consolidated at the request of NDEP and are presented as follows:

- Table 1 – Flow Rate and Perchlorate and Chromium Concentrations
- Table 2 – Perchlorate and Chromium Mass Flux
- Figure 1 – Historical Perchlorate Mass Flux

Operational Issues

In addition to plant repairs conducted by ETI in accordance with their NERT Perchlorate Treatment System Operations Manual, the following is a list of operational issues and major repairs and/or equipment replaced during this reporting period.

1. GW-11 continues to be bypassed due to the issue with insects and algae causing plugging of the bag filters ahead of the GAC units. ETI has ordered automatic cleaning filters to replace the bag filters and are scheduled for installation in late November with operation in early December.

2. Major maintenance being performed or completed in the month included:
    - New motor and pump installed at ART-3B.
    - ART-7B now online.
    - Repairing the ram head of the filter press at the GWTP.
    - Replacing sump pump at the GWTP.
    - Repaired raw water feed pump (P102B).
    - Installing new nozzles and laterals on FBR 5.
    - Unclogged line on discharge side of media return pump for FBR 7 and 8.
    - Bypassing steel airlines with hose feeding the pressure tank at the DAF system.
    - New mechanical seal ordered for effluent pump (P601) on old effluent pumping system.
    - New positioner ordered for filter reject tank on the sand filter system.
    - Replacement kits ordered for filter press pump (P902).
    - New pump heads ordered for DAF polymer system.
    - Recorders installed on compressed air system.
    - Allen-Bradley computer is still operating inconsistently. A new computer is on order.

3. Outstanding maintenance and repairs from the previous month have been addressed as outlined below:
    - Raw water feed pump (P102B) removed for maintenance in shop.
        i. P102B sent to shop in September, repaired and installed in October.
    - Media return pump for FBRs 7 and 8 taken out of service for belt replacement.
        i. Media return pump repaired and reinstalled.
    - Level controllers at the equalization tanks were dropping out.
        i. Level controllers are operating correctly.
    - Allen-Bradley computer for extraction wells and GWTP was down for a time with no visual indication of operation in control room. All wells and GWTP continued to operate with notification by auto-dialer.
        i. A new computer is on order.

GWETS Upgrades and Facility Projects

The following is a summary of initiatives in-progress during the reporting period at the direction of the Trust:

1. 2013 Optimization
   Construction for ART-7B was completed in early October. PC-150 is scheduled to be operational in early November. Another round of flow optimization for the IWF will be initiated once these AWF

wells are operational. Capture zone analyses for the IWF and AWF will be performed in November with a final report expected in January 2015.

2. AP-5 Closure
   Tetra Tech has continued development of a work plan for closure of the pond. The draft work plan is scheduled to be submitted to the NDEP by the end of November. Tetra Tech continues to coordinate with NDEP, ETI, and the Trust on this project. This will be a long-term project that will directly impact GWETS operations across multiple levels once implemented.

3. Enhanced Operational Metrics
   Tetra Tech started design for the enhanced operational metrics project in September. A preliminary design meeting was held with ETI on October 29.

Equipment Availability Tracking

ETI operators continue to update the equipment tracking form on a weekly basis at a minimum, or whenever there is a change in the status of key equipment. During regular site visits, Tetra Tech field personnel continue to verify the entries in the form, including both the operating status and the presence of the required shelf spares. The equipment tracking form submitted to Tetra Tech on October 30, 2014, is attached (Attachment B).

GWETS Security

ETI continues to staff the GWETS using a single shift and follows the security procedure in the SOP dated April 30, 2014. During weekly calls, ETI notifies Tetra Tech of any issues with GWETS security. There were no issues reported in October.

Tetra Tech Activities

Tetra Tech conducted weekly calls with ETI to review operation of the GWETS on October 2, 9, 16, and 23. A call was not held the week of October 17 since Tetra Tech and ETI met in person at the site. Becki Dano, CEM, of Tetra Tech, performed visits to the GWETS on October 7, 10, 17, and 31. She checked permit and sampling forms to ensure each was correct and up-to-date, checked equipment status, and viewed shelf spare inventory.

Summary

Upon review of available and relevant information, Tetra Tech concurs with the management of the GWETS at this time. No additional involvement from either the Trust or Tetra Tech is recommended at this time.

Tables

Operational Metrics

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics				
Location ID	**Average Flow Rate (gpm)**	**Perchlorate (mg/L)[2]**	**Chromium TR (mg/L)[2]**	**Chromium(VI) (mg/L)[2,8]**
SWF Total Extraction[5]	517[1]	11	0.02	Future Metric
AWF Total Extraction[5]	289[1]	163	0.44	Future Metric
IWF Total Extraction[6]	68[1]	1,002	7.20	Future Metric
GWTP Effluent[7]	58	978	0.30	ND
GW-11 Influent	NA[3]	NA[4]	NA[4]	Future Metric
GW-11 Effluent/ FBR Influent[7]	931	113	0.11	0.08

Notes:

TR = Total Recoverable; NA = Not Available; ND = not detectable above laboratory detection limit (Chromium (VI) = 0.25 ug/L)

1: Sum of daily average flow for individual wells

2: All concentrations reported are monthly flow weighted averages

3: GW-11 is currently offline. Flow is a calculated metric, but will be transitioned to flow meter measurement beginning in 2015

4: Perchlorate and chromium can be calculated, but will be transitioned to in-line samples beginning in 2015

5: Perchlorate sampled monthly, chromium TR sampled quarterly, values reported from TestAmerica

6: Perchlorate and chromium TR sampled quarterly, values reported from TestAmerica

7: Perchlorate, chromium TR and chromium (VI) sampled weekly, values reported from TestAmerica

8: Hexavalent chromium will be analyzed and reported monthly beginning January 2015

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics		
Location ID	**Perchlorate (lbs/month)[1]**	**Chromium TR (lbs/month)[1]**
SWF Total Extraction	2,161	3
AWF Total Extraction	17,621	48
IWF Total Extraction	25,520	183
GWTP Effluent	21,239	7
GW-11 Influent	NA[2]	NA[2]
GW-11 Effluent/FBR Influent	39,075	37

Notes:

TR = Total Recoverable; NA = Not Available

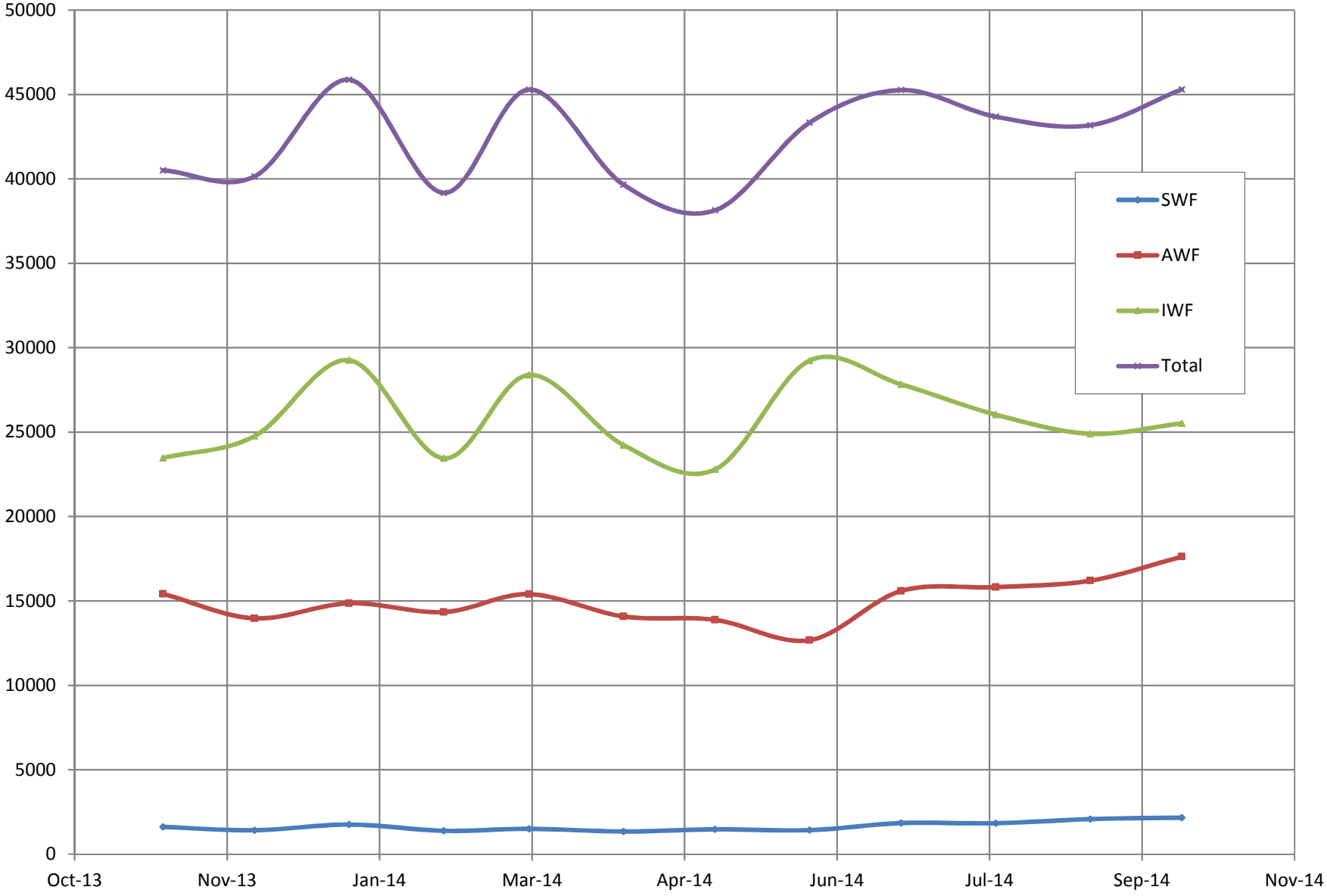
1: Total lbs extracted is calculated from flow weighted average concentration and average flow (see Table 1)

2: GW-11 is currently offline

Figures

Operational Metrics

Figure 1 - Historical Perchlorate Mass Flux



Note: Total perchlorate shown on this graph was calculated from the sum of perchlorate extracted from wells. It should be noted that due to the accuracy of existing flow meters, this total may not align with total perchlorate reported in FBR influent flow.

Attachment A

NPDES Tracking Sheet (Prepared by ENVIRON)

	Continuous		Daily samples, composited weekly		Weekly samples								Weekly samples, collected separately			Quarterly sample	
	Flow Rate		Perchlorate		pH	Hexavalent Chromium	Total Chromium	Total Suspended Solids (TSS)		Total Iron		Total Ammonia as N	Total Phosphorus as P	BOD_5 (inhibited)			Manganese	
	30-Day Avg. (MGD)	Daily Maximum (MGD)	30-Day Avg. (ug/L)	30-Day Avg. (lbs/day)	30-Day Avg. (S.U.)	Daily Max. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (mg/L)	30-Day Avg. (lbs/day)
	1.45	1.75	**18**	**0.22**	**6.5 to 9.0**	**0.01**	**0.1**	**135**	**1,634**	**10**	**121.03**	**40**	**20**	**25**	**40**	**254**	**5**	**60.52**
December 2013	1.30	1.34	1.3	0.014	6.98	0.00013	0.014	20	220	3.6	39	1.8	1.7	2.5	3.8	27		
January 2014	1.34	1.37	1.3	0.014	6.91	0.0013	0.036	28	320	4.2	47	5.3	3.3	4.2	5.2	47	0.57	6.5
February 2014	1.37	1.44	1.3	0.014	7.08	0.00013	0.020	19	220	2.9	33	10	3.2	5.2	9.9	58		
March 2014	1.38	1.48	1.3	0.014	6.98	0.00048	0.012	25	260	5.2	55	6	2.3	2.6	3.7	30		
April 2014	1.07	1.46	1.3	0.012	6.63	0.00029	0.028	17	170	3.8	37	2.2	1.9	4.3	6.3	44	0.15	1.6
May 2014	1.37	1.48	1.3	0.014	6.81	0.0013	0.012	19	220	3.3	38	8	3.1	3.1	3.4	35		
June 2014	1.31	1.37	1.3	0.014	6.69	0.00013	0.017	17	170	3.3	35	5	2.0	2.4	5.4	26		
July 2014	1.11	1.40	1.3	0.012	6.88	0.00013	0.020	32	290	6.7	61	2.2	3.2	4.3	5.4	40	0.24	2.0
August 2014	1.27	1.60	1.3	0.013	6.80	0.00013	0.034	20	210	3.9	41	2.8	2.1	3.2	5.7	33		
September 2014	1.16	1.32	1.3	0.012	6.73	0.00013	0.029	26	260	4.4	44	3	11	2.3	3.8	22		
October 2014 (month-to-date)	1.19	1.23	1.3	0.012	6.86	0.00013	0.026	15	150	2.9	29	11	6.2	3.4	4.5	34		

Daily Grab Sample Dates	Composite Sample Date		ug/L	lbs/day	Sample Date	S.U.	mg/L	mg/L	mg/L	lbs/day	mg/L	lbs/day		mg/L	lbs/day	mg/L	lbs/day	Sample Date	mg/L	lbs/day	mg/L	lbs/day
12/1 - 12/7	12/7/2013	ND (<2.5)	1.3	0.014	12/2/2013	7.11	ND (<0.00025)	0.0031	39	430	4.2	46	ND (<0.10)	0.05	0.5	0.053	0.58	12/5/2013	1.4	15		
12/8 - 12/14	12/14/2013	ND (<2.5)	1.3	0.013	12/9/2013	6.65	ND (<0.00025)	0.014	15	160	3.7	40	ND (<0.10)	0.05	0.5	0.089	0.95	12/11/2013	2.1	22		
12/15 - 12/21	12/21/2013	ND (<2.5)	1.3	0.014	12/16/2013	7.08	ND (<0.00025)	0.014	12	130	3.2	35	ND (<0.10)	0.05	0.5	0.15	1.6	12/18/2013	3.1	34		
12/22 - 12/28	12/28/2013	ND (<2.5)	1.3	0.014	12/23/2013	7.22	ND (<0.00025)	0.010	19	210	3.7	40	--	0.46	5.0	0.28	3.1	12/23/2013	3.8	41		
12/29 - 1/4	1/4/2014	ND (<2.5)	1.3	0.014	12/30/2013	6.85	ND (<0.00025)	0.0075	14	150	3.3	36	--	0.23	2.5	0.21	2.3	12/30/2013	1.9	21		
1/5 - 1/11	1/11/2014	ND (<2.5)	1.3	0.014	1/6/2014	6.91	ND (<0.00025)	0.015	21	230	3.7	41	--	0.17	1.9	0.26	2.9	1/8/2014	2.3	26		
1/12 - 1/18	1/18/2014	ND (<2.5)	1.3	0.014	1/13/2014	7.31	ND (<0.00025)	0.0082	16	180	3.5	40	--	0.25	2.8	0.21	2.4	1/15/2014	4.5	51	0.57	6.5
1/19 - 1/25	1/25/2014	ND (<2.5)	1.3	0.014	1/20/2014	6.72	0.0013	0.036	60	680	5.8	65	--	0.97	11	0.42	4.7	1/22/2014	4.6	52		
1/26 - 2/1	2/1/2014	ND (<2.5)	1.3	0.014	1/27/2014	6.69	ND (<0.00025)	0.0098	15	170	3.8	43	--	0.48	5.4	0.28	3.1	1/29/2014	5.2	58		
2/2 - 2/8	2/8/2014	ND (<2.5)	1.3	0.014	2/3/2014	6.91	ND (<0.00025)	0.020	23	260	4.0	45	--	0.33	3.7	0.13	1.5	2/5/2014	4.6	52		
2/9 - 2/15	2/15/2014	ND (<2.5)	1.3	0.014	2/10/2014	6.98	ND (<0.00025)	0.0047	22	250	3.0	34	--	0.94	11	0.33	3.7	2/12/2014	2.6	29		
2/16 - 2/22	2/22/2014	ND (<2.5)	1.3	0.015	2/17/2014	7.25	ND (<0.00025)	0.0052	22	260	4.2	49	--	1.5	17	0.27	3.1	2/19/2014	9.9	110		
2/23 - 3/1	3/1/2014	ND (<2.5)	1.3	0.015	2/24/2014	7.18	ND (<0.00025)	0.0043	10	120	0.30	3.5	--	0.58	6.8	0.39	4.6	2/26/2014	3.7	43		
3/2 - 3/8	3/8/2014	ND (<2.5)	1.3	0.013	3/3/2014	6.91	ND (<0.00025)	0.0064	16	170	3.8	41	--	0.43	4.6	0.20	2.1	3/5/2014	2.4	26		
3/9 - 3/15	3/15/2014	ND (<2.5)	1.3	0.015	3/10/2014	7.36	ND (<0.00025)	0.0051	54	630	9.8	114	--	1.6	19	0.28	3.3	3/12/2014	3.4	40		
3/16 - 3/22	3/22/2014	ND (<2.5)	1.3	0.015	3/17/2014	6.87	ND (<0.00025)	0.0023	13	150	3.0	36	--	0.19	2.3	0.18	2.1	3/19/2014	1.0	12		
3/23 - 3/29	3/29/2014	ND (<2.5)	1.3	0.015	3/24/2014	6.72	0.00048	0.0059	12	140	3.6	42	--	0.33	3.9	0.18	2.1	3/26/2014	3.7	44		
3/30 - 4/5	4/5/2014	ND (<2.5)	1.3	0.0090	3/31/2014	7.04	ND (<0.00025)	0.012	30	220	5.9	42	ND (<0.10)	0.05	0.36	0.26	1.9	4/4/2014[1]	NS	NS		
4/6 - 4/12	4/12/2014	ND (<2.5)	1.3	0.0056	4/11/2014	6.61	0.00029	0.0096	15	70	3.4	15	ND (<0.10)	0.05	0.23	0.16	0.7	4/11/2014	3.4	15		
4/13 - 4/19	4/19/2014	ND (<2.5)	1.3	0.015	4/14/2014	6.66	ND (<0.00025)	0.028	20	230	4.4	52	ND (<0.10)	0.05	0.59	0.22	2.6	4/16/2014	6.3	74	0.15	1.6
4/20 - 4/26	4/26/2014	ND (<2.5)	1.3	0.014	4/21/2014	6.62	ND (<0.00025)	0.012	15	170	3.5	40	--	0.51	5.9	0.20	2.3	4/23/2014	2.5	29		
4/27 - 5/3	5/3/2014	ND (<2.5)	1.3	0.014	4/28/2014	6.62	ND (<0.00025)	0.012	17	200	3.7	43	--	0.18	2.1	0.16	1.9	4/30/2014	4.9	57		
5/4 - 5/10	5/10/2014	ND (<2.5)	1.3	0.014	5/5/2014	6.77	ND (<0.00025)	0.0074	13	150	2.7	31	--	0.49	5.6	0.14	1.6	5/7/2014	2.8	32		
5/11 - 5/17	5/17/2014	ND (<2.5)	1.3	0.014	5/12/2014	6.62	0.0013	0.0083	26	290	3.9	44	--	1.1	12	0.39	4.4	5/14/2014	3.0	34		
5/18 - 5/24	5/24/2014	ND (<2.5)	1.3	0.014	5/19/2014	7.06	ND (<0.00025)	0.012	15	170	3.3	37	--	0.99	11	0.31	3.5	5/21/2014	3.4	38		
5/25 - 5/31	5/31/2014	ND (<2.5)	1.3	0.014	5/27/2014	6.77	ND (<0.00025)	0.012	23	270	3.4	39	--	0.12	1.4	0.25	2.9	5/28/2014[2]	NS	NS		
6/1 - 6/7	6/7/2014	ND (<2.5)	1.3	0.014	6/2/2014	6.85	ND (<0.00025)	0.010	18	200	3.1	34	--	1.3	14	0.52	5.6	6/4/2014	2.3	25		
6/8 - 6/14	6/14/2014	ND (<2.5)	1.3	0.014	6/9/2014	6.69	ND (<0.00025)	0.0091	13	140	3.0	33	--	0.11	1.2	0.040	0.43	6/11/2014	1.2	13		
6/15 - 6/21	6/21/2014	ND (<2.5)	1.3	0.014	6/16/2014	6.69	ND (<0.00025)	0.016	13	140	3.7	41	--	0.57	6.3	0.16	1.8	6/18/2014	0.86	10		
6/22 - 6/28	6/28/2014	ND (<2.5)	1.3	0.013	6/23/2014	6.71	ND (<0.00025)	0.0062	10	110	2.0	21	--	0.11	1.2	0.070	0.75	6/25/2014	5.4	58		
6/29 - 7/5[3]	7/5/2014	ND (<2.5)	1.3	0.012	6/30/2014[3]	6.50	ND (<0.00025)	0.017	29	280	4.8	47	ND (<0.10)	0.05	0.49	0.16	1.6	7/2/2014[3]	4.5	44		
7/6 - 7/12[3]	7/12/2014	ND (<2.5)	1.3	0.012	7/8/2014[3]	6.77	ND (<0.00025)	0.0089	20	200	3.2	31	--	0.41	4.0	0.23	2.3	7/9/2014[3]	3.4	33	0.24	2.0
7/13 - 7/19	7/19/2014	ND (<2.5)	1.3	0.010	7/15/2014	6.85	ND (<0.00025)	0.020	34	280	8.3	69	ND (<0.10)	0.05	0.41	0.35	2.9	7/16/2014	4.5	37		
7/20 - 7/26	7/26/2014	ND (<2.5)	1.3	0.012	7/21/2014	7.25	ND (<0.00025)	0.020	50	470	9.2	87	--	0.22	2.1	0.56	5.3	7/23/2014	3.7	35		
7/27 - 8/2	8/2/2014	ND (<2.5)	1.3	0.012	7/28/2014	6.65	ND (<0.00025)	0.014	23	220	6.1	57	--	0.25	2.3	0.25	2.3	7/30/2014	5.4	51		
8/3 - 8/9	8/9/2014	ND (<2.5)	1.3	0.013	8/4/2014	6.84	ND (<0.00025)	0.034	21	210	4.5	46	--	0.23	2.3	0.16	1.6	8/6/2014	5.7	58		
8/10 - 8/16	8/16/2014	ND (<2.5)	1.3	0.014	8/11/2014	6.65	ND (<0.00025)	0.012	25	270	4.4	48	ND (<0.10)	0.05	0.54	0.18	2.0	8/13/2014	1.8	20		
8/17 - 8/23	8/23/2014	ND (<2.5)	1.3	0.013	8/18/2014	6.87	ND (<0.00025)	0.0064	14	150	2.9	31	--	0.26	2.8	0.22	2.4	8/20/2014	2.8	30		
8/24 - 8/30	8/30/2014	ND (<2.5)	1.3	0.014	8/25/2014	6.83	ND (<0.00025)	0.0059	20	220	3.7	40	--	0.49	5.4	0.21	2.3	8/27/2014	2.3	25		
8/31 - 9/6	9/6/2014	ND (<2.5)	1.3	0.014	9/2/2014	6.71	ND (<0.00025)	0.017	31	340	5.4	59	--	0.11	1.2	0.096	1.0	9/3/2014	1.8	20		
9/7 - 9/13	9/13/2014	ND (<2.5)	1.3	0.010	9/8/2014	6.69	ND (<0.00025)	0.017	12	100	3.4	28	--	0.21	1.7	0.065	0.53	9/9/2014	1.4	11		
9/14 - 9/20	9/20/2014	ND (<2.5)	1.3	0.012	9/15/2014	6.84	ND (<0.00025)	0.021	26	260	4.6	45	--	0.12	1.2	0.022	0.22	9/17/2014	3.8	37		
9/21 - 9/27	9/27/2014	ND (<2.5)	1.3	0.012	9/22/2014	6.68	ND (<0.00025)	0.0065	24	240	4.6	46	ND (<0.10)	0.05	0.50	3.7	37	9/24/2014	2.1	21		
9/28 - 10/4	10/4/2014	ND (<2.5)	1.3	0.013	9/29/2014	6.73	ND (<0.00025)	0.029	36	360	4.1	41	--	1.2	12	1.6	16	10/1/2014	2.7	27		
10/5 - 10/11	10/11/2014	ND (<2.5)	1.3	0.012	10/6/2014	6.89	ND (<0.00025)	0.025	14	140	3.1	31	--	1.2	12	0.92	9.1	10/8/2014	4.5	44		
10/12 - 10/18	10/18/2014	ND (<2.5)	1.3	0.012	10/13/2014	6.78	ND (<0.00025)	0.026	13	130	3.0	29	--	0.57	5.5	0.74	7.2	10/15/2014	2.4	23	NA	NA
10/19 - 10/25	10/25/2014	NA	NA	NA	10/20/2014	6.90	ND (<0.00025)	0.010	18	180	2.7	27	--	1.7	17	0.22	2.2	10/22/2014	4.0	40		
					10/27/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10/29/2014	NA	NA		

Note: All analytical responsibilities are performed by TestAmerica Laboratories, Inc. (TestAmerica) in Irvine, California, unless otherwise indicated.

[1] During this time period, treated effluent was diverted to GW-11 rather than discharged to the Las Vegas Wash. As a result, the weekly BOD_5 (inhibited) sample for the week of March 31, 2014 was not collected.

[2] The effluent BOD_5 (inhibited) sample for the week of May 26, 2014 was invalidated due to a power outage at the laboratory.

[3] On several days during this period, the effluent flow meter was not working properly. Mass loading values (lbs/day) were calculated using influent flow values in place of effluent flow values.

NA = Not Available To Date
NS = No Sample
ND = Not Detected above laboratory reporting limit; concentration in adjacent cell to right is one-half the reporting limit (per Permit condition)
-- = Analyte detected; see column adjacent to right
Last Updated: October 31, 2014

Attachment B

Equipment Tracking Form

Sub-System	P&ID	Description	Status[1]	Checked	Notes
		Main Plant Equipment			
1		**Seep Wells and Lift Station 1**			
1.01		*Seep Well Field, 9 wells*	Running	X	All 9 wells in operation
1.02		*Lift Station 1 Lift Pump A*	Running	X	
1.03		*Lift Station 1 Lift Pump B*	Standby	X	
1.04		*Area in and around Lift Station 1*	Running	X	
2		**Athens Road Wells and Lift Station** 3			
2.01		*Athens Road Well Field, 9 wells*	Running	X	All 9 wells in operation/ New motor and pump installed ART-3b
2.02		*Lift Station 3 Lift Pump A*	Standby	X	
2.03		*Lift Station 3 Lift Pump B*	Running	X	
2.04		*Area in and around Lift Station 3*	Running	X	Well Art-7B now online/ testing flow with ART-7online with 7B to
3		**Lift Station *2* and Transmission Piplines**			
3.01		*Influent Pipline*	In operation	X	
3.02		*Effluent Pipeline*	Running	X	
3.03		*Lift Station 2 Lift Pump A*	Running	X	
3.04		*Lift Station 2 Lift Pump B*	Standby	X	
3.05		*Area in and around Lift Station 2*	Running	X	
4		**Interceptor Wells and Cr Treatment Plant**			
4.01		*IWF Well Field, 30 wells*	Running	X	27 wells online
4.02		*Ferrous Sulfate Feed System*	Running	X	
4.03		*Polymer Feed System*	Running	X	
4.04		*Clarifier*	In operation	X	
4.05		*Filter Press*	Running	X	Maintenance needed for the ram head. In process of
4.06		*GWTP Effluent Tank*	In operation	X	
4.07		*Interceptor Booster Pump A*	Standby	X	
4.08		*Interceptor Booster Pump B*	Running	X	
4.09		*Area In And Around GWTP*	Running	X	In the process of replacing sump with new pump.
5		**Equalization Area and GW-11 Pond**			
5.01	PID10A	*Pond GW-11*	In operation	X	
5.02	PID10A	*Pond Water Pump - P101A*	Off	X	
5.03	PID10A	*Pond Water Pump - P101B*	Off	X	
5.04	PID10A	*Equalization Tanks*	In operation	X	
5.05	PID10A	*Raw Water Feed Pump - P102A*	Running	X	
5.06	PID10A	*Raw Water Feed Pump - P102B*	Standby	X	Repaired pump installed and online.
5.07	PID10B	*Carbon Absorber - LGAC 201A*	Running	X	

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5.08	PID10B	*Carbon Absorber - LGAC 201B*	Running	X	
5.09	PID10B	*Carbon Absorber - LGAC 201C*	Standby	X	

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6		**First Stage FBRs A, 1** *& 2*			
6.01	PID14	*FBR A*	Running	X	
6.02	PID14	*Separator Tank - 1401*	Running	X	
6.03	PID14	*Media Return Pump - P 1401*	Running	X	
6.04	PID14	*P1401A*	Standby	X	
6.05	PID01A	*P1401B*	Running	X	
6.06	PID01A	*FBR 1*	Running	X	
6.07	PID02A	*FBR 2*	Running	X	
6.08	PID01A	*First Stage Separator Tank - T2011*	Running	X	
6.09	PID01A	*Media Return Pump - P2011*	Running	X	
6.10	PID01A	*First Stage FBR Pump - P1011*	Standby	X	
6.11	PID01A	*First Stage FBR Pump - P1012*	Running	X	
6.12	PID01A	*First Stage FRB Pump - P101A*	Running	X	
6.13	PID07A	*FBR A pH Feed Pump - P71A*	Standby	X	
6.14	PID07A	*FBR 1 pH Feed Pump - P711*	Standby	X	
6.15	PID07A	*FBR 2 pH Feed Pump - P712*	Standby	X	
6.16	PID07A	*FBR A Nutrient (Urea) Feed Pump - P72A*	Off	X	
6.17	PID07A	*FBR 1 Nutrient (Urea) Feed Pump - P721*	Off	X	
6.18	PID07A	*FBR 2 Nutrient (Urea) Feed Pump - P722*	Off	X	
6.19	PID15	*FBR A Nutrient (Phos Acid) Feed Pump - P1520A*	Running	X	
6.20	PID15	*FBR 1 Nutrient (Phos Acid) Feed Pump - P1521*	Running	X	
6.21	PID15	*FBR 2 Nutrient (Phos Acid) Feed Pump - P1522*	Running	X	
6.22	PID07B	*FBR A Electron Donor Assembly Pump - P73A*	Running	X	
6.23	PID07B	*FBR 1 Electron Donor Assembly Pump - P731*	Running	X	
6.24	PID07B	*FBR 2 Electron Donor Assembly Pump - P732*	Running	X	
7		**First Stage FBRs 3** *& 4*			
7.01	PID01B	*FBR 3*	Off	X	
7.02	PID01B	*FBR 4*	Off	X	
7.03	PID02B	*First Stage Separator Tank - T2012*	Off	X	
7.04	PID01B	*Media Return Pump - P2012*	Off	X	
7.05	PID01B	*First Stage FBR Pump - P1013*	Off	X	
7.06	PID01B	*First Stage FRB Pump - P1014*	Off	X	
7.07	PID01B	*First Stage FBR Pump - P102A*	Off	X	
7.08	PID07A	*FBR 3 pH Feed Pump - P713*	Off	X	
7.09	PID07A	*FBR 4 pH Feed Pump - P714*	Off	X	
7.10	PID07A	*FBR 3 Nutrient (Urea) Feed Pump - P723*	Off	X	
7.11	PID07A	*FBR 4 Nutrient (Urea) Feed Pump - P 724*	Off	X	
7.12	PID15	*FBR 3 Nutrient (Phos Acid) Feed Pump - P1523*	Off	X	

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7.13	PID15	*FBR 4 Nutrient (Phos Acid) Feed Pump - P1524*	Off	X	
7.14	PID07B	*FBR 3 Electron Donor Assembly Pump - P733*	Off	X	
7.15	PID07B	*FBR 4 Electron Donor Assembly Pump - P734*	Off	X	

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7		**Second Stage FBRs 5** & 6			
8.01	PID03A	*FBR 5*	Off	X	Installing new nozzles and laterals. No damage found on internal
8.02	PID03A	*FBR 6*	Off	X	
8.03	PID03C	*Second Stage Separator Tank - T3011*	Off	X	
8.04	PID03A	*Media Return Pump - P3011*	Off	X	
8.05	PID03A	*Second Stage FBR Pump - P3015*	Off	X	
8.06	PID03A	*Second Stage FBR Pump - P3016*	Off	X	
8.07	PID03A	*Second Stage FBR Pump - P301A*	Off	X	
8.08	PID07A	*FBR 5 pH Feed Pump - P715*	Off	X	
8.09	PID07A	*FBR 6 pH Feed Pump - P716*	Off	X	
8.1	PID07A	*FBR 5 Nutrient (Urea) Feed Pump - P725*	Off	X	
8.11	PID07A	*FBR 6 Nutrient (Urea) Feed Pump - P726*	Off	X	
8.12	PID07B	*FBR 5 Electron Donor Assembly Pump - P735*	Off	X	
8.13	PID07B	*FBR 6 Electron Donor Assembly Pump - P736*	Off	X	
9		**Second Stage FBRs 7** & 8			
9.01	PID03B	*FBR 7*	Running	X	
9.02	PID03B	*FBR 8*	Running	X	
9.03	PID03D	*Second Stage Separator Tank - T3012*	Running	X	
9.04	PID03B	*Media Return Pump - P3012*	Running	X	Line unclogged on discharge side of pump.
9.05	PID03B	*Second Stage FBR Pump - P3017*	Standby	X	
9.06	PID03B	*Second Stage FBR Pump - P3018*	Running	X	
9.07	PID03B	*Second Stage FBR Pump - P302A*	Running	X	
9.08	PID07A	*FBR 7 pH Feed Pump - P717*	Standby	X	
9.09	PID07A	*FBR 8 pH Feed Pump - P718*	Standby	X	
9.10	PID07A	*FBR 7 Nutrient (Urea) Feed Pump - P727*	Off	X	
9.11	PID07A	*FBR 8 Nutrient (Urea) Feed Pump - P728*	Off	X	
9.12	PID07B	*FBR 7 Electron Donor Assembly Pump - P737*	Running	X	
9.13	PID07B	*FBR 8 Electron Donor Assembly Pump - P738*	Running	X	

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10		**Aeration and DAF System**			
10.01	PID04	*Aeration Tank*	In operation	X	
10.02	PID04	*Aeration Blower - B401*	Running	X	
10.03	PID04	*Biofilter*	In operation	X	
10.04	PID04	*Nutrient Solution*	Running	X	
10.05	PID04	*Biofilter Sump*	Running	X	
10.06	PID04	*Nutrient Pump - P401*	Running	X	
10.07	PID04	*Biofilter Sump Pump - P402A*	Standby	X	
10.08	PID04	*Biofilter Sump Pump - P402B*	Off	X	Only one pump in place
10.09	PID04	*Biofilter Blower*	Running	X	
10.10	PID05	*DAF Pressure Tanks*	In operation	X	
10.11	PID05	*DAF Vessel - D501*	Running	X	
10.12	PID05	*DAF Pressure Pump - P501*	Running	X	
10.13	PID05	*DAF Float Pump - P502*	Running	X	
10.14	PID05	*DAF Vessel - D551*	Running	X	
10.15	PID05	*DAF Pressure Pump - P551*	Running	X	Bypassing steel arilines with hose feeding the pressure tank.
10.16	PID05	*DAF Float Pump - P552*	Running	X	
10.17	PID05	*Screw Conveyer Drive*	Standby	X	
10.18	PID05	*Skimmer Drive*	Running	X	
11		**Pumping System (Old Effluent)**			
11.01	PID06	*Effluent Tank 601*	In operation	X	
11.02	PID06	*Effluent Pump - P601*	Maintenance	X	New mechanical seal to arrive week of 10/31/14
11.03	PID06	*Effluent Pump - P602*	Running	X	
12		**Sand Filter System**			
12.01	PID17	*Sand Filter*	Running	X	
12.02	PID17	*Filter Reject Tank*	In operation	X	New positioner being ordered
12.03	PID17	*Filter Reject Pump - P1701A*	Running	X	
12.04	PID17	*Filter Reject Pump - P1701B*	Standby	X	
13		**Effluent Tank and Pumping**			
13.01	PID10C	*UV Effluent Tank*	Running	X	
13.02	PID10C	*Effluent Booster Pump - P1302A*	Running	X	
13.03	PID10C	*Effluent Booster Pump - P1302B*	Standby	X	

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14		**Solids Collection and Pressing System**			
14.01	PID16	*Sludge Storage Tank*	In operation	X	
14.02	PID16	*Solids Storage Effluent Pump - P1601*	Running	X	
14.03	PID16	*Solids Cond. Tank*	In operation	X	Large debris found in tank inhibiting proper flow through pump.
14.04	PID09	*Sludge Mixer*	Running	X	
14.05	PID09	*Filter Press Pump - P901*	Running	X	
14.06	PID09	*Filter Press Pump - P902*	Standby	X	Replacement kits on order
14.07	PID09	*West Press*	Off	X	
14.08	PID09	*East Press*	Running	X	
14.09	PID09	*Filtrate Tank*	In operation	X	
14.10	PID09	*Filtrate Tank Effluent (recycle) Pump - P903*	Running	X	
		Chemical Systems			
15		**Electron Donor System**			
15.01	PID07B	*Electron Donor Tank*	In operation	X	
15.02	PID07B	*Booster Pump P739A*	Running	X	
15.03	PID07B	*Booster Pump P739B*	Standby	X	
17	PID07C	**Micro Nutrient System**	In operation	X	
18	PID07C	**Hydrogen Peroxide System**	In operation	X	
19	PID07C	**De-Foam System**	In operation	X	
20	PID15	**Nutrient (Phosphoric Acid) System** (Tank only - pumps included in FBRs)	In operation	X	
21	PID07A	**Nutrient (Urea) System** (Tank only - pumps included in FBRs)	In operation	X	
22	PID07A	**pH System** (Tank and effluent pH feed pump only - other pumps included in FBRs)	In operation	X	
23	PID07C	**Ferric Chloride System**	In operation	X	
24	PID07B	**Polymer Systems - DAF**	In operation	X	New pump heads on order
25	PID09	**Polymer System - Solids Dewatering** (2 tanks, 2 centrifugal pumps, mixer, volumetric feeder)	In operation	X	

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		Utility Systems			
26		**Compressed Air System**			
26.01	PID08	*West Compressor*	Running	X	
26.02	PID08	*East Compressor*	Running	X	
26.03	PID08	*O2 Compressor*	Running	X	
26.04	PID08	*Compressed Air Receiver Tank*	In operation	X	
26.05	PID08	*Air Dryer*	Running	X	
26.06	PID08	*Oil Removal Filter*	In operation	X	
26.07	PID08	*Particulate Filter*	In operation	X	
27	PID16	**Oxygen System**	In operation	X	
28		**GWETS Plant Controls/ Siemens Controls**	In operation	X	
29		**Well Control System/ Allen Bradley Controls**	In operation	X	
30		**MCC FBR Pad**	In operation	X	Matrix will be onsite on Nov. 10th to repair panel view
31		**MCC in D-1**	In operation	X	Hampton Tedder installed recorders in attempt to identify
32		**MCC in EQ area**	In operation	X	
		Miscellanous Systems			
33		**Operations Office/Network**	In operation	X	
34		**Laboratory Analyzers**	In operation	X	
35		**Security Systems**	In operation	X	
		Shelf Spares			
		Media Return Pump Rebuid Kit	In stock	X	
		pH Feed Pump	In stock	X	
		Nutrient Feed Pump	In stock	X	
		Electron Donor Feed Pump	In stock	X	
		Phosphoric Acid Feed Pump	In stock	X	
		Interceptor Well Pumps (4 each)	In stock	X	
		Seep Well Pump (1 each, same as Athens so total of 2)	In stock	X	
		Athens Road Well Pump (1 each, same as Seep so total of 2)	In stock	X	More boreline fittings and 3hp motor on order.

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