To:	Nevada Division of Environmental Protection Nevada Environmental Response Trust
Cc:	Nevada Environmental Response Trust Stakeholders
From:	Ryan Sullivan, Vice President Service and O&M
Date:	December 21, 2017
Subject:	NERT – GWETS Operation Monthly Report – November 2017

At the request of the Nevada Environmental Response Trust (Trust), Envirogen Technologies, Inc. (ETI) is providing this summary of the groundwater extraction and treatment system (GWETS) operation and performance during November 2017.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in November 2017. Flow from PC-119, PC-120, PC-121, and PC-133 was routed to the IX system, bypassing all flow meters associated with the FBR plant. The flow rate to the IX system averaged approximately 183 gallons per minute (gpm) during November 2017. The flow rate to the FBR plant averaged approximately 1,042 gpm. At the end of the month, the GW-11 Pond volume was at 34.4 million gallons (MG), which would allow 19.5 days of available additional storage in the event of an emergency FBR plant shutdown with continued well field pumping. The water volume stored in the GW-11 Pond remained approximately the same from the end of October 2017. Figure 1 in this report depicts the actual GW-11 pond volumes and additional storage available.

The influent perchlorate concentration to the IX system averaged 0.46 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 279 mg/L for the month, with a maximum concentration of 310 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of October 2017 averaged 180 mg/l, with a maximum concentration of 270 mg/l. Fluctuations in the influent perchlorate concentrations are due to the changes in the AP-5 treatment feed rate and not a result of groundwater changes.

Enhanced Operational Metrics

Tables 1 and 2 provide a summary of the current GWETS operational metrics data for flow rates, perchlorate and chromium concentrations, and mass removal. These tables also include data associated with the AP-5 decant liquids. Figure 2 graphically presents historical perchlorate and chromium mass flux information. Attachment A provides a summary of the NPDES permit analytes with numerical discharge limits.

Operational Issues

All routine plant repairs conducted by ETI were performed in accordance with the 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

There were no operational issues with GW-11 in the month of November.

2. Biological Plant

Treatment of AP-5 water through the FBR Biological plant continued in the month of November starting at a flow rate of 6.5 gpm. Flow rate increased incrementally through November with a flow rate on Nov. 30th of 7.5 gpm.

There was one Influent diversion into GW-11 for the month of November, two events that prevented the operation of a portion of the extraction wells, two Effluent diversions into GW-11, and one event that caused the FBR plant to be taken out of feeding mode while keeping the extraction wells operational. Below is a description of the events that occurred:

Diversion Events

- Influent Diversion to GW-11 on Nov. 16th at 9:15am to 2:40pm due to maintenance activities on the plant compressed air system. Effluent flow was returned to the outfall at 3:55pm.
- Effluent Diversion to GW-11 on Nov. 13th at 11:23am to 12:08pm due to complications in retrieving the line "pig". Approximately 49,788 gallons diverted.
- Effluent Diversion to GW-11 on Nov. 30th at 10:45am to 1:00pm due to maintenance on the Effluent line combo valves. Approximately 158,920 gallons diverted.

Unplanned Event

- The extraction wells within eastern leg of the IWF were prevented from operating on Nov. 10th at 1:57pm to 2:15pm due to maintenance on the electrical contactor for well I-O.
- The FBR plant was placed into Recycle mode due to a malfunctioning level control valve on the P-601 effluent pump on Nov. 21st from 6:35am to 7:01am. The valve was repaired and the plant returned to Feeding mode. A replacement valve actuator and positioner have been ordered.
- The IWF extraction wells were prevented from operating on Nov. 27th at 2:31am to 2:37am and 4:00am to 4:08am due to high TK-5 influent tank levels at the GWTP. The root cause of the high level was due to an obstruction between the Degassifier tank and the Clarifier tank causing the Degassifier to overflow into the sump. This started a feedback loop that lead to the high level alarm. The obstruction has been removed and flow returned to normal.

3. Spills

There were no reportable spills during the reporting period.

4. Maintenance

- Major maintenance performed by ETI in the month included:

I. Replaced the seal water lines on the Lift Station 2 turbine pumps with Stainless Steel tubing.
II. An airlift at the Sandfilter was taken offline to remove debris from the reject line and to rebuild and install a new airlift.
III. New blowdown valves were installed on the filter presses in the D-1 Building.
IV. A new hose was installed on the discharge of the GWTP pump.
V. A temporary A/C was installed on the MCC at Lift Station 2 until the original unit was repaired.
VI. New airlines near the DAF and the 601 tank were installed.
VII. Replaced the o-ring on the discharge of the swing check valve of P-102B.
VIII. Concrete was poured in the E-hut to eliminate the trip hazards.
IX. Insulation was installed on the FBR slam valves to prevent freezing of the actuators.
X. Replaced the Phosphoric acid pump for FBR 2 with the shelf spare.

- Preventative Maintenance completed or being performed by ETI in the month included:

I. Inspected the turbine pumps for any wear on the units.
II. Replaced the packing on the turbine pumps at LS1.
III. All sump pumps were inspected and the pits were cleaned.
IV. All ORP and pH probes were inspected, standardized, and calibrated.
V. An inspection of the combo valves on the effluent pipeline was conducted.
VI. While the Sandfilter was offline, an inspection of the unit was conducted and minor repairs were made.
VII. The west press was pressure washed and put back online.

GWETS Upgrades and Facility Projects

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

1. **Ammonia Pretreatment** - The Trust is currently evaluating options to reduce ammonia concentrations in the AP decant.

Equipment Availability Tracking

ETI operators continue to update the equipment tracking form on a weekly basis or whenever there is a change in the status of key equipment. During regular site visits, Tetra Tech field personnel verify the entries on the form, including both the operating status and confirmation of the inventory of required shelf spares. The equipment tracking form is included as Attachment B.

GWETS Staffing

ETI continues with 24-hour staffing of the GWETS at the direction of the Trust and continues to follow the security procedures in the Standard Operating Procedures (SOP).

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)[5] [6]**	**Chromium (TR) (mg/L)[5] [6]**	**Chromium(VI) (mg/L)[5] [6]**
SWF Total Extraction[2]	745[1]	9.8	ND	0.00060
AWF Total Extraction[2]	461[1]	93	0.17	0.17
IWF Total Extraction[2]	61[1]	764	8.3	7.7
AP Area Total Extraction[3]	12[1]	822	NA	0.030
GWTP Effluent[4]	62	728	0.22	ND
GW-11 Influent[2]	7.7	52	0.077	0.039
FBR Influent[4] [7]	1,042	279	0.085	0.014
T-205 Effluent (AP-5 Wash Water)[7] [8]	7.0	31,077	NA	NA

Notes:

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

1: Sum of daily average flow for individual wells.

2: Perchlorate and chromium TR sampled monthly, values reported from TestAmerica.

3: Perchlorate, chromium TR and chromium (VI) sampled twice weekly, values reported from TestAmerica.

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

5: All concentrations reported are monthly flow weighted averages.

6: ND analytical values are treated as zero values in the flow weighted average calculations.

7: AP-5 Wash Water perchlorate data is also included in the GW-11 Effluent/ FBR Influent totals.

8: Flow weighted average concentration based on mass flow meter readings.

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]**	**Chromium (VI) (lbs/month)[1]**
SWF Total Extraction	2,635	ND	0.16
AWF Total Extraction	15,529	28	29
IWF Total Extraction	16,832	183	170
AP Area Total Extraction	3,425	NA	0.12
GWTP Effluent	16,385	4.9	ND
GW-11 Influent	145	0.21	0.11
FBR Influent[2]	105,096	29	4.7
T-205 Effluent (AP-5 Wash Water)[2] [3]	78,856	NA	NA

Notes:

TR = Total Recoverable; NA = Not Analyzed.

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

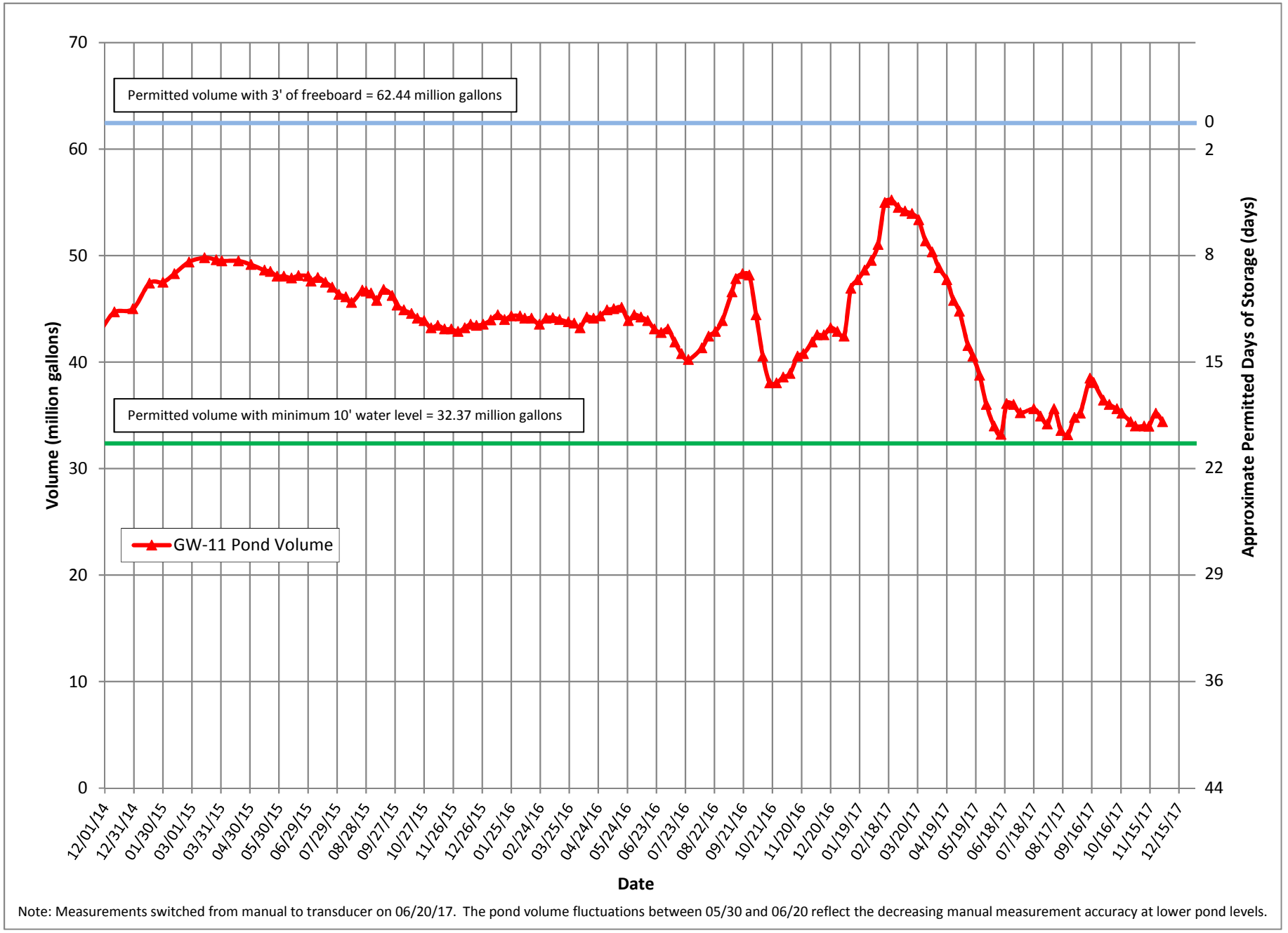
2: AP-5 Wash Water perchlorate data is also included in the GW-11 Effluent/ FBR Influent totals.

3: AP-5 Wash Water concentrations and mass flux are estimates based on mass flow meter readings.

Figures

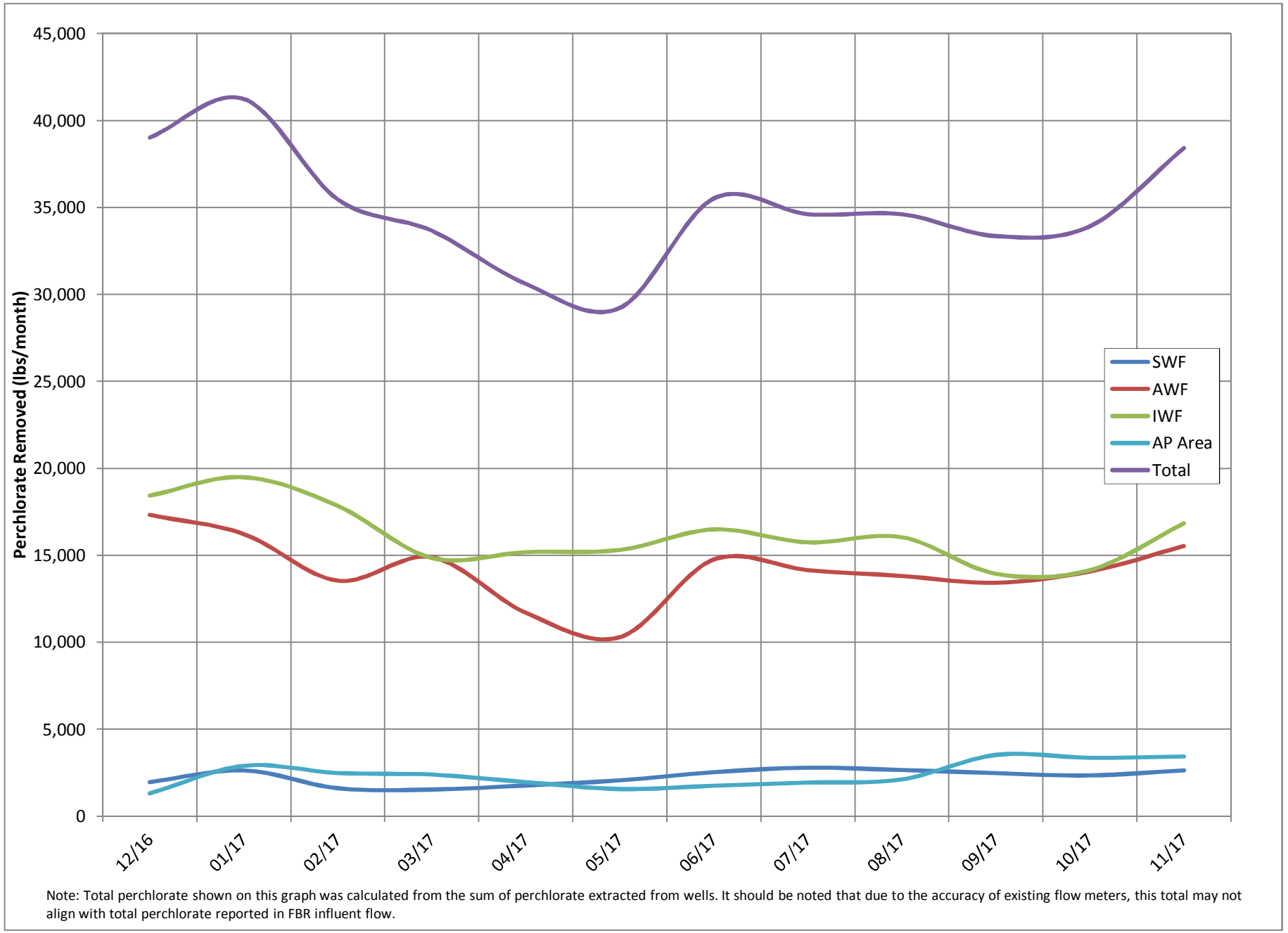
Operational Metrics

Nevada Environmental Response Trust
GW-11 Pond Volume
Update 11/28/2017



Note: Measurements switched from manual to transducer on 06/20/17. The pond volume fluctuations between 05/30 and 06/20 reflect the decreasing manual measurement accuracy at lower pond levels.

Figure 2 - Historical Perchlorate Mass Removed From Environment



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.

Updated: 12/19/2017

Attachment A

NPDES Tracking Sheet (Prepared by ENVIRON)

Treated Effluent at Outfall 001																								
Continuous		Daily Samples, composited weekly		Weekly Grab Samples													Weekly, collected separately			Quarterly				
Flow Rate		Perchlorate		pH		Hexavalent Chromium	Total Chromium	Manganese	Total Iron	Total Inorganic Nitrogen (TIN)	Total Suspended Solids (TSS)		Total Ammonia as N	Total Phosphorus as P			BOD_5 (inhibited)			Total Dissolved Solids (TDS)				
30-Day Avg. (MGD)	Daily Maximum (MGD)	30-Day Avg. (µg/L)	30-Day Avg. (lbs/day)	Daily Min. (S.U.)	Daily Max. (S.U.)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (mg/L)	Daily Average (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)	Daily Max. (mg/L)				
2.52	**2.88**	**18**	**0.38**	**6.5**	**9.0**	**10**	**100**	**5,000**	**10,000**	**20**	**135**	**2,839**	**20***	**10***			**25**	**40**	**525**	**8,000**				
January 2017	1.38	1.42	1.3	0.014	6.75	7.13	0.13	30	510	9,600	0.60	32	370	4.8	1.1		2.4	4.3	28					
February 2017	1.50	1.80	9	0.09	6.72	7.16	0.13	36	530	4,200	0.59	21	280	4.0	1.1		5.7	8.4	68	5,400				
March 2017	1.76	1.86	0.5	0.0073	6.65	6.80	0.13	9.5	540	4,700	1.6	23	340	8	1.2		2.8	5.4	41					
April 2017	1.82	1.93	0.5	0.0076	6.70	6.88	0.13	20	570	4,000	1.3	22	330	3.0	3.6		2.8	4.1	42					
May 2017	1.84	1.91	0.5	0.0077	6.68	7.00	0.13	10	580	3,300	2.0	20	310	3.2	2.4		1.7	2.8	26	4,900				
June 2017	1.62	1.94	0.5	0.0066	6.81	7.10	0.13	21	620	2,200	1.9	18	240	2.2	0.68		1.2	2.3	16					
July 2017	1.75	2.14	10	0.14	6.58	7.16	0.13	7.2	620	2,100	8.1	12	170	16	0.8		1.5	2.0	23					
August 2017	1.72	1.97	0.5	0.0073	6.64	7.15	0.13	14	620	5,200	1.2	34	500	9	4		1.4	2.1	22	4,400				
September 2017	1.92	2.01	1.3	0.021	6.50	6.86	0.13	6.6	600	3,500	2.1	19	310	3.4	1.3		2.3	3.6	36					
October 2017	1.92	2.02	0.5	0.0080	6.57	6.90	0.13	8.5	680	3,700	11	11	180	96	1.2		2.0	2.7	32					
November 2017 (month to date)	1.81	2.00	0.9	0.014	6.55	6.81	0.29	6.0	830	4,900	14	16	240	160	1.3		3.5	4.2	54	4,400				
December 2017 (month to date)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA					

Daily Grab Sample Dates	Composite Sample Date		µg/L	lbs/day	Sample Date	S.U.	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	lbs/day	mg/L		lbs/day		mg/L	lbs/day	Sample Date	mg/L		lbs/day	Sample Date	mg/L
1/1 - 1/7	1/7/2017	ND (<2.5)	1.3	0.014	1/3/2017	6.76	ND (<0.25)	8.0	280	3,100	ND (<0.50)	26	300	--	0.35	4.0	--	0.046	0.53	1/4/2017	2.2		25		
1/8 - 1/14	1/14/2017	ND (<2.5)	1.3	0.015	1/11/2017	7.03	ND (<0.25)	30	410	9,600	0.60	62	728	--	0.60	7.0	--	0.13	1.5	1/11/2017	ND (<0.50)	0.25	2.9	1/10/2017	5,400
1/15 - 1/21	1/21/2017	ND (<2.5)	1.3	0.015	1/16/2017	7.13	ND (<0.25)	17	510	3,400	ND (<0.50)	27	313	--	0.23	2.7	--	0.078	0.91	1/18/2017	4.3		50		
1/22 - 1/28	1/28/2017	ND (<2.5)	1.3	0.014	1/24/2017	6.89	ND (<0.25)	29	480	3,100	ND (<0.50)	22	247	--	0.37	4.2	--	0.079	0.89	1/25/2017	2.9		33		
1/29 - 2/4	2/4/2017	ND (<2.5)	1.3	0.014	1/30/2017	6.75	ND (<0.25)	16	390	3,100	0.52	23	263	--	0.52	5.9	--	0.13	1.5	2/1/2017	3.9		45		
2/5 - 2/11	2/11/2017	34^	34	0.32	2/6/2017	7.00	ND (<0.25)	21	460	4,200	ND (<0.50)	25	234	ND (<0.10)	0.050	0.47	--	0.13	1.2	2/10/2017	8.4		79		
2/12 - 2/18	2/18/2017	ND (<1.0)	0.5	0.0068	2/13/2017	7.16	ND (<0.25)	36	320	340	ND (<0.50)	19	24 260 329	--	0.12	1.6	--	0.11	1.5	2/15/2017	5.2		71		
2/19 - 2/25	2/25/2017	ND (<1.0)	0.5	0.0072	2/21/2017	6.73	ND (<0.25)	10	480	3,900	0.59	19	273	--	0.59	8.5	--	0.059	0.85	2/22/2017	5.4		78		
2/26 - 3/4	3/4/2017	ND (<1.0)	0.5	0.0074	2/27/2017	6.72	ND (<0.25)	8.9	530	3,400	ND (<0.50)	19	282	--	0.36	5.3	--	0.046	0.68	3/1/2017	2.7		40		
2/5 - 3/11	3/11/2017	ND (<1.0)	0.5	0.0074	3/6/2017	6.78	ND (<0.25)	7.9	490	1,800	1.6	17	253	--	1.0	15	--	0.11	1.6	3/8/2017	2.3		34		
3/12 - 3/18	3/18/2017	ND (<1.0)	0.5	0.0074	3/13/2017	6.75	ND (<0.25)	6.7	540	2,300	1.2	21	309	--	0.50	7.4	--	0.058	0.85	3/15/2017	1.9		28		
3/19 - 3/25	3/25/2017	ND (<1.0)	0.5	0.0074	3/20/2017	6.65	ND (<0.25)	9.5	490	4,700	ND (<0.50)	27	398	--	0.32	4.7	--	0.073	1.08	3/22/2017	1.8		27		
3/26 - 4/1	3/31/2017	ND (<1.0)	0.5	0.0071	3/27/2017	6.80	ND (<0.25)	7.1	540	2,900	1.2	27	384	--	0.26	3.7	--	0.10	1.4	3/29/2017	5.4		77		
4/2 - 4/8	4/8/2017	ND (<1.0)	0.5	0.0074	4/3/2017	6.72	ND (<0.25)	17	570	3,500	0.87	20	296	ND (<0.10)	0.05	0.74	--	0.066	0.98	4/5/2017	2.3		34		
4/9 - 4/15	4/15/2017	ND (<1.0)	0.5	0.0074	4/10/2017	6.70	ND (<0.25)	12	570	3,900	1.2	24	354	--	0.16	2.4	--	0.16	2.4	4/12/2017	1.9		28		
4/16 - 4/22	4/22/2017	ND (<1.0)	0.5	0.0078	4/17/2017	6.88	ND (<0.25)	20	530	4,000	ND (<0.50)	23	358	--	0.25	3.9	--	0.62	9.6	4/19/2017	4.1		64		
4/23 - 4/29	4/29/2017	ND (<1.0)	0.5	0.0078	4/24/2017	6.82	ND (<0.25)	11	520	2,900	1.3	21	330	--	0.31	4.9	--	0.084	1.3	4/26/2017	2.7		42		
4/30 - 5/6	5/6/2017	ND (<1.0)	0.5	0.0078	5/1/2017	6.76	ND (<0.25)	7.6	490	1,800	ND (<0.50)	19	296	--	0.11	1.7	--	0.55	8.6	5/3/2017	1.2		19	5/1/2017	4,900
5/7 - 5/13	5/13/2017	ND (<1.0)	0.5	0.0078	5/8/2017	6.68	ND (<0.25)	8.5	450	3,000	0.64	19	296	--	0.17	2.6	--	0.033	0.51	5/10/2017	1.5		23		
5/14 - 5/20	5/20/2017	ND (<1.0)	0.5	0.0073	5/15/2017	6.69	ND (<0.25)	9.0	540	3,300	1.0	16	234	--	0.31	4.5	--	0.081	1.18	5/17/2017	0.94		14		
5/21 - 5/27	5/27/2017	ND (<1.0)	0.5	0.0077	5/22/2017	6.93	ND (<0.25)	6.1	580	2,400	ND (<0.50)	18	278	--	0.15	2.3	--	0.074	1.14	5/24/2017	2.8		43		
5/28 - 6/3	6/3/2017	ND (<1.0)	0.5	0.0079	5/29/2017	7.00	ND (<0.25)	10	500	2,700	2.0	28	444	--	0.29	4.6	--	0.046	0.73	5/31/2017	2.0		32		
6/4 - 6/10	6/10/2017	ND (<1.0)	0.5	0.0075	6/5/2017	6.81	ND (<0.25)	5.8	540	2,200	ND (<0.50)	20	299	--	0.15	2.2	--	0.048	0.72	6/7/2017	0.68		10.2		
6/11 - 6/17	6/17/2017	ND (<1.0)	0.5	0.0063	6/12/2017	6.93	ND (<0.25)	21	560	2,200	1.9	31	389	--	0.26	3.3	--	0.056	0.70	6/14/2017	0.97		12.2		
6/18 - 6/24	6/24/2017	ND (<1.0)	0.5	0.0062	6/19/2017	6.89	ND (<0.25)	6.3	620	770	ND (<0.50)	9.0	112	--	0.22	2.7	--	0.059	0.74	6/21/2017	0.85		10.6		
6/25 - 7/1	7/1/2017	ND (<1.0)	0.5	0.0066	6/26/2017	7.10	ND (<0.25)	7.9	560	1,400	0.88	12	157	ND (<0.10)	0.05	0.66	--	0.044	0.58	6/30/2017	2.3		30		
7/2 - 7/8	7/8/2017	16^^	16	0.21	7/3/2017	7.16	ND (<0.25)	2.6	520	680	1.6	9.3	125	ND (<0.10)	0.05	0.67	--	0.042	0.56	7/5/2017	2.0		25		
7/9 - 7/15	7/15/2017	15^^	15	0.22	7/10/2017	6.77	ND (<0.25)	7.2	590	2,100	ND (<0.50)	21	293	--	0.20	2.8**	--	0.099	1.4	7/12/2017	1.2		18		
7/16 - 7/22	7/22/2017	8.8^^	8.8	0.13	7/17/2017	6.80	ND (<0.25)	4.1	530	1,100	ND (<0.50)	11	165	--	0.13	2.0**	--	0.043	0.65	7/19/2017	1.2		21		
7/23 - 7/29	7/29/2017	ND (<1.0)	0.5	0.0077	7/24/2017	6.80	ND (<0.25)	2.9	540	710	1.5	3.2	49	--	0.59	9.0**	--	0.050	0.76	7/26/2017	1.7		27		
7/30 - 8/5	8/5/2017	ND (<1.0)	0.5	0.0066	7/31/2017	6.58	ND (<0.25)	2.6	620	670	8.1	16	238	--	7.0	104**	--	0.042	0.62	8/2/2017	1.6		24	8/1/2017	4,400
8/6 - 8/12	8/12/2017	ND (<1.0)	0.5	0.0074	8/7/2017	6.84	ND (<0.25)	ND (<2.5)	410	580	1.2	2.8	41	--	0.13	1.9**	--	0.032	0.47	8/9/2017	1.3		20		
8/13 - 8/19	8/19/2017	ND (<1.0)	0.5	0.0076	8/14/2017	6.64	ND (<0.25)	13	470	4,300	ND (<0.50)	52	800	--	0.12	1.8**	--	0.76	12	8/16/2017	1.8		27		
8/20 - 8/26	8/26/2017	ND (<1.0)	0.5	0.0067	8/21/2017	7.05	ND (<0.25)	14	580	5,200	0.90	62	872	ND (<0.10)	0.05	0.70**	--	0.18	2.5	8/23/2017	ND (<0.50)	0.25	2.2		
8/27 - 9/2	9/2/2017	ND (<1.0)	0.5	0.0081	8/28/2017	7.15	ND (<0.25)	7.7	620	2,300	1.2	18	276	ND (<0.10)	0.05	0.77**	--	0.18	2.8	8/30/2017	2.1		35		
9/3 - 9/9	9/9/2017	ND (<1.0)	0.5	0.0081	9/5/2017	6.65	ND (<0.25)	6.6	580	3,500	ND (<0.50)	42	657	--	0.23	3.5	--	0.14	2.2	9/6/2017	0.75		12		
9/10 - 9/16	9/16/2017	ND (<1.0)	0.5	0.0079	9/11/2017	6.72	ND (<0.25)	3.5	580	960	2.1	14	224	--	0.19	3.0	--	0.053	0.85	9/13/2017	3.6		58		
9/17 - 9/23	9/23/2017	ND (<1.0)	0.5	0.0078	9/18/2017	6.50	ND (<0.25)	5.1	590	1,600	1.4	9.7	151	--	0.32	5.0	--	0.088	1.4	9/20/2017	2.5		40		
9/24 - 9/30	9/30/2017	3.7	3.7	0.059	9/25/2017	6.86	ND (<0.25)	4.4	600	2,300	ND (<0.50)	12	201	--	0.12	2.0	--	0.057	1.0	9/27/2017	2.3		36		
10/1 - 10/7	10/7/2017	ND (<1.0)	0.5	0.0080	10/2/2017	6.79	ND (<0.25)	8.3	670	3,700	ND (<0.50)	13	205	--	0.19	3.0	--	0.055	0.87	10/4/2017	2.7		43		
10/8 - 10/14	10/14/2017	ND (<1.0)	0.5	0.0082	10/9/2017	6.57	ND (<0.25)	6.5	600	2,300	4.4	11	177	--	3.0	48	--	0.038	0.61	10/11/2017	2.7		46		
10/15 - 10/21	10/21/2017	ND (<1.0)	0.5	0.0082	10/16/2017	6.90	ND (<0.25)	3.6	680	1,400	9.4	6.6	108	--	6.2	101**	--	0.085	1.4	10/18/2017	0.76		12		
10/22 - 10/28	10/28/2017	ND (<1.0)	0.5	0.0078	10/23/2017	6.78	ND (<0.25)	8.5	640	3,700	11	17	267	--	7.9	124**	--	0.16	2.5	10/25/2017	1.7		28		
10/29 - 11/4	11/4/2017	ND (<1.0)	0.5	0.0078	10/30/2017	6.68	ND (<0.25)	3.7	640	1,400	11	7.5	118	--	8.4	133**	--	0.050	0.79	11/1/2017	3.8		61	11/1/2017	4,400
11/5 - 11/11	11/11/2017	ND (<1.0)	0.5	0.0076	11/6/2017	6.55	0.29	ND (<2.5)	830	880	12	3.6	55	--	11	168**	--	0.025	0.38	11/8/2017	2.9		44		
11/12 - 11/18	11/18/2017	ND (<1.0)	0.5	0.0074	11/13/2017	6.81	ND (<0.25)	6.0	710	4,900	14	19	284	--	11	164**	--	0.19	2.8	11/15/2017	4.2		64		
11/19 - 11/25	11/25/2017	2.1	2.1	0.031	11/20/2017	6.73	ND (<0.25)	5.4	730	3,700	14	24	367	--	12	183**	--	0.044	0.67	11/21/2017	3.2		48		
11/26 - 12/2	12/2/2017	NA	NA	NA	11/27/2017	6.67	ND (<0.25)	5.0	660	2,900	11	18	240	--	8.4	112**	--	0.091	1.2	11/29/2017	3.5		NA		
					12/4/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12/6/2017	NA		NA		

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

^ Following reciept of the 34 ug/L sample result, the individual daily effluent samples collected between 2/5 and 2/11 were submitted for perchlorate analysis. The individual effluent samples were also composited by the laboratory to create a new effluent composite sample. All re-analyzed effluent samples were non-detect for perchlorate.

^^ Following reciept of the sample result, a re-composite sample was submitted for perchlorate analysis. All re-composited effluent samples were non-detect for perchlorate.

** Additional samples were collected and analyzed for ammonia during this week and results were included in the 30-day average loading calculation.

NA = Not Available To Date

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

* Total phosphorus discharge limitation of 10 lbs/day applies between March 1 and October 31; Ammonia discharge limitation of 20 lbs/day applies between April 1 and September 30; no limits apply the rest of the year.

Last Updated: December 8, 2017

Attachment B

Equipment Tracking Form

Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
		Main Plant Equipment				
1		**Seep Wells and Lift Station 1**				
1.01		*Seep Well Field, 9 wells*	Running			
1.02		*Lift Station 1 Lift Pump A*	Running		2	The packing was replaced on the turbine.
1.03		*Lift Station 1 Lift Pump B*	Standby			
1.04		*Area in and around Lift Station 1*	Running			
2		**Athens Road Wells and Lift Station** 3				
2.01		*Athens Road Well Field, 9 wells*	Running			
2.02		*Lift Station 3 Lift Pump A*	Standby			
2.03		*Lift Station 3 Lift Pump B*	Running			
2.04		*Area in and around Lift Station 3*	Running			
3		**Lift Station *2* and Transmission Pipelines**				
3.01		*Influent Pipeline*	In operation			
3.02		*Effluent Pipeline*	Running			
3.03		*Lift Station 2 Lift Pump A*	Running			
3.04		*Lift Station 2 Lift Pump B*	Standby			
3.05		*Area in and around Lift Station 2*	Running		3	The A/C unit was repaired. The motor and condenser was replaced.
4		**Interceptor Wells and Cr Treatment Plant**				
4.01		*IWF Well Field, 30 wells*	Running		2	A new motor and pump was installed on I-G.
4.02		*Ferrous Sulfate Feed System*	Running			
4.03		*Polymer Feed System*	Running			
4.04		*Clarifier*	In operation		3	The piping connecting the de-gassifier and the clarifier was flushed.
4.05		*Filter Press*	Running		2	A new discharge hose was installed on the press pump.
4.06		*GWTP Effluent Tank*	In operation			
4.07		*Interceptor Booster Pump A*	Running			
4.08		*Interceptor Booster Pump B*	Standby			
4.09		*Area In And Around GWTP*	Running			
5		**Equalization Area and GW-11 Pond**				
5.01	PID10A	*Pond GW-11*	In operation			
5.02	PID10A	*Pond Water Pump - P101A*	Running			
5.03	PID10A	*Pond Water Pump - P101B*	Standby			
5.04	PID10A	*Equalization Tanks*	In operation			
5.05	PID10A	*Area in and Around EQ*	In operation			
5.06	PID10A	*Raw Water Feed Pump - P102A*				

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
5.07	PID10A	*Raw Water Feed Pump - P102B*				
5.08	PID10A	*F-101 Filters*	Running			
5.09	PID10B	*Carbon Absorber - LGAC 201A*	Running			
5.10	PID10B	*Carbon Absorber - LGAC 201B*	Running			
5.11	PID10B	*Carbon Absorber - LGAC 201C*	Running			
6		**First Stage FBRs A, 1** *& 2*				
6.01	PID14	*FBR A*				
6.02	PID14	*Separator Tank - 1401*				
6.03	PID14	*Media Return Pump - P 1401*				
6.04	PID14	*P1401A*				
6.05	PID01A	*P1401B*				
6.06	PID01A	*FBR 1*	Running			
6.07	PID02A	*FBR 2*	Running			
6.08	PID01A	*First Stage Separator Tank - T2011*	Running			
6.09	PID01A	*Media Return Pump - P2011*	Running			
6.10	PID01A	*First Stage FBR Pump - P1011*	Standby			
6.11	PID01A	*First Stage FBR Pump - P1012*	Running			
6.12	PID01A	*First Stage FRB Pump - P101A*	Running			
6.13	PID07A	*FBR A pH Feed Pump - P71A*	Off			
6.14	PID07A	*FBR 1 pH Feed Pump - P711*	Off			
6.15	PID07A	*FBR 2 pH Feed Pump - P712*	Off			
6.16	PID07A	*FBR A Nutrient (Urea) Feed Pump - P72A*	Off			
6.17	PID07A	*FBR 1 Nutrient (Urea) Feed Pump - P721*	Off			
6.18	PID07A	*FBR 2 Nutrient (Urea) Feed Pump - P722*	Off			
6.19	PID15	*FBR A Nutrient (Phos Acid) Feed Pump - P1520A*	Running			
6.20	PID15	*FBR 1 Nutrient (Phos Acid) Feed Pump - P1521*	Running			
6.21	PID15	*FBR 2 Nutrient (Phos Acid) Feed Pump - P1522*	Running			
6.22	PID07B	*FBR A Electron Donor Assembly Pump - P73A*	Running			
6.23	PID07B	*FBR 1 Electron Donor Assembly Pump - P731*	Running			
6.24	PID07B	*FBR 2 Electron Donor Assembly Pump - P732*	Running			
7		**First Stage FBRs 3** *& 4*				
7.01	PID01B	*FBR 3*	Running			
7.02	PID01B	*FBR 4*	Running			
7.03	PID02B	*First Stage Separator Tank - T2012*	Running			
7.04	PID01B	*Media Return Pump - P2012*	Running			
7.05	PID01B	*First Stage FBR Pump - P1013*	Running			
7.06	PID01B	*First Stage FRB Pump - P1014*	Running			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
7.07	PID01B	*First Stage FBR Pump - P102A*	Running			
7.08	PID07A	*FBR 3 pH Feed Pump - P713*	Running			
7.09	PID07A	*FBR 4 pH Feed Pump - P714*	Running			
7.10	PID07A	*FBR 3 Nutrient (Urea) Feed Pump - P723*				
7.11	PID07A	*FBR 4 Nutrient (Urea) Feed Pump - P 724*	Off			
7.12	PID15	*FBR 3 Nutrient (Phos Acid) Feed Pump - P1523*	Running			
7.13	PID15	*FBR 4 Nutrient (Phos Acid) Feed Pump - P1524*	Running			
7.14	PID07B	*FBR 3 Electron Donor Assembly Pump - P733*	Running			
7.15	PID07B	*FBR 4 Electron Donor Assembly Pump - P734*	Running			
8		**Second Stage FBRs 5** & 6				
8.01	PID03A	*FBR 5*	Running			
8.02	PID03A	*FBR 6*	Running			
8.03	PID03C	*Second Stage Separator Tank - T3011*	Running			
8.04	PID03A	*Media Return Pump - P3011*	Running			
8.05	PID03A	*Second Stage FBR Pump - P3015*	Running			
8.06	PID03A	*Second Stage FBR Pump - P3016*	Standby			
8.07	PID03A	*Second Stage FBR Pump - P301A*	Running			
8.08	PID07A	*FBR 5 pH Feed Pump - P715*	Off			
8.09	PID07A	*FBR 6 pH Feed Pump - P716*	Off			
8.1	PID07A	*FBR 5 Nutrient (Urea) Feed Pump - P725*	Off			
8.11	PID07A	*FBR 6 Nutrient (Urea) Feed Pump - P726*	Off			
8.12	PID07B	*FBR 5 Electron Donor Assembly Pump - P735*	Running			
8.13	PID07B	*FBR 6 Electron Donor Assembly Pump - P736*	Running			
9		**Second Stage FBRs 7** & 8				
9.01	PID03B	*FBR 7*	Running			
9.02	PID03B	*FBR 8*	Running			
9.03	PID03D	*Second Stage Separator Tank - T3012*	Running			
9.04	PID03B	*Media Return Pump - P3012*	Running			
9.05	PID03B	*Second Stage FBR Pump - P3017*	Running			
9.06	PID03B	*Second Stage FBR Pump - P3018*	Running			
9.07	PID03B	*Second Stage FBR Pump - P302A*	Running			
9.08	PID07A	*FBR 7 pH Feed Pump - P717*	Off			
9.09	PID07A	*FBR 8 pH Feed Pump - P718*	Off			
9.10	PID07A	*FBR 7 Nutrient (Urea) Feed Pump - P727*	Off			
9.11	PID07A	*FBR 8 Nutrient (Urea) Feed Pump - P728*	Off			
9.12	PID07B	*FBR 7 Electron Donor Assembly Pump - P737*	Running			
9.13	PID07B	*FBR 8 Electron Donor Assembly Pump - P738*	Running			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
10		**Aeration and DAF System**				
10.01	PID04	*Aeration Tank*	In operation			
10.02	PID04	*Aeration Blower - B401*	Running			
10.03	PID04	*Bio filter*	In operation			
10.04	PID04	*Nutrient Solution*	Running			
10.05	PID04	*Bio filter Sump*				
10.06	PID04	*Nutrient Pump - P401*	Running			
10.07	PID04	*Bio filter Sump Pump - P402A*	Standby			
10.09	PID04	*Bio filter Blower*	Running			
10.10	PID05	*DAF Pressure Tanks*	In operation			
10.11	PID05	*DAF Vessel - D501*	Running			
10.12	PID05	*DAF Pressure Pump - P501*	Running			
10.13	PID05	*DAF Float Pump - P502*	Running			
10.14	PID05	*DAF Vessel - D551*	Running		2	A hole was patched on the DAF sludge tank.
10.15	PID05	*DAF Pressure Pump - P551*	Running			
10.16	PID05	*DAF Float Pump - P552*	Running			
10.17	PID05	*Screw Conveyer Drive*	Standby			
10.18	PID05	*Skimmer Drive*	Running			
11		**Pumping System (Old Effluent)**				
11.01	PID06	*Effluent Tank 601*	In operation			
11.02	PID06	*Effluent Pump - P601*	Running			
11.03	PID06	*Effluent Pump - P602*	Standby			
12		**Sand Filter System**				
12.01	PID17	*Sand Filter*			2	The unit was taken offline to clear debris from the reject line. Airlift #3 was rebuilt.
12.02	PID17	*Filter Reject Tank*	In operation			
12.03	PID17	*Filter Reject Pump - P1701A*	Standby			
12.04	PID17	*Filter Reject Pump - P1701B*	Running			
13		**Effluent Tank and Pumping**				
13.01	PID10C	*UV Effluent Tank*	Running			
13.02	PID10C	*Effluent Booster Pump - P1302A*	Running			
13.03	PID10C	*Effluent Booster Pump - P1302B*	Standby			
13.04	PID10C	*Area Around Effluent and North D-1*	Running			
14		**Solids Collection and Pressing System**				
14.01	PID16	*Sludge Storage Tank*	In operation			
14.02	PID16	*Solids Storage Effluent Pump - P1601*	Running			
14.03	PID16	*Solids Cond. Tank*	In operation			

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14.04	PID09	*Sludge Mixer*	Running			
14.05	PID09	*Filter Press Pump - P901*	Running			
14.06	PID09	*Filter Press Pump - P902*				
14.07	PID09	*West Press*	Standby		4	Press was pressure washed.
14.08	PID09	*East Press*	Running			
14.09	PID09	*Filtrate Tank*	In operation			
14.10	PID09	*Filtrate Tank Effluent (recycle) Pump - P903*	Running			
		Chemical Systems				
15		**Electron Donor System**				
15.01	PID07B	*Electron Donor Tank*	In operation			
15.02	PID07B	*Booster Pump P739A*	Running			
15.03	PID07B	*Booster Pump P739B*	Standby			
17	PID07C	*Micro Nutrient System*	In operation			
18	PID07C	*Hydrogen Peroxide System*	In operation			
19	PID07C	*De-Foam System*	In operation			
20	PID15	*Nutrient (Phosphoric Acid) System (Tank only - pumps included in FBRs)*	In operation			
21	PID07A	*Nutrient (Urea) System (Tank only - pumps included in FBRs)*	In operation			
22	PID07A	*pH System (Tank and effluent pH feed pump only - other pumps included in FBRs)*	In operation			
23	PID07C	*Ferric Chloride System*	In operation			
24	PID07B	*Polymer Systems - DAF*	In operation			
25	PID09	*Polymer System - Solids Dewatering (2 tanks, 2 centrifugal pumps, mixer, volumetric feeder)*	In operation			
		Utility Systems				
26		**Compressed Air System**				
26.01	PID08	*West Compressor*	Running			
26.02	PID08	*East Compressor*	Running		1	*The compressor is down due to a blown air cooler. Parts are to arrive by the end of Dec.*
26.03	PID08	*O2 Compressor*	Running			
26.04	PID08	*Compressed Air Receiver Tank*	In operation			
26.05	PID08	*Air Dryer*	Running			
26.06	PID08	*Oil Removal Filter*	In operation			
26.07	PID08	*Particulate Filter*	In operation			
27	PID16	*Oxygen System*	In operation			
28		*GWETS Plant Controls/ Siemens Controls*	In operation			

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29		*Well Control System/ Allen Bradley Controls*	In operation			
30		*MCC FBR Pad*	In operation			
31		*MCC in D-1*	In operation			
32		*MCC in EQ area*	In operation			
		Miscellaneous Systems				
33		*Operations Office/Network*	In operation			
34		*Laboratory Analyzers*	In operation			
35		*Security Systems*	In operation			
		Shelf Spares				
		Media Return Pump Rebuild Kit	In stock			
		pH Feed Pump	In stock			
		Nutrient Feed Pump	In stock			
		Electron Donor Feed Pump	In stock			
		Phosphoric Acid Feed Pump	In stock			
		Interceptor Well Pumps (4 each)	In stock			
		Seep Well Pump (1 each, same as Athens so total of 2)	In stock			
		Athens Road Well Pump (1 each, same as Seep so total of 2)	In stock			Spares are on the shelf.

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