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:	August 20, 2020
Subject:	NERT – GWETS Operation Monthly Report – July 2020

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 July 2020.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in July 2020. 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 181 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1,035 gpm during July 2020. At the end of the month, the GW-11 Pond volume was at 34.8 million gallons (MG), which would allow 19.2 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 increased by 0.8 MG from the end of June 2020. 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 0.26 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 66 mg/L for the month, with a maximum concentration of 95 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of June 2020 averaged 98 mg/L, with a maximum concentration of 100 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 July.

2. Biological Plant

Treatment of AP-5 water through the FBR Biological plant was completed in the month of July. Treatment began the month with a flow rate of 6.0 gpm and maintained that flow rate until flows were terminated on July 14, 2020 at 9:15am.

There were influent / effluent diversions during the reporting period generally associated with GW-11 pond level maintenance as well as extraction well short-term shutdown events. Below is a description of the events that occurred:

Diversion Events / Well Shutdowns

- Effluent diversion to GW-11 occurred on July 2, 2020 from 12:56am to 5:25am due to low GW-11 pond level. Approximately 283,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 2, 2020 from 11:39pm to July 3, 2020 at 5:40am due to low GW-11 pond level. Approximately 340,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 7, 2020 from 11:32pm to July 8, 2020 at 5:30am due to low GW-11 pond level. Approximately 393,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 9, 2020 from 11:31pm to July 10, 2020 at 5:20am due to low GW-11 pond level. Approximately 408,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 10, 2020 from 5:57pm to 12:47pm due to maintenance efforts associated with repairs to the Sand Filter. Approximately 403,000 gallons of effluent were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 13, 2020 from 11:30pm to July 14, 2020 at 5:08am due to low GW-11 pond level. Approximately 395,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 15, 2020 from 11:30pm to July 16, 2020 at 5:30am due to low GW-11 pond level. Approximately 394,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 17, 2020 from 1:39pm to July 18, 2020 at 5:30am due to low GW-11 pond level. Approximately 270,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 19, 2020 from 2:26am to 8:33am due to low GW-11 pond level. Approximately 403,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the Interceptor Well Field (IWF) occurred on July 20, 2020 from 10:18am to 11:25amm due to maintenance activities on the effluent flow meter.
- Effluent diversion to GW-11 occurred on July 20, 2020 from 11:48pm to July 21, 2020 at 5:20am due to low GW-11 pond level. Approximately 365,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 21, 2020 from 10:30pm to July 22, 2020 at 5:15am due to low GW-11 pond level. Approximately 384,000 gallons of water were diverted to GW-11.

- Effluent diversion to GW-11 occurred on July 22, 2020 from 10:01pm to July 23, 2020 at 5:18am due to low GW-11 pond level. Approximately 481,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 19, 2020 from 2:26am to 8:33am due to low GW-11 pond level. Approximately 403,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 23, 2020 from 10:26am to 1:35pm due to maintenance efforts associated with repairs to the effluent GW-11 diversion valve. Approximately 207,000 gallons of effluent were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 25, 2020 from 1:38am to 4:14am due to low GW-11 pond level. Approximately 170,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 26, 2020 from 4:08am to 6:19am due to low GW-11 pond level. Approximately 140,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 27, 2020 from 11:23pm to July 28, 2020 at 5:23am due to low GW-11 pond level. Approximately 305,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 31, 2020 from 12:57am to 6:00am due to low GW-11 pond level. Approximately 329,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 31, 2020 from 11:49pm to Aug 1, 2020 at 4:53am due to low GW-11 pond level. Approximately 345,000 gallons of water were diverted to GW-11.

3. Spills

There were no reportable spills in the month of July.

4. Maintenance

- Major maintenance performed by ETI in the month included:

  I. Installed the rebuilt hydraulic cylinder on the GWTP filter press.
  II. Rebuilt the media return pump for Separator 3.
  III. Installed the new check valve and spool on the discharge piping of FBR 8 recycle pump.
  IV. Installed a rebuilt motor on the north turbine at Lift Station 1.
  V. Installed a new controller and contactor on the west air compressor.
  VI. Replaced the 3 hp motor on extraction well ART-7b.
  VII. Installed a new pump on the DAF polymer feed system.
  VIII. Relocated the DAF turbidity meter and installed a metering pump.

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

  I. Changed the oil on the Lift Station 2 motor.
  II. Greased the bearings on the exhaust fans in the D-1 building.
  III. Flushed the seal water roto-meters on the FBR Recycle pump skids.
  IV. Cleaned and flushed the combo valves on the effluent pipeline.
  V. Flushed the ORP lines and pH probes.
  VI. Changed the packing on the turbine pumps at Lift Station 1.
  VII. Pulled and inspected the Lift Station 1 flowmeter. A new unit has been ordered.
  VIII. Added oil and inspected the belt on the east air compressor.

GWETS Upgrades and Facility Projects

Unit 4 Chromium Water Treatment Plant – Envirogen received comments regarding the deliverable documents that were submitted to the Trust in July 2019 for this project. The revised documents dealing with the Controls Specification, Process Drawings, and Mechanical Details were re-submitted to the Trust in September. Envirogen is awaiting further direction from the Trust regarding this matter. The Trust has advised Envirogen that this project is on hold pending finalization and approval of the forthcoming Unit 4 Source Area In-Situ Bioremediation Work Plan.

GWETS Extension –The signed Work Authorization for engineering and fabrication of the GWETS Extension was returned to the Trust on January 28, 2020. Orders have been placed for the major equipment for the GWETS Extension with deliveries expected during the third and fourth quarters of 2020. Envirogen is currently awaiting Trust comment on the O&M Work Authorization proposal for the GWETS Extension.

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)[6 7]**	**Chromium (TR) (mg/L)[6 7]**	**Chromium(VI) (mg/L)[6 7]**
SWF Total Extraction[1]	746 [5]	7.1	0.0035	0.0029
AWF Total Extraction[1]	465 [5]	65	0.15	0.15
IWF Total Extraction[1]	61 [5]	437	6.4	6.5
AP Area Total Extraction[1]	10.4 [5]	578	0.128	0.124
GWTP Effluent[2]	62	449	1.6	ND
GW-11 Influent[1]	0.10	50	0.07	0.051
FBR Influent[2 3]	1,035	66	0.030	0.029
T-205 Effluent (AP-5 Wash Water)[3 4 8]	1.1	1,920	NA	NA

Notes:

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

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

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

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

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

5: Sum of daily average flow for individual wells.

6: All concentrations reported are monthly flow weighted averages.

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

8: AP-5 sediment mixing and solids washing activities were completed on January 4, 2020. AP-5 tank processing was completed on 7/15/20.

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics			
Location ID	**Perchlorate (lbs/month)[3]**	**Chromium (TR) (lbs/month)[3]**	**Chromium (VI) (lbs/month)[3]**
SWF Total Extraction	1,972	0.99	0.81
AWF Total Extraction	11,258	26	27
IWF Total Extraction	9,873	145	146
AP Area Total Extraction	2,242	0.50	0.48
GWTP Effluent	10,423	37	ND
GW-11 Influent	1.8	0.002	0.0018
FBR Influent[1]	25,410	11	11.3
T-205 Effluent (AP-5 Wash Water)[1 2 4]	755	NA	NA

Notes:

TR = Total Recoverable; NA = Not Analyzed.

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

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

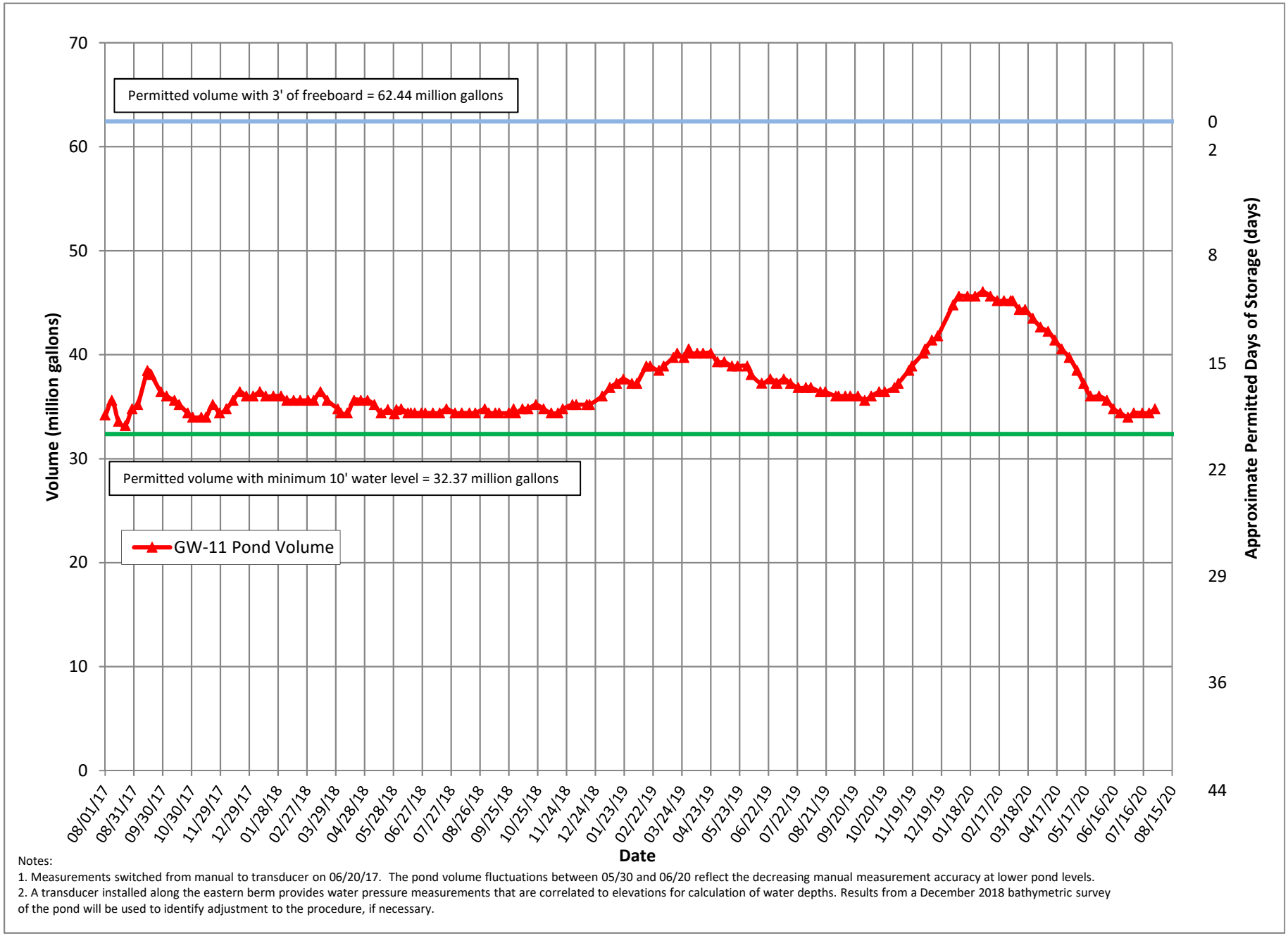
3: Total mass extracted is calculated from flow weighted average concentration and average flow (see Table 1).

4: AP-5 sediment mixing and solids washing activities were completed on January 4, 2020. AP-5 tank processing was completed on 7/15/20.

Figures

Operational Metrics

Figure 1 - GW-11 Pond Volume Through 7/31/2020

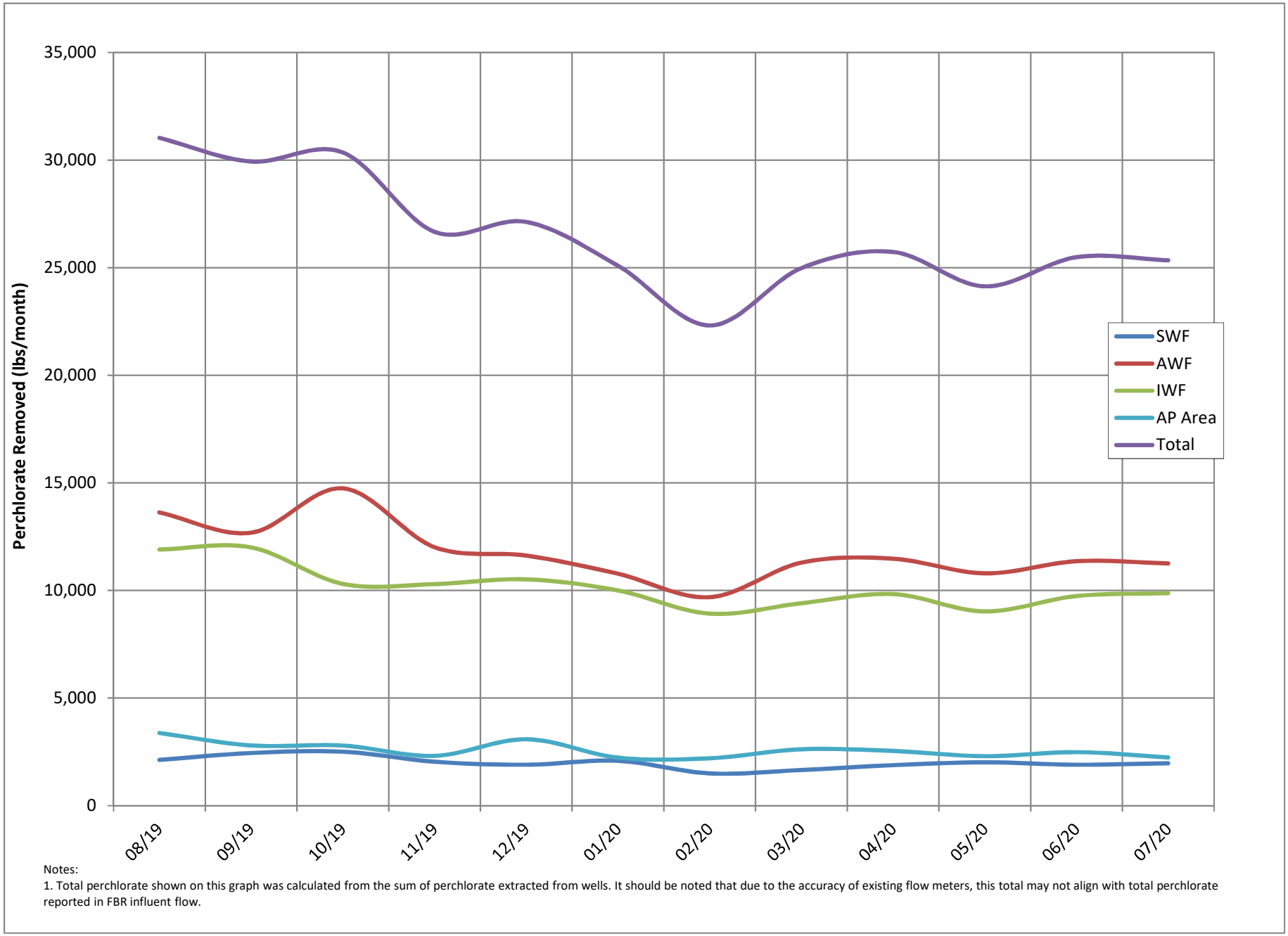


Notes:

1. 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.
2. A transducer installed along the eastern berm provides water pressure measurements that are correlated to elevations for calculation of water depths. Results from a December 2018 bathymetric survey of the pond will be used to identify adjustment to the procedure, if necessary.

Figure Updated: 8/6/2020

Figure 2 - Historical Perchlorate Mass Removed From Environment



Notes:
1. 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.

Figure Updated: 8/17/2020

Attachment A

NPDES Tracking Sheet (Prepared by Ramboll)

NPDES Permit NV0023060 - Analytes with Numerical Discharge Limits

WORKING TRACKING SPREADSHEET
DRAFT - NOT TO BE SUBMITTED TO AGENCY

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 2020	1.82	1.89	3	0.04	6.61	6.87	1.1	19	290	540	0.85	5.0	80	6		3.3			1.3	2.1	20			
February 2020	1.85	1.91	<2.5	0.019	6.68	6.91	ND (<0.25)	7.6	170	980	1.1	4.9	70	2.3		1.6			ND (<2.0)	ND (<2.0)	16	4,100		
March 2020	1.86	1.91	<2.5	0.019	6.55	7.11	0.36	5.4	220	1,100	ND (<0.50)	7	110	1.3		1.7			ND (<2.0)	ND (<2.0)	15			
April 2020	1.85	1.88	<2.5	0.019	6.59	7.12	ND (<0.25)	6.4	160	1,300	ND (<0.50)	12	180	1.0		1.3			1.6	2.6	24			
May 2020	1.81	1.91	<2.5	0.019	6.51	6.98	ND (<0.25)	7.4	160	830	11	9	130	10		2.4			1.6	3.3	24	4,500		
June 2020	1.73	1.88	<2.5	0.018	6.66	7.01	ND (<0.25)	7.5	160	820	1.1	8	120	4.5		1.3			2.0	4.0	27			
July 2020	1.61	1.87	<2.5	0.017	6.49	7.12	ND (<0.25)	5.8	150	930	1.6	7	80	8		2.0			2.1	3.8	32	NA		
August 2020 (month to date)	1.60	1.87	ND (<2.5)	0.017	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
12/29 - 1/4	1/4/2020	4.4	4.4	0.063	12/30/2019	6.63	ND (<0.25)	4.6	300	63	4.5	14	196	--	4.5	63	--	0.27	3.8	12/30/2019	ND (<2.0)	1.0	14		
1/5 - 1/11	1/11/2020	12, <0.079	6	0.09	1/6/2020	6.61	ND (<0.25)	2.7	290	58	0.85	4.9	70	--	0.85	12	--	0.22	3.1	1/8/2020	ND (<2.0)	1.0	15		
1/12 - 1/18	1/18/2020	ND (<2.5)	1.3	0.019	1/13/2020	6.63	ND (<0.25)	19	210	66	ND (<0.50)	3.2	49	--	0.25	3.8	ND (<0.025)	0.013	0.19	1/15/2020	ND (<2.0)	1.0	16		
1/19 - 1/25	1/25/2020	ND (<2.5)	1.3	0.019	1/20/2020	6.87	ND (<0.25)	5.8	210	140	ND (<0.50)	9.2	142	--	0.16	2.5	--	0.12	1.9	1/22/2020	2.1		32		
1/26 - 2/1	2/1/2020	ND (<2.5)	1.3	0.019	1/27/2020	6.76	1.1	ND (<2.5)	200	540	ND (<0.50)	2.7	41	--	0.35	5.4	--	0.51	7.8	1/29/2020	ND (<2.0)	1.0	15		
2/2 - 2/8	2/8/2020	ND (<2.5)	1.3	0.019	2/3/2020	6.91	ND (<0.25)	3.3* 3.0	150	980	1.1	6.7	103	--	0.11	1.7	--	0.093	1.4	2/6/2020	ND (<2.0)	1.0	16	2/4/2020	4,100
2/9 - 2/15	2/15/2020	ND (<2.5)	1.3	0.019	2/10/2020	6.68	ND (<0.25)	7.6	170	820	ND (<0.50)	6.4	97	--	0.18	2.7	--	0.095	1.4	2/12/2020	ND (<2.0)	1.0	15		
2/16 - 2/22	2/22/2020	ND (<2.5)	1.3	0.019	2/17/2020	6.87	ND (<0.25)	4.5	160	510	ND (<0.50)	3.0	46	--	0.15	2.3	--	0.12	1.8	2/19/2020	ND (<2.0)	1.0	15		
2/23 - 2/29	2/29/2020	ND (<2.5)	1.3	0.020	2/24/2020	6.81	ND (<0.25)	3.6	140	770	ND (<0.50)	3.5	54	--	0.17	2.6	--	0.11	1.7	2/26/2020	ND (<2.0)	1.0	16		
3/1 - 3/7	3/7/2020	ND (<2.5)	1.3	0.020	3/2/2020	7.01	ND (<0.25)	4.8	190	920	ND (<0.50)	5.8	91	--	0.17**	2.7	--	0.13	2.0	3/4/2020	ND (<2.0)	1.0	15		
3/8 - 3/14	3/14/2020	ND (<2.5)	1.3	0.019	3/9/2020	6.55	ND (<0.25)	4.7	220	890	ND (<0.50)	6.1	96	--	0.12**	1.9	--	0.11	1.7	3/12/2020	ND (<2.0)	1.0	15		
3/15 - 3/21	3/21/2020	ND (<2.5)	1.3	0.019	3/16/2020	7.11	ND (<0.25)	5.4	190	1,100	ND (<0.50)	11	173	ND (<0.10)	0.05**	0.79	--	0.077	1.2	3/18/2020	ND (<2.0)	1.0	16		
3/22 - 3/28	3/28/2020	ND (<2.5)	1.3	0.019	3/23/2020	6.74	ND (<0.25)	3.6	220	1,000	ND (<0.50)	6.2	97	--	0.14**	1.5	--	0.13	2.0	3/25/2020	ND (<2.0)	1.0	15		
3/29 - 4/4	4/4/2020	ND (<2.5)	1.3	0.019	3/30/2020	6.61	0.36	3.5	140	740	ND (<0.50)	5.5	86	ND (<0.10)	0.05**	0.76	--	0.082	1.3	4/1/2020	ND (<2.0)	1.0	15		
4/5 - 4/11	4/11/2020	ND (<2.5)	1.3	0.019	4/6/2020	7.12	ND (<0.25)	6.2	160	1,200	ND (<0.50)	12	187	--	0.19**	1.9		0.12	1.9	4/8/2020	2.6		41		
4/12 - 4/18	4/18/2020	ND (<2.5)	1.3	0.019	4/13/2020	7.08	ND (<0.25)	6.4	110	1,300	ND (<0.50)	14	217	ND (<0.10)	0.05**	0.77	--	0.063	1.0	4/15/2020	2.2		34		
4/19 - 4/25	4/25/2020	ND (<2.5)	1.3	0.020	4/20/2020	6.93	ND (<0.25)	5.6	150	1,200	ND (<0.50)	13	203	ND (<0.10)	0.05**	0.78	--	0.084	1.3	4/22/2020	ND (<2.0)	1.0	16		
4/26 - 5/2	5/2/2020	ND (<2.5)	1.3	0.019	4/27/2020	6.59	ND (<0.25)	3.3	130	860	ND (<0.50)	8.4	129	ND (<0.10)	0.05**	0.77	--	0.074	1.1	4/29/2020	ND (<2.0)	1.0	15		
5/3 - 5/9	5/9/2020	ND (<2.5)	1.3	0.019	5/4/2020	6.98	ND (<0.25)	7.4* 4.0	160	440	ND (<0.50)	5.1	81	--	0.15**	10.1	--	0.083	1.3	5/6/2020	ND (<2.0)	1.0	16	5/7/2020	4,500
5/10 - 5/16	5/16/2020	ND (<2.5)	1.3	0.020	5/11/2020	6.51	ND (<0.25)	6.8	150	690	ND (<0.50)	9.4	146	--	0.14	2.2	--	0.12	1.9	5/13/2020	ND (<2.0)	1.0	16		
5/17 - 5/23	5/23/2020	ND (<2.5)	1.3	0.019	5/18/2020	6.98	ND (<0.25)	4.6	140	600	1.9	6.1	94	--	1.9	29	--	0.20	3.1	5/20/2020	ND (<2.0)	1.0	15		
5/24 - 5/30	5/30/2020	ND (<2.5)	1.3	0.017	5/26/2020	6.98	ND (<0.25)	6.6	120	830	11	14	208	--	0.51	7.6	--	0.22	3.3	5/27/2020	3.3		50		
5/31 - 6/6	6/6/2020	ND (<2.5)	1.3	0.018	6/1/2020	6.80	ND (<0.25)	7.5	110	740	0.58	11	162	--	0.58	8.5	--	0.12	1.8	6/3/2020	2.1		32		
6/7 - 6/13	6/13/2020	ND (<2.5)	1.3	0.018	6/9/2020	6.66	ND (<0.25)	3.8	110	410	ND (<0.50)	4.6	69	--	0.18	2.7	--	0.073	1.1	6/10/2020	ND (<2.0)	1.0	15		
6/14 - 6/20	6/20/2020	ND (<2.5)	1.3	0.019	6/15/2020	6.87	ND (<0.25)	5.3	150	820	1.1	7.8	117	--	0.16	2.4	--	0.013	0.19	6/17/2020	ND (<2.0)	1.0	15		
6/21 - 6/27	6/27/2020	ND (<2.5)	1.3	0.017	6/22/2020	6.92	ND (<0.25)	7.3	160	780	ND (<0.50)	8.4	125	--	0.26	3.9	--	0.12	1.8	6/24/2020	4.0		44		
6/28 - 7/4	7/4/2020	ND (<2.5)	1.3	0.017	6/29/2020	7.01	ND (<0.25)	5.9	99	710	ND (<0.50)	9.9	145	--	0.33	4.8	--	0.12	1.8	7/1/2020	ND (<2.0)	1.0	15		
7/5 - 7/11	7/11/2020	ND (<2.5)	1.3	0.018	7/6/2020	6.98	ND (<0.25)	5.8	87	930	1.6	12	146	--	1.6	20	--	0.25	3.1	7/8/2020	ND (<2.0)	1.0	15		
7/12 - 7/18	7/18/2020	ND (<2.5)	1.3	0.018	7/13/2020	6.49	ND (<0.25)	4.1	120	680	ND (<0.50)	7.2	84	--	0.30	3.5	--	0.089	1.04	7/15/2020	2.5		38		
7/19 - 7/25	7/25/2020	ND (<2.5)	1.3	0.017	7/20/2020	7.10	ND (<0.25)	4.7	110	470	0.51	3.9	60	--	0.51	7.8	--	0.096	1.5	7/22/2020	3.8		59		
7/26 - 8/1	8/1/2020	ND (<2.5)	1.3	0.017	7/27/2020	7.12	ND (<0.25)	ND (<2.5)	150	510	ND (<0.50)	3.2	48	--	0.16	2.4	--	0.150	2.2	7/29/2020	NA		NA		
					8/3/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8/5/2020	NA		NA		

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

* Additional Quarterlv sample collected this week.

** 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)

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

-- = 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: August 7, 2020

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	Replace the 50 hp motor on the turbine and sent the old motor to be rebuilt.
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		3	Pulled and replaced the 3hp motor on ART-7b.
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		4	Changed the oil on the motor.
3.04		*Lift Station 2 Lift Pump B*	Standby			
3.05		*Area in and around Lift Station 2*	Running			
4		**Interceptor Wells and Cr Treatment Plant**				
4.01		*IWF Well Field, 30 wells*	Running		3	Pulled and inspected the piping on I-AD. No faults were found. A new bracket was installed on the discharge piping.
4.02		*Ferrous Sulfate Feed System*	Running			
4.03		*Polymer Feed System*	Running			
4.04		*Clarifier*	In operation			
4.05		*Filter Press*	Running		2	The hydraulic cylinder was rebuilt and a new pump and filter were also installed. The seals were replaced and the airlines. The press is in good working order.
4.06		*GWTP Effluent Tank*	In operation			
4.07		*Interceptor Booster Pump A*	Running		2	The flex coupling was replaced.
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
5.05	PID10A	*Area in and Around EQ*	In operation		2	The actuator for the outfall diversion valve had a failed closed position limit switch. A new actuator was ordered.
5.06	PID10A	*Raw Water Feed Pump - P102A*				
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		4	The gearbox actuator for the SLW flush valve was damaged. A different handle was installed until the new valve is installed.
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		4	The seal water line was replaced.
6.11	PID01A	*First Stage FBR Pump - P1012*				
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
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		4	Replaced the fittings and tubing on the seal water.
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		2	Installed the new swing check valve and the spool piece for the discharge of the pump.

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
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			
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 sand filter was flushed with SLW.
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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		3	A new SLW valve was installed to flush the tank and pumps.
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			
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		2	A new hose connecting the tote to the pump piping was replaced.
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*	In operation			
24	PID07B	*Polymer Systems - DAF*	In operation		3	The east pump was replaced.
25	PID09	*Polymer System - Solids Dewatering (2 tanks, 2 centrifugal pumps, mixer, volumetric feeder)*	In operation			
		Utility Systems				
26		**Compressed Air System**				

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
26.01	PID08	*West Compressor*	Running		2	The contactor was replaced along with the controller. The unit still fails with a ''motor rotation'' fault. The unit is offline.
26.02	PID08	*East Compressor*	Running		2	The contactor was replaced. The unit is in good working order.
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			
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			

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