

То:	Nevada Division of Environmental Protection Nevada Environmental Response Trust
Cc:	Nevada Environmental Response Trust Stakeholders
From:	Michael Del Vecchio, Director Engineering and Project Management
Date:	October 20, 2023
Subject:	NERT – GWETS Operation Monthly Report – September 2023

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 September 2023.

#### Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in September 2023. Flow from PC-118, PC-119, PC-120, PC-121, and PC-133 were routed to the IX system, bypassing all flow meters associated with the FBR plant for the month of September. The flow rate to the IX system averaged approximately 258 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 980 gpm. At the end of the month, the filled GW-11 Pond volume was at 43.5 million gallons (MG), which would allow 13.1 days of available additional storage in the event of a FBR plant shutdown with continued well field pumping. The water volume stored in the GW-11 Pond increased since the end of August 2023; 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 2.9 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 51 mg/L for the month, with a maximum concentration of 53 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of August 2023 averaged 48 mg/L, with a maximum concentration of 52 mg/L.

#### **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. 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 September.

#### 2. Biological Plant

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

#### **Diversion Events / Well Shutdowns**

- Effluent diversion occurred on September 4, 2023 from 4:19am to 5:16am as a precautionary
  measure due to elevated levels of perchlorate in the effluent. Adjustments were made to the
  process and the effluent was returned to the outfall following confirmation via laboratory testing that
  perchlorate was below the effluent guideline. Approximately 60,000 gallons of water were added to
  the GW-11 Pond.
- Influent diversion occurred on September 5, 2023 from 12:02pm to 1:36pm due to a malfunctioning I/O rack. Troubleshooting was conducted, a card on the rack was replaced, and the plant was brought back online. Approximately 99,000 gallons of water were added to the GW-11 Pond.
- Effluent diversion occurred on September 12, 2023 from 12:58am to 3:03am as a precautionary measure due to elevated levels of perchlorate in the effluent. Adjustments were made to the process and the effluent was returned to the outfall following confirmation via laboratory testing that perchlorate was below the effluent guideline. Approximately 118,000 gallons of water were added to the GW-11 Pond.
- Extraction well field shutdown of the SWF occurred on September 12, 2023 from 5:09pm to 6:11pm due to maintenance on the temporary electrical generator at Lift Station 1. Maintenance activities were completed and Lift Station 1 was brought back online.
- Extraction well field shutdown of the AWF occurred on September 19, 2023 intermittently from 12:01am to 11:20am due to malfunctioning profibus connectors at Lift Station 3. Maintenance activities were completed, the profibus connectors were replaced, and Lift Station 3 was brought back online.
- Influent diversion occurred on September 21, 2023 from 9:35am to 3:30pm due to a PLC error. Troubleshooting was conducted, the error was resolved, and the plant was brought back online. Approximately 75,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on September 22, 2023 from 10:30pm to September 23, at 6:15am due to a malfunctioning Influent pump. Troubleshooting was conducted, the pump malfunction was resolved, and the plant was brought back online. Approximately 550,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on September 24, 2023 from 12:05pm to September 25, 2023 at 2:05pm due to a malfunctioning I/O rack and communication card signal. Troubleshooting was conducted,

a malfunctioning card on the rack was replaced, and the plant was brought back online. Approximately 1,640,000 gallons of water were added to the GW-11 Pond.

• Effluent diversion occurred on September 25, 2023 from 2:10pm to 4:39pm as a precautionary measure following an extended unexpected down time. The effluent was returned to the outfall following confirmation via laboratory testing that perchlorate was below the effluent guideline. Approximately 112,000 gallons of water were added to the GW-11 Pond.

#### 3. IX Treatment Plant

During the month of February 2022, flooding conditions were observed adjacent to the SWF as a result of the City of Henderson's (CoH's) use of inactive Birding Ponds 10 through 13. The discharge to these ponds resulted in an increase in groundwater elevation adjacent to the SWF by approximately 5 feet. This increase in groundwater elevation caused flooding adjacent to the SWF extraction wells and within four extraction well vaults. Flooding conditions were observed again in September 2023 as a result of the CoH's use of inactive Birding Ponds 10 through 13 again in August and September 2023. ETI temporarily increased the pumping rate of extraction wells PC-120 and PC-121 to reduce flooding with the well vaults. Additionally, the concentration of perchlorate in shallow groundwater increased again resulting in increased loading to the IX treatment plant during September 2023. Both the groundwater elevation adjacent to the SWF and the perchlorate concentrations in groundwater are elevated and are expected to remain elevated for an extended period as result of CoH's August/September 2023 use of the inactive Birding Ponds assuming no additional significant usage by the CoH occurs.

#### 4. Spills

There were no reportable spills in the Month of September.

#### 5. Maintenance

- Major maintenance performed by ETI in the reporting month included:
  - I. Cleared the injection line for the ethanol pump for FBR 4.
  - II. Installed a new 2 hp motor on PC-120.
  - III. Replaced the profibus connectors on the VFD's at Lift Station 3.
  - IV. Installed a new 0.5 hp motor and fuses on I-AR.
  - V. Installed new tubing and fittings on the Ferrous Sulfate feed pump.
  - VI. Repaired all pumps and motors on the GW-11 pond corners.
  - VII. Repaired the gear on the EQ diversion valve.
  - VIII. Replaced the sludge pump on the North DAF.
  - IX. Completed the installation of the north Effluent Filtration System membrane.
  - X. Rebuilt the media return pump for Separator 4.
- Preventative maintenance performed by ETI in the reporting month included:
  - I. Cleaned and inspected the fire cabinets.
  - II. Changed the filter on the aeration tank blower.

- III. Inspected connections on the MCC buckets.
- IV. Calibrated the turbidity meters.
- V. Greased all rotating equipment.
- VI. Rotated the recycle pumps.
- VII. Actuated valves around the plant for functionality.
- VIII. Tested and verified the level control valves for the separators.
- IX. Verified flows on the IWF extraction wells.
- X. Tested the call-out alarms for the FBR system.

Attachment B contains a summary of all maintenance activities completed during the reporting period.

#### 6. Treatment System Extension

During July 2023, the flow rate to the TSE averaged approximately 51 gpm. The influent perchlorate concentration to the TSE averaged 9.1 mg/L for the month, with a maximum concentration of 9.8 mg/L. In comparison, the influent perchlorate concentration to the TSE for the month of August 2023 averaged 8.7 mg/L, with a maximum concentration of 8.9 mg/L.

#### **Facility Projects**

- 1. Facility Repair/Replacement Items Envirogen and the Trust have finalized a list of facility items to be addressed in connection with Amendment 8 to the O&M Agreement. All work with the exception of the replacement of the DAF have been completed. Specific details on in-progress items are provided below:
  - I. (WA 23-03) Dissolved Air Floatation (DAF) Vessel replacement
    - 1. DAF equipment is on order. The expected delivery is late November 2023.
  - II. Concrete Repair at various locations on FBR pad
    - 1. Scheduling work with selected contractor. Work is anticipated to be completed in December 2023.
- 2. Improved Biological Treatment Plant Efficiency Consistent with Attachment D to the December 2021 GWETS Operation Monthly Report, Envirogen plans to take five FBRs out of service and maintain them in working condition should they be needed in the future. This action will reduce the use of electricity and water and still maintain sufficient treatment capacity to address current groundwater extracted from the IWF, AWF, and the SWF as well as groundwater to be extracted as part of the Unit 4 Source Area In-Situ Bioremediation Treatability Study. FBR A was placed into Offline mode on April 13, 2022. The electrical and mechanical components of the pump skid were inspected and removed when applicable. The removal of the sand media is complete. Final inspection of all internal components is also complete. The remaining FBRs scheduled to be taken out of service will be addressed in the 4<sup>th</sup> quarter of 2023.
- Water Reuse Consistent with the Trust's efforts to reduce its water consumption and acknowledgment of best management practices, accelerated by the Basic Water Company

(BWC) bankruptcy filing, the Trust has actively pursued multiple options to become independent of the BWC water distribution system. To that end, it is the objective of the Trust to replace the water currently distributed by BWC through implementation of an effluent filtration system (EFS) to allow for reuse of the GWETS effluent. The filtered effluent can only be used within treatment operations. The filtration system was delivered to the NERT Site in May 2023 and equipment integration began in June 2023 following receipt of NDEP's approval of the 100 percent design on June 6, 2023. A second identical filtration unit has been delivered the site and integration into the EFS is largely complete. Following integration of the second filtration unit, the two filtration units will be operated in a lead-lag configuration.

### **Tables**

**Operational Metrics** 

#### Table 1 - Flow Rate and Perchlorate and Chromium Concentrations

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics									
Location ID	Average Flow Rate (gpm)	Perchlorate (mg/L) <sup>₄</sup>	Chromium (TR) (mg/L)⁴	Chromium(VI) (mg/L)⁴					
SWF Total Extraction <sup>1</sup>	740 <sup>3</sup>	13	0.0026	0.0015					
AWF Total Extraction <sup>1</sup>	451 <sup>3</sup>	53	0.12	0.13					
IWF Total Extraction <sup>1</sup>	42 <sup>3</sup>	361	5.3	5.6					
AP Area Total Extraction <sup>1</sup>	8.1 <sup>3</sup>	598	0.19	0.21					
Chromium Treatment Subsystem Effluent <sup>2</sup>	56	404	0.84	0.00038					
GW-11 Influent <sup>1</sup>	0.21	30	0.053	0.062					
FBR Influent <sup>2</sup>	980	51	0.092	0.037					
Treatment System Extension Influent <sup>2</sup>	51	9.4	0.20	0.21					

Notes:

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

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

3: Sum of daily average flow for individual wells.

4: All concentrations reported are monthly flow weighted averages.

#### Table 2 - Perchlorate and Chromium Mass Flux

Nevada Environmental Response Tru	ist I Groundwater Extraction and Tre	atment System I Monthly Stakehold	ler Metrics
Location ID	Perchlorate (lbs/month) <sup>1</sup>	Chromium (TR) (lbs/month) <sup>1</sup>	Chromium (VI) (lbs/month) <sup>1</sup>
SWF Total Extraction	2,972	0.58	0.32
AWF Total Extraction	8,612	19	21
IWF Total Extraction	5,425	80	84
AP Area Total Extraction	1,758	0.57	0.61
Chromium Treatment Subsystem Effluent	8,228	17	0.0078
GW-11 Influent	2.3	0.0040	0.0047
FBR Influent <sup>1</sup>	17,962	33	13
Treatment System Extension Influent <sup>1</sup>	173	3.6	3.9

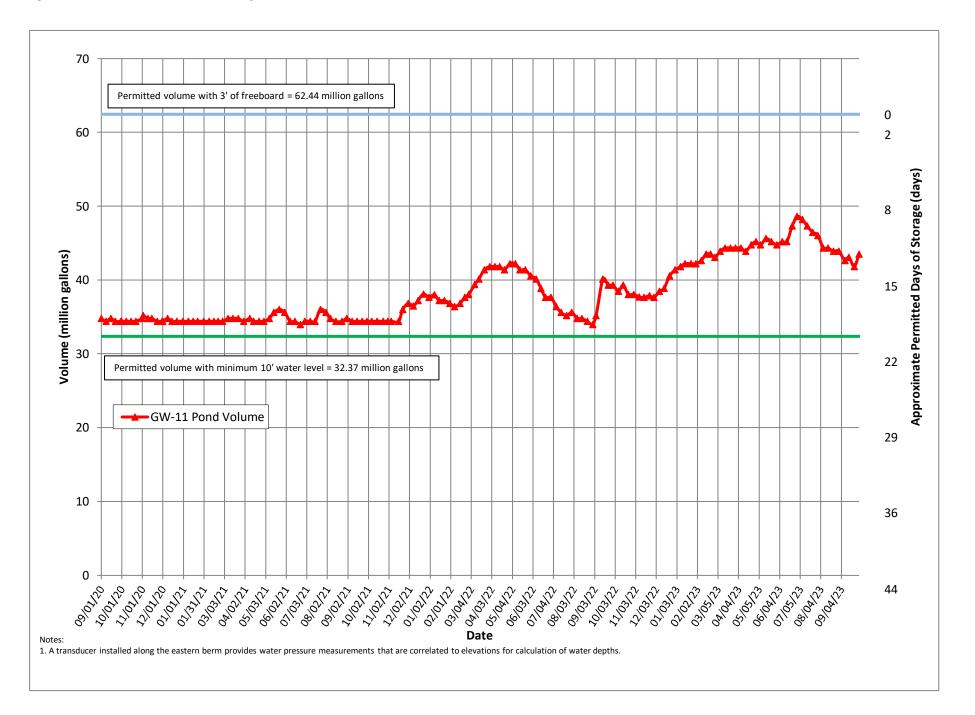
Notes:

TR = Total Recoverable.

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

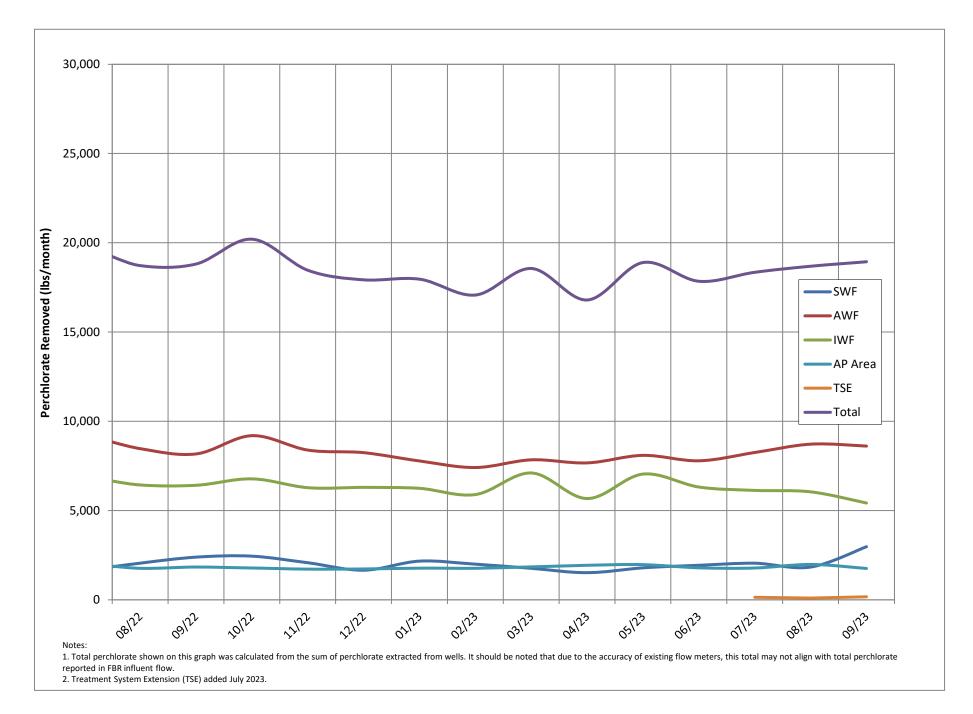
# **Figures**

**Operational Metrics** 



#### Figure 1 - GW-11 Pond Volume Through 09/30/2023





# **Attachment A**

NPDES Tracking Sheet (Prepared by Ramboll)

										Treat	ed Effluent at Out	fall 001												
	Contir	nuous	Daily Samples, co	omposited weekly						iiea	Weekly Grab Sa									Weekly.	collected sep	arately	1	Quarter
	Flow			lorate	1	рН	Hexavalent Chromium	Total Chromium	Manganese	Total Iron	Total Inorganic Nitrogen (TIN)	Total Susper (TS		Total Amn	onia as N	Total Ph	hosphorus	s as P		· · · ·	<b>)D</b> <sub>5</sub> (inhibited)			Total Disso Solids (TI
	30-Day Avg. (MGD)	Daily Maximum (MGD)	30-Day Avg. (µg/L)	30-Day Avg. (Ibs/day)	1	Daily Min. Daily Max. (S.U.) (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)	e 30-Day Avg. (Ibs/day)	30-Day (Ibs/	-		I-Day Avg. Ibs/day)			30-Day Avg. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (Ibs/day)		Daily Ma (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 2023	1.70	1.76	ND (<1.6)	0.011		6.6 6.9	ND (<0.150)	26	390	1,100	0.96	13	190	1.	9		5.1			ND (<5.0)	ND (<5.0)	36		
February 2023	1.69	1.75	1.1	0.015		6.8 7.1	ND (<0.150)	41	340	1,300	1.3	22	310	4.	2		7.2			ND (<5.0)	ND (<5.0)	35		3,900
March 2023	1.67	1.78	2.3	0.033		7.1 7.4	ND (<0.150)	13	320	1,100	1.3	20	270	3.			5.6			ND (<5.0)	ND (<5.0)			
April 2023	1.63	1.75 1.79	1.6	0.022		6.75 7.1	ND (<0.150)	35	390	940	0.82	15 15	200	2.			4.6			ND (<5.0)	ND (<5.0)	34		3,800
May 2023 June 2023	1.68	1.79	ND (<1.6)	0.052		7.0 7.2 6.6 6.6	ND (<0.150) ND (<0.150)	20 9.0	720	1,400 1,300	1.1 0.75	13	220 160	2.			5.7 3.7			ND (<5.0) ND (<5.0)	ND (<5.0) ND (<5.0)	35 34		- 5,800
July 2023	1.67	1.82	1.5	0.021		6.5 7.2	0.177	25	330	1,200	0.67	14	200	1.			5.4			ND (<5.0)	ND (<5.0)	35		
August 2023	1.62	1.96	ND (<1.6)	0.011		6.56 7.12	ND (<0.150)	22	480	1,600	0.71	19	240	1.			6.1			ND (<5.0)	ND (<5.0)	33		4,200
September 2023 (month to date)	1.67	1.85	2.6	0.037		6.97 7.22	ND (<0.150)	8.6	420	1,100	1.1	17	230	0.	)		5.4			ND (<5.0)	ND (<5.0)	36		-
October 2023 (month to date)	1.72	1.77	NA	NA		7.00 7.00	ND (<0.150)	8.1	330	1,000	1.2	15	220	2.	)		NA			ND (<5.0)	ND (<5.0)	37		
	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	L	lbs/day	Sample Date	mg	:/L	lbs/day	Sample Date	mg/L
	1/1 - 1/7	1/7/2023	ND (<1.6) 0.8	3 0.011	1/4/2023	6.6	ND (<0.150)	10	340	830	0.87	ND(<10) 5	70	0	090 1.3		0.43	6.0	1/4/2023	ND (<5.0)	2.5	35		
	1/8 - 1/14	1/14/2023	ND (<1.6) 0.8		1/11/2023	6.8	ND (<0.150)	22	280	690	0.80	10			044 0.63		0.30	4.3	1/11/2023	ND (<5.0)	2.5	36		
	1/15 - 1/21	1/21/2023	ND (<1.6) 0.8		1/18/2023	6.8	ND (<0.150)	15	350	1100	0.80	19			.16 2.3		0.40	5.8	1/18/2023	ND (<5.0)	2.5	36		
	1/22 - 1/28	1/28/2023	ND (<1.6) 0.3		1/25/2023	6.9	ND (<0.150)	26 7.6	390 340	760	0.96	19			.24 3.5 .16 2.3		0.31 0.32	4.5 4.5	1/25/2023	ND (<5.0)	2.5 2.5	36 35		
	1/29 - 2/4 2/5 - 2/11	2/4/2023 2/11/2023	ND (<1.6) 0.8 ND (<1.6) 0.8		2/1/2023 2/8/2023	7.1 6.8	ND (<0.150) ND (<0.150)	41	290	620 1100	0.80	20 24			.10 2.3		0.32	4.5	2/1/2023 2/8/2023	ND (<5.0) ND (<5.0)	2.5	36		
	2/12 - 2/18	2/18/2023	2.0 2.0		2/15/2023	6.8	ND (<0.150)	3.8	280	970	0.75	20			.15 2.1		0.49	6.9	2/15/2023	ND (<5.0)	2.5	35		
	2/19 - 2/25	2/25/2023	ND (<1.6) 0.8		2/22/2023	7.0	ND (<0.150)	25	260	1300	1.3	24			.69 9.6		0.91	12.7	2/22/2023	ND (<5.0)	2.5	35	2/28/2023	3,900
	2/26 - 3/4	3/4/2023	ND (<1.6) 0.8	3 0.012	3/1/2023	7.2	ND (<0.150)	13	320	1100	0.22	12	2 174	C	.20 2.9		0.49	7.1	3/1/2023	ND (<5.0)	2.5	36		
	3/5 - 3/11	3/11/2023	ND (<1.6) 0.8		3/8/2023	7.1	ND (<0.150)	9.5	300	620	1.0	14			.23 3.2		0.30	4.2	3/8/2023	ND (<5.0)	2.5	35		
	3/12 - 3/18	3/18/2023	ND (<1.6) 0.3		3/15/2023	7.2	ND (<0.150)	11	290	860	1.3	22			.33 4.3		0.40	5.2	3/15/2023	ND (<5.0)	2.5	32		
	3/19 - 3/25	3/25/2023	ND (<1.6) 0.8 8.4 8.4		3/22/2023	7.1 7.4	ND (<0.150)	5.3 4.8	240 260	710 620	0.71 1.1	21 29			.18 2.6 .35 5.0		0.33 0.49	4.7 7.0	3/22/2023	ND (<5.0) ND (<5.0)	2.5 2.5	35		
	3/26 - 4/1 4/2 - 4/8	4/1/2023 4/8/2023	ND (<1.6) 0.3		3/29/2023 4/5/2023	6.8	ND (<0.150) <sup>1</sup> ND (<0.150)	0.87	260	210	0.79	29			.16 2.2		0.49	4.5	3/29/2023 4/5/2023	ND (<5.0)	2.5	36 35		
	4/9 - 4/15	4/15/2023	3.9 3.9		4/12/2023	7.0	ND (<0.150)	35	390	540	0.75	10			.17 2.4		0.32	4.5	4/12/2023	ND (<5.0)	2.5	35		
	4/16 - 4/22	4/22/2023	ND (<1.6) 0.8		4/19/2023	6.75	ND (<0.150)	6.6	260	370	0.82	18			.21 2.8		0.30	4.0	4/19/2023	ND (<5.0)	2.5	33		
	4/23 - 4/29	4/29/2023	ND (<1.6) 0.8		4/26/2023	7.1	ND (<0.150)	6.9	290	940	0.82	ND(<10) 5	69		.18 2.5		0.41	5.7	4/26/2023	ND (<5.0)	2.5	35		
	4/30 - 5/6	5/6/2023	ND (<1.6) 0.8		5/3/2023	7.0	ND (<0.150)	4.4	360	280	1.1	15			.34 4.6		0.46	6.3	5/3/2023	ND (<5.0)	2.5	34		
	5/7 - 5/13	5/13/2023	ND (<1.6) 0.8		5/10/2023	7.2	ND (<0.150)	20	280	1400	0.82	33			.12 1.6		0.58	7.9	5/10/2023	ND (<5.0)	2.5	34	F /17 /2022	2.021
	5/14 - 5/20 5/21 - 5/27	5/20/2023 5/27/2023	ND (<1.6) 0.8 ND (<1.6) 0.8		5/17/2023 5/24/2023	7.0 7.1	ND (<0.150) ND (<0.150)	4.8 2.1	240 290	570 470	0.77 0.85	14 10			.17 2.5 .16 2.4		0.34 0.36	5.0 5.3	5/17/2023 5/24/2023	ND (<5.0) ND (<5.0)	2.5 2.5	37 37	5/17/2023	3,800
	5/28 - 6/3	6/3/2023	ND (<1.6) 0.3		5/30/2023	7.16	ND (<0.150) ND (<0.150)	2.1	290 720	300	0.85	10 ND(<10) 5	68		.16 2.4		0.36	5.3 3.9	5/24/2023	ND (<5.0) ND (<5.0)	2.5	34		
	6/4 - 6/10	6/10/2023	ND (<1.6) 0.8		6/7/2023	6.6	ND (<0.150)	5.2	310	680	0.63	13			065 0.9		0.23	3.3	6/7/2023	ND (<5.0)	2.5	35		
	6/11 - 6/17	6/17/2023	ND (<1.6) 0.8		6/14/2023	6.6	ND (<0.150)	6.5	460	600	0.75	10		0	.28 3.5		0.31	3.9	6/14/2023	ND (<5.0)	2.5	32		
	6/18 - 6/24	6/24/2023	ND (<1.6) 0.8		6/21/2023	6.6	ND (<0.150)	4.0	450	480	0.59	11			.15 2.1		0.19	2.6	6/21/2023	ND (<5.0)	2.5	34		
	6/25 - 7/1	7/1/2023	ND (<1.6) 0.8		6/28/2023	6.6	ND (<0.150)	9.0	380	1300	0.50	13		-	061 0.8		0.37	4.8	6/28/2023	ND (<5.0)	2.5	33		
	7/2 - 7/8	7/8/2023 7/15/2023	ND (<1.6) 0.8 ND (<1.6) 0.8		7/5/2023 7/13/2023	6.5 7.2	ND (<0.150) 0.177	10 25	300 330	1200 1000	0.67 0.42	14 22			.16 2.1 .10 1.3		0.40 0.36	5.2 4.8	7/5/2023	ND (<5.0) ND (<5.0)	2.5 2.5	32 34		
	7/9 - 7/15 7/16 - 7/22	7/22/2023	ND (<1.6) 0.8 3.5 3.1		7/19/2023	6.7	ND (<0.150)	1.2	260	520	0.42	22 ND(<10) 5			0195 0.3		0.38	4.8	7/13/2023 7/19/2023		2.5	34 36		
	7/23 - 7/29	7/29/2023	ND (<1.6) 0.8		7/27/2023	6.87	ND (<0.150)	11	260	250	0.61	16			.23 3.3		0.52	7.6	7/27/2023	ND (<5.0)	2.5	36		
	7/30 - 8/5	8/5/2023	ND (<1.6) 0.8		8/2/2023	6.93	ND (<0.150)	14	390	880	0.34	20			071 1.1		0.78	11.7	8/2/2023	ND (<5.0)	2.5	38		
	8/6 - 8/12	8/12/2023	ND (<1.6) 0.8		8/9/2023	7.12	ND (<0.150)	22	430	800	0.42	12	168		058 0.8		0.23	3.2	8/9/2023	ND (<5.0)	2.5	35		
	8/13 - 8/19	8/19/2023	ND (<1.6) 0.8		8/16/2023	6.56	ND (<0.150)	10	230	1300	0.50	28		C	.11 0.8		0.11	0.8	8/16/2023	ND (<5.0)	2.5	18	8/16/2023	4,200
	8/20 - 8/16	8/26/2023	ND (<1.6) 0.8		8/23/2023	7.08	ND (<0.150) <sup>2</sup>	13	480	1600	0.54	20			.14 2.1		0.55	8.1	8/23/2023	ND (<5.0)	2.5	37		
	8/27 - 9/2	9/2/2023	ND (<1.6) 0.8		8/30/2023	6.98	ND (<0.150)	10	480	1100	0.71	15			.27 4.1		0.43	6.6	8/30/2023	ND (<5.0)	2.5	38		
	9/3 - 9/9	9/9/2023	ND (<1.6) 0.8		9/6/2023	6.97	ND (<0.150)	4.6	420	1100	0.73	11			.11 1.7		0.22	3.4	9/6/2023	ND (<5.0)	2.5	39		
	9/10 - 9/16 9/17 - 9/23	9/16/2023	6.1 6.1		9/13/2023	7.08	ND (<0.150)	8.6 4.2	340	1100	0.71	16			054 0.78		0.41	5.9	9/13/2023	ND (<5.0) ND (<5.0)	2.5 2.5	36 38		
	9/17 - 9/23 9/24 - 9/30	9/23/2023 9/30/2023	ND (<1.6) 0.8 NA NA		9/20/2023 9/27/2023	7.22 7.18	ND (<0.150) ND (<0.150)	4.2 ND (<4.3)	340 360	930 820	1.1 0.93	14 25			053 0.81 0195 0.25		0.24 0.68	3.7 8.8	9/20/2023 9/27/2023	ND (<5.0) ND (<5.0)	2.5	38 32		
	10/1 - 10/7	10/7/2023	NA NA		10/4/2023		ND (<0.150)	8.1	330	1000	1.2	15		· · ·	.14 2.0	NA	0.68 NA	NA	10/4/2023		2.5	32		<b> </b>

Note: Analytical responsibilities are performed by Eurofins Environment Testing (Eurofins) in Phoenix, Arizona, and hexavalent chromium is analyzed by Pace Analytical (Pace) in Las Vegas, Nevada, unless otherwise indicated.

<sup>+</sup> Additional samples were collected this week.

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)

NS = Not Sampled or Not Analyzed

-- = 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.

<sup>1</sup> Pace Hexavalent Chromium sample taken 03/31/2023; original sample taken 03/29/2023 (L1599378) went over hold time and needed resampling.

<sup>2</sup> Pace Hexavalent Chromium sample taken 08/24/2023; original sample taken 08/23/2023 (L1648967) needed resampling.

Last Updated: October 13, 2023

#### WORKING TRACKING SPREADSHEET DRAFT - NOT TO BE SUBMITTED TO AGENCY

## **Attachment B**

Equipment Tracking Form

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
		Main Plant Equipment				
1		Seep Wells and Lift Station 1				
1.01		Seep Well Field, 9 wells	Running		2	Replaced the fuses on PC-120 and PC-121. Replaced the motor on PC-120.
1.02		Lift Station 1 Lift Pump A	Running			
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		2	Replaced the profibus connectors on the VFD's.
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			
4		Interceptor Wells and Cr Treatment Plant				
4.01		IWF Well Field, 30 wells	Running		2	Replaced the motor and fuses on I-AR
4.02		Ferrous Sulfate Feed System	Running		3	New tubing was installed on the pump.
4.03		Polymer Feed System	Running			
4.04		Clarifier	In operation			
4.05		Filter Press	Running			
4.06		GWTP Effluent Tank	In operation			
4.07		Interceptor Booster Pump A	Running		2	Opened and cleaned the volute of the pump and cleared debris from the impeller.
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		3	Pulled, inspected, and replaced all necessary equipment for the pond corners.
5.02	PID10A	Pond Water Pump - P101A	Running			
5.03	PID10A					
5.04	PID10A					
5.05	PID10A				3	Repaired the gear on the diversion actuator.
5.06	PID10A					
5.07	PID10A	Raw Water Feed Pump - P102B				

Running - Unit is in operation

Standby - Spare or duplicate, not currently in operation

Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place

 Maintenance - Out of service for maintenance
 3 = N

 Off - Not currently needed for use, but can be placed in service
 4 = L

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
5.08	PID10A	F-101 Filters	Running			
5.09	PID10B	Carbon Absorber - LGAC 201A				
5.10	PID10B	Carbon Absorber - LGAC 201B				
5.11	PID10B	Carbon Absorber - LGAC 201C				
6		First Stage FBRs A, 1 & 2				
6.01	PID14	FBR A				EQUIPMENT OFFLINE
6.02	PID14	Separator Tank - 1401				EQUIPMENT OFFLINE
6.03	PID14	Media Return Pump - P 1401				EQUIPMENT OFFLINE
6.04	PID14	P1401A				EQUIPMENT OFFLINE
6.05	PID01A	P1401B				EQUIPMENT OFFLINE
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				
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					
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			Equipment offline
6.20	PID15	FBR 1 Nutrient (Phos Acid) Feed Pump - P1521	Running			
6.21	PID15	, , ,				
6.22	PID07B					
6.23	PID07B					
6.24	PID07B	FBR 2 Electron Donor Assembly Pump - P732	Running			
7		First Stage FBRs 3 & 4				
7.01	PID01B		Running		3	Inspected and cleared the lines on the INF flowmeter.
7.02	PID01B		Running			
7.03	PID02B	ş ;	-		3	Installed a new positioner on the actuator.
7.04	PID01B		0			
7.05	PID01B					
7.06	PID01B	° 1				
7.07	PID01B		v			
7.08	PID07A	FBR 3 pH Feed Pump - P713	Running			

Running - Unit is in operation

Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place

Maintenance - Out of service for maintenance Off - Not currently needed for use, but can be placed in service

Standby - Spare or duplicate, not currently in operation

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
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		3	Cleared the check valve at the injection point on the piping.
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	1	U U			
8.05	PID03A	Second Stage FBR Pump - P3015	-			
8.06	PID03A	Second Stage FBR Pump - P3016				
8.07	PID03A	Second Stage FBR Pump - P301A	, v			
8.08	PID07A					
8.09	PID07A	FBR 6 pH Feed Pump - P716	Off			
8.1	PID07A					
8.11	PID07A					
8.12	PID07B		-			
8.13	PID07B		Running			
9		Second Stage FBRs 7 & 8				
9.01	PID03B	FBR 7	Running			
9.02	PID03B		Running			
9.03	PID03D	9 I	-			
9.04	PID03B					
9.05	PID03B					
9.06	PID03B	<b>,</b>				
9.07	PID03B	ş i				
9.08	PID07A					
9.09	PID07A					
9.10	PID07A					
9.11	PID07A					
9.12	PID07B		-			
9.13	PID07B		Running			
10		Aeration and DAF System				
10.01	PID04					
10.02	PID04	Aeration Blower - B401	Running			

Running - Unit is in operation

Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

 Standby - Spare or duplicate, not currently in operation
 2

 Maintenance - Out of service for maintenance
 3

 Off - Not currently needed for use, but can be placed in service
 4

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
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					
10.15	PID05	DAF Pressure Pump - P551	Running			
10.16	PID05				2	Replaced the pump and installed a new clack flap.
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		Running			
11.03	PID06					
12		Sand Filter System				
12.01	PID17					
12.02	PID17					
12.03	PID17	······································				
12.04	PID17	Filter Reject Pump - P1701B	Running			
13		Effluent Tank and Pumping				
13.01	PID10C		0			
13.02	PID10C					
13.03	PID10C					
13.04	PID10C		Running		4	Ongoing installation of the UF membrane system.
14		Solids Collection and Pressing System				
14.01	PID16					
14.02	PID16					
14.03	PID16					
14.04	PID09		-			
14.05	PID09		Running			
14.06	PID09				3	Cleaned out the air ends on the pumps.
14.07	PID09					
14.08	PID09	East Press	Running			

Running - Unit is in operation

Standby - Spare or duplicate, not currently in operation

Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

 Maintenance - Out of service for maintenance
 3 = Moderate - Wo

 Off - Not currently needed for use, but can be placed in service
 4 = Low - Minor re

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
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	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			
26.03	PID08		-			
26.04	PID08					
26.05	PID08		-			
26.06	PID08					
26.07	PID08					
27	PID16	- 757				
28		GWETS Plant Controls/ Siemens Controls	•			
29		Well Control System/ Allen Bradley Controls				
30		MCC FBR Pad				
31		MCC in D-1				
32		MCC in EQ area	In operation			
		Miscellaneous Systems				
33		Operations Office/Network	In operation			

Running - Unit is in operation

Standby - Spare or duplicate, not currently in operation

Off - Not currently needed for use, but can be placed in service

Maintenance - Out of service for maintenance

Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place

Sub- System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
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			

Running - Unit is in operation Standby - Spare or duplicate, not currently in operation Maintenance - Out of service for maintenance Off - Not currently needed for use, but can be placed in service Criticality Codes

1= Critical - Cannot continue with operation until repairs made

2 = Important - Can still operate safely and in compliance with permits, but risks are increased

3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place