pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

000000Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254771**
Facility Type	**Industrial**	APS ID	**1004977**
Major / Minor	**Major**	Authorization ID	**1294159**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Tenaska PA Partners LLC**	Facility Name	**Tenaska Westmoreland Generating Station**
Applicant Address	14302 FNB Parkway	Facility Address	446 Smithton Pike
	Omaha, NE 68154		Smithton, PA 15479
Applicant Contact	Todd Jonas	Facility Contact	Robert Mayfield
Applicant Phone	402 – 691 – 9500	Facility Phone	724 – 405 - 6300
Client ID	270882	Site ID	718112
SIC Code	4911	Municipality	South Huntingdon Township
SIC Description	Trans. & Utilities - Electric Services	County	Westmoreland
Date Application Received	October 30, 2019	EPA Waived?	No
Date Application Accepted	October 31, 2019	If No, Reason	Major Facility <250 MGD

Purpose of Application: Renewal of NPDES Permit Major Facility <250 MGD with ELG.

Summary of Review

On September 5, 2019, Tenaska Pennsylvania Partners, LLC (Tenaska) and the Department discussed the NPDES Permit renewal for Tenaska Westmoreland Generating Station, PA0254771. Tenaska is requesting changes to the NPDES permit monitoring and reporting requirements in its permit renewal application.

On October 30, 2019, the Department received an NPDES Individual Wastewater Permit Renewal Application from Tenaska for the Tenaska Westmoreland Generating Station located in South Huntingdon Township, Westmoreland County. The facility is a steam electric power generation station, which is classified by SIC Code 4911 and is subject to the Federal Effluent Guideline for Steam Electric Power Generation (steam electric ELG) 40 CFR 423. The initial NPDES permit effective May 1, 2015, was issued prior to commencement of construction of the Tenaska facility. Construction of the facility commenced January 2016. Tenaska discharges cooling tower blowdown (1.2 MGD) and low volume wastewater (0.13248 MGD), wich are subject to the steam electric ELG, in addition to stormwater associated with industrial activity and uncontaminated stormwater.

There are nine (9) total outfalls from the facility identified in the NOI application. Outfall 001 discharges cooling tower blowdown (IMP 101), low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater (IMP 201) and stormwater associated with industrial activity. The stormwater exposed to industrial activities is collected and conveyed to the Flow Equalization Basin (EQB), where it is manually discharged via Outfall 001. Outfalls 002-009 discharge uncontaminated stormwater. These outfall discharges are uncontaminated due to site grading and a separate stormwater collection/conveyance system directing the stormwater to various detention basins for controlled discharge.

Approve	Deny	Signatures	Date
X		Curtis Holes, P.E. / Environmental Engineering Specialist	August 12, 2020
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	September 9, 2020

Summary of Review

The EQB is designed for a 100-yr 24-hr storm event. The facility is transitioning from the trigger for the manual discharge of the EQB being storage capacity to after storm events. The volume of storm water will have to be such to allow the pump to operate in a normal operating range and duration. This should also remedy the Department's concerns regarding the infrequent batch discharge of stagnant, low D.O. stormwater.

Review of uncontaminated stormwater Outfalls 003, 005 and 007, reveals that these outfalls are emergency spillways of detention ponds. The detention pond discharge location identified as an Outfall is the principle spillway, which are identified as Outfalls 002, 004 and 006 respectively. The three (3) emergency spillway Outfalls (003, 005 and 007) will be removed.

Since the initial permit for the facility was issued prior to construction, the NPDES permit application contained estimates for anticipated potential pollutant concentrations to be contained in the facility's discharge. All of Tenaska's other Generating Stations use surface water as the NCCW source water. The Tenaska Westmoreland Generating Station uses Public Water Supply for the NCCW source water. For this reason, the potential pollutant estimates contained in the initial permit application were higher concentrations than the current operational data and permit renewal application data.

The permit renewal application contained a narrative describing "General Information Addendum", which details proposed changes to monitoring requirements for the facility. The six (6) requested monitoring changes are listed below:

Tenaska Pennsylvania Partners, LLC (TPP) conferred with Pennsylvania Department of Environmental Protection (PA DEP) on September 5, 2019. At that time, TPP and PA DEP agreed that the NPDES permit application materials were not suitable to allow applicants a means to propose changes to permit monitoring and reporting requirements. TPP and PA DEP further agreed that, at the time TPP submitted its NPDES permit renewal application, TPP would propose its suggested changes in a narrative format. TPP offers the following and appreciates the opportunity to further discuss with PA DEP, if necessary:

1. ***Cooling Tower Chlorination: Continued Waiver of the 2-Hour Chlorination Limitation***

TPP requests that PA DEP continue the waiver of the 2-hour per day limit for chlorinating the cooling tower. This request will not impact water quality.

On August 6, 2019, PA DEP granted TPP a waiver to the 2-hour limit for chlorinating the cooling tower. As PA DEP described in this waiver, TPP is able to operate the cooling tower by reducing the overall quantity of chlorine (sodium hypochlorite) added to the cooling tower and reducing the chlorine concentration in the cooling tower while providing adequate macroinvertebrate control. Consequently, TPP is able to reduce the overall amount of sodium bisulfite used to dechlorinate cooling tower blowdown prior to discharge from Outfall 101.

As discussed in the Development of Effluent Limitations for Outfall 101, the 2-hour limit for chlorinating the cooling tower is waived by the Department.

2. ***Outfall 001: Temperature***

(a) TPP requests a reduction of the reporting requirements for temperature data. This request will not reduce the monitoring requirements and will not impact water quality.

The current permit requires weekly temperature in situ monitoring. However, due to the nature of in situ monitoring, TWGS measures the discharge temperature daily, 24-hours per day. Therefore, in accordance with Part 111.8.6. of the permit, TWGS is required to report the maximum temperature on a daily basis.

TPP would appreciate the opportunity to further discuss with PA DEP.

(b) TPP requests the removal of the 110°F permit limit. This request will not impact water quality.

The current permit includes an instantaneous maximum temperature limit of 110°F. According to the Fact Sheet dated March 6, 2014, the 110°F permit limit is based solely on the public safety guideline established in the PA DEP's implementation Guidance For Temperature Criteria (2009). The Fact Sheet also states that, based on the small discharge rate (from Outfall 001) in comparison to the Youghiogheny River that ".. high discharge temperatures are theoretically allowable based on the mass balance calculation." Since beginning to discharge wastewater in August 2018, temperature data from TWGS regularly measures less than 100°F.

Summary of Review

Several other issues concerning the 110°F temperature limit as prescribed by PA DEP's guidance document:

• *The disclaimer in the guidance document states that "The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference." However, the 110°F instantaneous maximum is described in the Fact Sheet as a technology based effluent limit. Therefore, the 110°F instantaneous maximum prescribed in the permit is given the weight and deference of an effluent limitation prescribed in either a state or federal regulation.*

On October 9, 2019, President Trump issued Executive Order 13891 (published in the Federal Register on October 15, 2019, 84 FR 55235) titled "Promoting the Rule of Law Through Improved Agency guidance Documents". The intent of this executive order is to limit agencies from using policies in guidance documents to be as binding as regulations. Although this executive order may not directly apply to a state guidance document, PA DEP's Implementation Guidance For Temperature Criteria (2009) is being applied to the NPDES permit program authorized by EPA, a federal agency.

• *The guidance document also states that [i]in order to protect public safety, temperature-based permit limits for discharges to waters of the Commonwealth may not exceed 110°F at any point accessible to the public." The guidance document does not, however, provide any explanation, description, or definition as to the determination that a 110°F temperature limit "protect[s] public safety" or" ... at any point accessible to the general public."*

TPP's wastewater discharge pipe 'daylights' approximately 10-15 feet up a steep bank from the water's edge and then cascades down the bank via a rock dissipator prior to actually entering the Youghiogheny River. This entire area is on private property; any accessibility by the general public would be trespassing. TPP believes that the intent of at any point accessible to the general public" implies when a discharge pipe is at the water's edge or in the waterbody where the general public could come into direct contact with the discharge water.

Refer to the Development of Effluent Limitations for Outfall 001 for the development of the technology-based thermal effluent limit 110.0°F and the required daily monitoring frequency. The flowrate of the NCCW discharge greater than 100,000 gallons per day requires daily monitoring frequency.

3. Outfall 001: pH

TPP requests that pH monitoring be reduced from daily to once per week. This request will not impact water quality.

The current permit requires daily pH monitoring and monthly reporting. TPP obtains potable water from the Municipal Authority of Westmoreland County (MAWC) for all processes. The majority of the wastewater discharged at Outfall 001 is cooling tower blowdown from Outfall 101, which consists of cycled (concentrated) potable water and cooling tower maintenance chemicals. Based on the water source and the chemistry parameters required to maintain proper cooling tower operation, the constituents in the discharge remain consistent during operation.

If necessary, pH adjustment of the cooling tower blowdown is conducted at Outfall 101 to meet the 40 CFR 423.15(a) federal effluent pH guidelines prior to discharge to Outfall 001. Therefore, wastewater does not discharge from Outfall 101 unless the pH of this wastewater is between 6 and 9.

Refer to the Development of Effluent Limitations for Outfall 001 for the development of the effluent limit for pH and the required daily monitoring frequency. The flowrate of the NCCW discharge greater than 100,000 gallons per day requires daily monitoring frequency.

4. ***Outfall 001: Total Residual Chlorine***

TPP requests the removal of total residual chlorine (TRC) monitoring and reporting requirements. This request will not impact water quality.

The initial draft permit included a 0.5 mg/L TRC limit at Outfall 001. In the Fact Sheet issued on June 20, 2014, PA DEP agreed with TPP in that a Free Available Chlorine (FAC) limit at Outfall 101 based on the 40 CFR 423 steam electric federal effluent guidelines did not warrant a TRC limit at Outfall 001. In the current permit, PA DEP removed

Summary of Review

the weekly monitoring and the 0.5 mg/L TRC limit but required twice monthly monitoring and reporting of monthly average and maximum values. DMR data since TWGS began discharging wastewater in August 2018 indicate that TRC values are consistently below detection.

If necessary, sodium bisulfite is added to the cooling tower blowdown at Outfall 101 to meet the 40 CFR 423.15(a) federal effluent FAC guidelines prior to discharge to Outfall 001. Therefore, wastewater does not discharge from Outfall 101 unless the FAC of this wastewater is less than 0.2 mg/L. This guarantees that TPP does not exceed the monthly average FAC limit at Outfall 101.

As noted in Item 3, above, based on the water source and the chemistry parameters required to maintain proper cooling tower operation, the constituents in the discharge remain consistent during operation. Also, with the 2-hour chlorination waiver for chlorinating the cooling tower, TPP is able to reduce the chlorine concentration in the cooling tower. Therefore, additional monitoring for TRC at Outfall 001 will likely result in substantially similar data collected to date.

Refer to the Development of Effluent Limitations for Outfall 001 for the development of the technology-based effluent limit for TRC.

5. Outfall 001: Sulfate, Chloride, and Bromide

TPP requests the removal of the sulfate, chloride, and bromide weekly monitoring and monthly reporting requirements. This request will not impact water quality.

According to the Fact Sheet dated March 6, 2014, sulfate, chloride, and bromide monitoring, as major constituents of total dissolved solids (TDS), are required as a monitoring initiative to collect this data. TWGS began discharging wastewater in August 2018; over the past 14 months, TPP has collected over 55 weeks of monitoring data for sulfate, chloride, and bromide:

- *As noted in Item 3, above, based on the water source and the chemistry parameters required to maintain proper cooling tower operation, the constituents in the discharge remain consistent during operation. Therefore, ongoing monitoring for sulfate, chloride, and bromide will likely result in substantially similar data collected to date.*

- *Sulfate and Chloride: Weekly monitoring for these constituents generally indicates that as TDS results increase or decrease over time, so do the results for sulfate and chloride.*

- *Bromide: TPP does not use any chemicals that contain bromide. Weekly monitoring results are consistently below detectable limits (<0.60 mg/l to <2.50 mg/L).*

Refer to the Development of Effluent Limitations for Outfall 001 for the Water-Quality Base Limitations evaluation for parameters sulfate, chloride and bromide.

6. Outfall 001: Lead and Hexavalent Chromium

TPP requests the removal of the lead and hexavalent chromium weekly monitoring and monthly reporting requirements. This request will not impact water quality.

- *Lead: According to the Fact Sheet dated March 6, 2014, PENTOXSD modeling was conducted for total lead. The modeling analysis indicated that water quality-based effluent limitations were not required and the initial draft permit did not include lead monitoring or reporting.*

The Fact Sheet associated with the final issuance of the permit dated April 6, 2015, again confirmed that water quality-based effluent limitations were not required for lead. PA DEP modeled a 0.1 mg/L concentration of lead, which did not trigger water quality-based effluent limits. No explanation was provided as to why lead monitoring and reporting was incorporated into the final permit.

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TPP does not use chemicals that contain lead. Weekly monitoring results for over 55 weeks have all been below detectable limits (<0.001 mg/L to <0.005 mg/L). Therefore, as previously explained, any ongoing monitoring will likely result in substantially similar data collected to date.

• Hexavalent Chromium: The initial draft permit issued in March 2014 did not include hexavalent chromium monitoring or reporting.

According to the Fact Sheet associated with the final issuance of the permit dated April 6, 2015, water quality based effluent limitations were not required for hexavalent chromium based on modeling at the 0.1 mg/L concentration. Also, the Fact Sheet stated that cooling tower maintenance chemicals to be used at TWGS would not contain chromium or hexavalent chromium. No explanation was provided as to why hexavalent chromium monitoring and reporting was incorporated into the final permit.

TPP does not use chemicals that contain chromium or hexavalent chromium. Weekly monitoring results for over 55 weeks are either extremely low or below detectable limits (<0.01 mg/L). Therefore, as previously explained, any ongoing monitoring will likely result in substantially similar data collected to date.

Refer to the Development of Effluent Limitations for Outfall 001 for the Water-Quality Base Limitations evaluation using actual monitoring data for lead and hexavalent chromium, which has removed these two parameters from being pollutants of concern.

On February 26, 2020, the Department conducted a site visit. Attendees of the site visit were Mike Fifth, Jim Stewart and Curt Holes of the Department and Patty Greene, Ryan Jobe, Robert Mayfield and John Robson of Tenaska.

On April 24, 2020, the Department received additional information as requested by the Department. A summary of the additional information is provided below.

- New sampling data for Outfalls 101 and 201 along with updated application forms pertaining to the outfalls.

- Activities that were discharging from Outfall 001 Effluent Analysis contained in the NPDES Renewal Application: all process activities depicted on the "TWGS Schematic of Process Flows and Effluent Streams" were in normal/typical operation at the time of sampling for this analysis. Outfalls 101 and 201 were discharging commensurate to normal/typical operations. Stormwater from the Flow Equalization Basin was not discharging.

- And finally, see the attached titled "TWGS ELGs Outfalls 101 and 201 (Page 7) April 2020": The initial NPDES permit (issued April 6, 2015; effective May 1, 2015) was issued under 40 CFR §423.15, the 1982 New Source Performance Standards (NSPS) for direct dischargers. Prior to TPP commencing construction of any discharge sources, EPA promulgated the 2015 NSPS for steam electric direct and indirect dischargers on November 3, 2015. Therefore, TWGS is a 'new source' as defined by 40 CFR §122.2 subject to the 2015 NSPS. TPP is providing updated forms which reference the applicable 40 CFR §423.15 2015 NSPS regulatory citations. Promulgation of the 2015 NSPS did not subject TWGS to new or additional 40 CFR §423 requirements.

The client has no open violations.

Residual waste disposal must meet solid waste regulations.

Part C language in the draft permit provides controls on floating solids, chemical additives, residual solids, stormwater requirements and Total Residual Chlorine.

It is recommended that a draft permit be published for public comment in response to this application.

<u>Public Participation</u>

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request

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or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Compliance History	
Summary of DMRs:	Three (3) noted effluent violations: Outfall 101 on 09/28/18 – Total Zinc monitored at 2.4 mg/L with limit of 1.0 mg/L; Outfall 001 on 11/27/18 – pH at 9.25 S.U. with limit of 9.0 S.U.; Outfall 201 on 11/27/18 – pH at 9.36 S.U. with limit of 9.0 S.U.
Summary of Inspections:	The last inspection conducted by the Department was on February 26, 2020 by Jim Stewart, Mike Fifth and Curt Holes with no violations identified.

Other Comments: None

Compliance History

DMR Data for Outfall 001 (from June 1, 2019 to May 31, 2020)

Parameter	Limit	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Flow (MGD) Avg. Mthly.	Report	0.3185	0.2730	0.4110	0.3530	0.3278	0.3452	0.1924	0.3855	0.4947	0.5179	0.4860	0.4344
Flow (MGD) Daily Max	Report	0.5435	0.5548	0.5985	0.5712	0.4505	0.5002	0.3532	0.6916	0.6604	0.7122	0.7505	0.5848
pH (S.U.) Min	6.0	6.70	6.89	6.13	6.98	7.34	6.83	6.67	7.54	6.83	6.83	7.22	7.53
pH (S.U.) Max	9.0	8.23	7.98	8.29	8.32	8.21	8.11	8.30	8.46	8.47	8.31	8.30	8.36
TRC (mg/L) Avg. Mthly.	Report	< 0.02	< 0.02	< 0.02	< 0.02	< 0.15	0.29	< 0.13	< 0.02	< 0.02	< 0.06	< 0.06	< 0.06
Temp. (ºF) Max	110.0	86.1	82.7	84.1	80.6	89.5	85.1	86.5	90.8	90.9	90.5	91.2	91.6
TDS (lbs/day) Avg. Mthly.	Report	1927	1748	3743	2580	2479	2441	883	4082	3984	4415	4041	3444
TDS (lbs/day) Daily Max	Report	3319	3329	4179	3695	3669	3518	2143	6965	5261	5052	6791	4456
TDS (mg/L) Avg. Mthly.	2,000	889	704	1021	910	882	930	646	898	929	991	1016	950
TDS (mg/L) Daily Max	4,000	1070	1060	1080	1060	1500	1160	1030	1210	1020	1080	1120	1090
Hexavalent Chromium (mg/L) Avg. Mthly.	Report	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.0100	< 0.0100
Hexavalent Chromium (mg/L) Daily Max	Report	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.0100	< 0.0100
Total Lead (mg/L) Avg. Mthly.	Report	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Total Lead (mg/L) Daily Max	Report	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Sulfate (lbs/day) Avg. Mthly.	Report	820	< 430	1130	761	588.7	760.2	< 426.2	1716.7	1372	1354.7	1366.9	1342.8
Sulfate (lbs/day) Daily Max	Report	1993	762	1476	833	1392	1536	786	2756	1715	1825	2091	2534
Sulfate (mg/L) Avg. Mthly.	Report	277	< 233	307	259	215	266	< 184.1	387.2	343	318.0	309.0	385.8
Sulfate (mg/L) Daily Max	Report	457	< 300	332	300	410	430	302	566	399	397	348	671
Chloride (lbs/day) Avg. Mthly.	Report	608	223	828	609	556	519.7	234	657.9	752	744.3	833.7	534.5
Chloride (lbs/day) Daily Maximum	Report	1186	721	846	942	991	925	451	950	1081	1003	1296	884
Chloride (mg/L) Avg. Mthly.	Report	225	120	233	204	210	183	98.7	148.9	189	173.0	187.6	155.1
Chloride (mg/L) Daily Max	Report	280	249	272	288	341	259	153	195	231	205	207	237

DMR Data for Outfall 001 (from June 1, 2019 to May 31, 2020) cont.

Parameter	Limit	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Bromide (lbs/day) Avg. Mthly.	Report	< 1.3	< 0.9	< 1.8	< 1.5	< 2.7	< 1.2	< 1.0	< 4.4	< 3.9	< 3.9	< 2.2	< 3.5
Bromide (lbs/day) Daily Max	Report	< 2.2	< 1.4	< 2.2	< 1.6	< 8.5	< 1.8	< 1.5	< 13.9	< 7.0	< 9.1	< 3.1	< 9.3
Bromide (mg/L) Avg. Mthly.	Report	< 0.50	< 0.50	< 0.5	< 0.50	< 0.90	< 0.50	< 0.54	< 0.90	< 1.13	< 1.00	< 0.50	< 1.00
Bromide (mg/L) Daily Max	Report	< 0.50	< 0.50	< 0.5	< 0.50	< 2.50	< 0.50	0.65	< 2.50	< 2.50	< 2.50	< 0.50	< 2.50

DMR Data for Outfall 101 (from June 1, 2019 to May 31, 2020)

Parameter	Limit	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
pH (S.U.) Min	6.0	7.03	6.93	7.89	7.69	7.83	7.10	7.46	7.96	7.86	7.76	7.45	8.16
pH (S.U.) Max	9.0	8.38	8.02	8.14	8.17	8.12	8.10	8.12	8.48	8.42	8.38	8.25	8.31
Free Available Chlorine (mg/L) Avg. Mthly.	0.2	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.03	< 0.02	< 0.02	< 0.06	< 0.06	< 0.06
Free Available Chlorine (mg/L) IMAX	0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.07	0.04	< 0.02	< 0.02	< 0.06	< 0.06	0.07
Total Chromium (mg/L) Avg. Mthly.	0.2	< 0.007	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.0066	< 0.005
Total Chromium (mg/L) Daily Max	0.2	0.011	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.0130	< 0.005
Total Zinc (mg/L) Avg. Mthly.	1.0	< 0.012	0.027	0.014	0.015	< 0.010	< 0.013	0.065	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Total Zinc (mg/L) Daily Max	1.0	0.017	0.043	0.016	0.017	0.011	0.021	0.150	0.016	< 0.010	0.014	< 0.010	< 0.010

DMR Data for Outfall 201 (from June 1, 2019 to May 31, 2020)

Parameter	Limit	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
pH (S.U.) Min	6.0	7.24	7.14	7.46	7.64	7.38	7.53	7.69	7.56	7.34	7.27	7.30	7.30
pH (S.U.) Max	9.0	7.80	7.60	7.76	8.60	7.82	7.73	7.79	8.32	7.46	7.40	8.33	7.62
TSS (mg/L) Avg. Mthly.	30.0	< 4.0	< 4.2	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.5	< 4.4	< 4.0
TSS (mg/L) Daily Max	100.0	< 4.0	5.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	6.0	6.0	4.0
Oil and Grease (mg/L) Avg. Mthly.	15.0	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.9
Oil and Grease (mg/L) Daily Max	20.0	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	5.1

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.6
Latitude	40º 09' 40.09"	Longitude	-79º 45' 27.72"
Quad Name	Donora	Quad Code	1707
Wastewater Description:	Cooling tower blowdown, low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater, along with stormwater associated with industrial activity.		
Receiving Waters	Youghiogheny River	Stream Code	37456
NHD Com ID	69914339	RMI	24
Drainage Area	1,520 miles^2	Yield (cfs/mi^2)	0.3355
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	Army Corp of Engineers
Elevation (ft)	765	Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Assessed Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Nearest Downstream Public Water Supply Intake	West County Municipal Authority-McKeesport (10 MGP)		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	390
PWS RMI	1.4	Distance from Outfall (mi)	22.6

Changes Since Last Permit Issuance: None

Other Comments: None

Outfall 001 Drainage Basin

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	101	Design Flow (MGD)	1.2
Latitude		Longitude	
Quad Name	Donora	Quad Code	1707
Wastewater Description:	Cooling tower blowdown.		
Receiving Waters	Youghiogheny River	Stream Code	37465

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	201	Design Flow (MGD)	0.13248
Latitude		Longitude	
Quad Name	Donora	Quad Code	1707
Wastewater Description:	Low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater.		
Receiving Waters	Youghiogheny River	Stream Code	37465

Changes Since Last Permit Issuance: None

Other Comments: None

Outfalls not exposed to industrial activities that discharge uncontaminated stormwater

Outfall 002 Lat. 40° 10′ 30.66″ Long. -79° 41′ 57.52″ RMI 1.83 Stream UNT to Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 004 Lat. 40° 10′ 25.24″ Long. -79° 41′ 31.42″ RMI 4.99 Stream Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 006 Lat. 40° 10′ 49.49″ Long. -79° 41′ 30.67″ RMI 45.10 Stream UNT to Youghiogheny River
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 008 Lat. 40° 10′ 50.72″ Long. -79° 41′ 31.29″ RMI 0.47 Stream UNT to Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 009 Lat. 40° 10′ 28.41″ Long. -79° 41′ 49.9″ RMI 45.10 Stream UNT to Youghiogheny River
Source and Characteristics: Uncontaminated stormwater runoff.

Treatment Facility Summary

Treatment Facility Name: Tenaska Westmoreland Generating Station

WQM Permit No.	Issuance Date
6513200	12/17/2015

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg. Annual Flow (MGD)
Industrial	Filtration	Dichlorination, Reverse Osmosis	None	1.2

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
3.2				

Changes Since Last Permit Issuance: None

Other Comments: None

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	1.6
Latitude	40° 09' 40.09"	**Longitude**	-79° 45' 27.72"

Wastewater Description: Cooling tower blowdown, low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater, EQB discharge consisting of stormwater associated with industrial activity.

Outfall 001 is piped approximately four (4) miles to discharge directly into the Youghiogheny River. Sampling of Outfall 001 is conducted on onsite of the Tenaska Westmoreland Generating Station. The Non-Contact Cooling Water (NCCW) source water is from municipal water supply.

Technology-Based Limitations

The effluent of Outfall 001 consists of cooling tower blowdown, low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater, EQB discharge consisting of stormwater associated with industrial activity. The cooling tower blowdown is monitored at internal monitoring point (IMP) 101 and goes through a batch treatment for pH and chlorine. The treatment process is monitored at the blowdown sump for the levels of pH and chlorine. The batch is only discharged if both parameters are within acceptable effluent limit ranges. If one or both the parameters are out of the effluent limit ranges, the water in the blowdown sump is recirculated back to the head of the treatment process for another round of treatment. This process continues until concentrations are within acceptable effluent limit ranges.

The low volume wastewater and the reject wastewaters from ultra-filtration and reverse osmosis are IMP 201 all go through an oil/water separator prior to collecting in the plant sump.

The industrial activity wastewaters of IMPs 101 and 201 are subject to Steam Electric ELG requirements prior to comingling.

Regulatory Effluent Standards and Monitoring Requirements

In accordance with the recommendations given in Chapter 6, Table 6-4 of the Department's Permit Writer's Manual for NCCW discharges, self-monitoring requirements at Outfall 001 will include, at a minimum, the following parameters: flow, pH and temperature. Monitoring frequency is determined by the flowrate of the NCCW discharge. Greater than 100,000 GPD requires daily monitoring of the three (3) previously mentioned parameters.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH (6.0 to 9.0 S.U.) are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Total Residual Chlorine (TRC)

The facility utilizes public water supply as a source from the NCCW activities, also the facility does conduct chlorination activities. 25 Pa. Code § 92a.48 applies to facilities or activities that use chlorination. Since Tenaska Westmoreland Generating Station uses chlorine, the TRC technology-based limits 25 Pa. Code § 92a.48 does apply to Outfall 001 and states "*(b) For facilities or activities using chlorination, the following apply:*

(1) If the EPA adopts a National categorical ELG promulgating limits for Total Residual Chlorine (TRC) or free available chlorine for a specific industry or activity under section 301 or 304(b) of the Federal Act (33 U.S.C.A. § § 1311 and 1314(b)), that ELG constitutes BAT for the industry or activity. If the EPA has not promulgated a National ELG for TRC or free available chlorine for an industry or activity, the Department may develop a facility-specific BAT effluent limitation for TRC. Factors, which will be considered in developing a facility-specific BAT effluent limitation, include the following:

(i) The age of equipment and facilities involved.

(ii) The engineering aspects of the application of various types of control techniques and alternatives to the use of chlorine or reductions in the volume of chlorine used during the disinfection process.

(iii) The cost of achieving the effluent reduction.

(iv) Non-water quality environmental impacts (including energy requirements).

(v) Other factors the Department deems appropriate.

(2) For facilities where the EPA has not promulgated a National ELG setting forth limits for TRC or free available chlorine for an industry or activity, and the Department has not developed a facility-specific BAT effluent limitation for TRC under the factors in paragraph (1), an effluent limitation for TRC of 0.5 milligrams per liter (30-day average) constitutes BAT."

The TRC effluent limitation of 0.5 $^{mg}/_{L}$ average monthly applies to Outfall 001. The maximum daily for TRC is twice the average monthly effluent limitation, which would equal 1.0 $^{mg}/_{L}$ maximum daily.

Total Dissolved Solids (TDS)

Integral to the implementation of 25 Pa. Code § 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010 are exempt. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or a change in the waste stream. If there are existing mass or production-based TDS effluent limits, then these are used as the basis for the existing mass loading. The facility is defined as new and not expanding, therefore, 25 Pa. Code § 95.10(c) requirement of discharges may not contain more than 2,000 $^{mg}/_{L}$ as a monthly average and 4,000 $^{mg}/_{L}$ as maximum daily limit.

Water Quality-Based Effluent Limitations

Toxics Management Analysis

The Department's Toxics Management Spreadsheet (TMS) was utilized to facilitate calculations necessary for completing a reasonable potential analysis and determine Water Quality-Based Effluent Limitations (WQBELs) for discharges containing toxic pollutant concentrations. TMS combines the functionality of two (2) of the Department's analysis tools, Toxics Screening Analysis Spreadsheet and PENTOXSD water quality model.

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken form the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants, as reported in the permit application or on DMRs, are modeled by the TMS to determine the parameters of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion].

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by TMS. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and contained in the DMRs; data from those sources are used as inputs into the TMS. A summary of TMS Inputs is contained in Table 1 below.

Table 1: TMS Inputs

Parameter	Value
Discharge Inputs	
Facility	Tenaska Westmoreland Generating Station
Evaluation Type	Industrial
NPDES Permit No.	PA0254771
Wastewater Description	Industrial Wastewater and Stormwater
Outfall ID	001
Design Flow (MGD)	1.6
Hardness ($^{mg}/_{L}$)	358
pH (S.U.)	7.0
Partial Mix Factors	Unknown – Calculated by TMS
Complete Mix Times	
Q_{7-10} (min)	
Q_h (min)	
Stream Inputs	
Receiving Surface Water	Youghiogheny River
Number of Reaches to Model	1
Stream Code	37456
RMI	24
Elevation (ft)	755
Drainage Area (mi^2)	1,520
Slope (ft/ft)	
PWS Withdrawal (MGD)	10
Apply Fish Criteria	Yes
Low Flow Yield (cfs/mi^2)	
Flows	
Stream (cfs)	510/510*****
Tributary (cfs)	N/A
Width (ft)	265/437*****
Stream Hardness ($^{mg}/_{L}$)	100
Stream pH (S.U.)	7

***** Denotes discharge location/downstream location values.

Based on the recommendations of the TMS, weekly monitor and report for three (3) parameters: Chloride; Bromide; and Sulfate for weekly monitoring are reporting at Outfall 001. Analysis Report from the TMS run is included in Attachment A.

During the previous permit cycle, estimated pollutant concentrations were used to develop the NPDES Permit. Analysis of the permit renewal application and eDMR data has removed Total Lead and Total Chromium from pollutants of concern contained in Outfall 001's discharge.

<u>WQM 7.0 Model</u>

In general, WQM 7.0 Model is run if the maximum $BOD_5/CBOD_5$ concentrations exceeds 30/25 $^{mg}/_{L}$ in the permit application or the DMRs. The permit application reports BOD_5 concentration of 43 $^{mg}/_{L}$, therefore, running WQM 7.0 Model is required. WQM 7.0 Model was run using BOD_5 concentration of 43 $^{mg}/_{L}$. At this concentration the DO simulation showed that the DO dropped to a low concentration of 8.12 $^{mg}/_{L}$ and recovered. The WQM Model run is located in Appendix D.

The BOD_5 concentration of 43 $^{mg}/_{L}$ is from the permit renewal application which captured the discharges from IMP 101, IMP 201 along with the manual discharge from the EQB. The EQB was designed to the 100-year/1-hour storm event with a design storage volume of 574,875 gallons. With the large storage capacity of the EQB, the manual discharge of the EQB is infrequent. Since the generating plant startup, the EQB has only been pumped twice (in January 2019 during startup to test the pumps and in October 2019 to collect the comingled sample of Outfall 001 for the permit renewal package). Both of these pumping events were driven by obtaining data (making sure the pumps operate and collecting a sample for the permit renewal application) not triggered for storage capacity concerns of the EQB.

The concern with the EQB discharge is bacteria growth and the potential oxygen demand impact it could cause on the Youghiogheny River. Since the manual pumping of the EQB is so infrequent, the stagnant water becomes a breeding ground for bacteria and potentially mosquitos. The trigger for manual discharge might need to be based on other factors than remaining storage capacity of the EQB. With the discharge of the EQB being manually initiated, the Draft permit includes a Part C permit condition to coordinate the discharge of the EQB with at least the discharge of IMP 101.

Thermal WQBELs for Heated Discharges (Non-Contact Cooling Water)

Thermal WQBELs are evaluated using the Department's program called "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate (Q_{7-10} or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. The Department selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F (as discussed in Technology-Based Limitations) for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

The Department's *Implementation Guidance for Temperature Criteria* directs permit writers to assume instantaneous complete mixing of the discharge with the receiving stream when calculating thermal effluent limits unless adverse factors exist. One such factor listed in the guidance is that the "discharge is to a receiving water that is very wide, resulting in restricted dispersion of the plume, and horizontal stratification of the plume." Since wastewaters from Outfall 001 will be discharged to the Youghiogheny River, the dispersion of the discharge plume is assumed to be instantaneous.

Discharges from Outfall 001 are classified under Case 2 because the facility's water is obtained from the local municipal supply. The flow rates used for modeling are 1.2 MGD, which is the monthly average flow of the facility's heated effluent sources (NCCW) and 510 cfs, which is the Q_{7-10} from the Army Corp of Engineers Flows of Major Rivers. The results of the thermal analysis, included in Attachment B, indicate that 110.0°F provides adequate protection to the environment at Outfall 001 as summarized below in Table 2.

Table 2: Outfall 001 WQBELs for Temperature

Date	WWF Daily WLA (°F)
Jan 1-31	110.0
Feb 1-29	110.0
Mar 1-31	110.0
Apr 1-15	110.0
Apr 16-30	110.0
May 1-15	110.0
May 16-30	110.0
Jun 1-15	110.0
Jun 16-30	110.0
Jul 1-31	110.0
Aug 1-15	110.0
Aug 16-31	110.0
Sep 1-15	110.0
Sep 16-30	110.0
Oct 1-15	110.0
Oct 16-31	110.0
Nov 1-15	110.0
Nov 16-30	110.0
Dec 1-31	110.0

Tenaska is requesting that the technology-based temperature effluent limitation requirement of 110°F be removed from the permit. The technology-based thermal limit of 110.0°F is developed to protect the public and the environment. Although Tenaska states that the discharge location is on private property and 10-15 ft. above the riverbank, this does not eliminate the potential of a person recreationally using the Youghiogheny River either fishing on the riverbank, water skiing or

swimming. As stated by Tenaska in this request, the facility's discharge is regularly below 100°F so the facility is consistently in compliance with this limit.

25 Pa. Code § 93.6 states that water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. Also, 25 Pa. Code § 96.6(b) states *"Heated wastewater discharges may not cause a change of surface water temperature of more than 2°F during any 1-hour period."* The Department's "Implementation Guidance for Thermal Criteria" was used in developing the thermal effluent limit for the facility. This document is official PA DEP guidance for permit writers and is not subject to the executive order restrictions which may apply to Federal guidance documents.

To ensure compliance with both of the sited PA regulations above, the 110.0°F IMAX effluent limit is imposed. The facility has the option of the IMAX limit or in-stream monitoring of two location on the Youghiogheny River (Up-Stream and Down-Stream from Outfall 001 discharge location) to ensure that the river does not increase more than 2°F during any 1-hour period. The BAT thermal effluent limit of 110.0°F as a daily IMAX will be imposed unless Tenaska informs the Department that in-stream monitoring for thermal discharge is preferred.

Total Residual Chlorine (TRC)

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and discharge chlorine demands for the receiving stream, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/L from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is then proposed. The results of the modeling are included in Attachment C, which identify that BAT is the most stringent criteria for TRC at an average monthly limit of 0.5 $^{mg}/_{L}$. The maximum daily limit is 2 times the average monthly limit resulting in a 1.0 $^{mg}/_{L}$ limit for maximum daily.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The initial permit for the facility was developed with assumed pollutant concentration contained in facility's discharges, since the permit was issued prior to construction and operation of the facility. This is Tenaska's first generating station that uses public supplied water as the NCCW source instead of from surface water. This greatly reduces the typical concentrations Tenaska sees at other facilities, which all use surface water sources for NCCW. The renewal permit is developed with actual data from the permit renewal application and contained in the historic eDMRs since the facility started operating. This new information has removed previous monitoring requirements of Total Lead and Total Chromium, that were triggered due to the estimated concentrations prior to the facility operating.

Effluent Limitations and Monitoring Requirements for Outfall 001

Effluent limits applicable at Outfall 001 are the more stringent of TBELs, regulatory effluent standards, WQBELs, previously permitted effluent limits and the monitoring requirements are summarized in Table 3.

Table 3: Final Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
TDS	Report	Report	2,000.0	4,000.0	—	25 Pa. Code § 95.10
Chloride	Report	Report	Report	Report	—	25 Pa. Code § 96.3
Bromide	Report	Report	Report	Report	—	25 Pa. Code § 96.3
Sulfate	Report	Report	Report	Report	—	25 Pa. Code § 96.3
Temperature (°F)	—	—	—	—	110.0	25 Pa. Code § 93.7
TRC	—	—	0.5	1.0	—	25 Pa. Code § 92a.48
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

Monitoring requirements for the interim and final effluent limits are based on the previous permits monitoring requirements for the facility are displayed in Table 4 below.

Table 4: Monitoring Requirements for Outfall 001

Parameter	Sample Type	Minimum Sample Frequency
Flow (MGD)	Measured	1/day
TDS	Grab	2/month
Chloride	Grab	1/week
Bromide	Grab	1/week
Sulfate	Grab	1/week
Temperature	Grab	1/day
TRC	Grab	2/month
pH (S.U.)	Grab	1/day

Development of Effluent Limitations

Outfall No.	101	**Design Flow (MGD)**	1.2
Latitude	40° 10' 27.37"	**Longitude**	-79° 41' 46.78"

Wastewater Description: Cooling tower blowdown.

Technology-Based Limitations

Internal monitoring point Outfall 101 is the cooling tower blowdown discharge. The average discharge from this process is 1.2 MGD. IMP101 discharges are subject to the steam electric ELG 40 CFR 423. The facility startup was in January 2019, which classifies the facility as a new source. The facility is subject the ELG's New Source Performance Standards (NSPS) for cooling tower blowdown in 40 CFR 423.15(b)(10)(i-iii). Limits are also imposed for pH as stated in 40 CFR 423.15(b)(1) for all discharges except for once through cooling water. The concentrations in the ELG will be applied in lieu of calculating mass-based limits as permitted by 40 CFR 423.13(m). Applicable effluent limitations are shown in Table 5, below.

Table 5: Outfall 101 Applicable Effluent Limitations

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum
Chromium, Total ($^{mg}/_{L}$)	0.2	0.2	-
Zinc, Total ($^{mg}/_{L}$)	1.0	1.0	-
Free Available Chlorine ($^{mg}/_{L}$)	0.2	-	0.5
pH (S.U.)		6.0 – 9.0 Range	

Effluent limitations for IMP 101 based on 40 CFR 423 and 25 PA Code 92a.61

In addition to the ELG's numerical limits, other conditions specified are included in Part C. Specifically they require that, "There shall be no discharge of polychlorinated biphenyl compounds" (40 CFR 423.15(b)), "Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination." (40 CFR 423.15 (j)(2)), and "The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except chromium and zinc (40 CFR 423.15(j)(1)."

In the permit renewal application, TPP requests that PA DEP continue the waiver of the 2-hour per day limit for chlorinating the cooling tower.

On August 6, 2019, PA DEP granted TPP a waiver to the 2-hour limit for chlorinating the cooling tower. As PA DEP described in this waiver, TPP is able to operate the cooling tower by reducing the overall quantity of chlorine (sodium hypochlorite) added to the cooling tower and reducing the chlorine concentration in the cooling tower while providing adequate macroinvertebrate control. Consequently, TPP is able to reduce the overall amount of sodium bisulfite used to dechlorinate cooling tower blowdown prior to discharge from Outfall 101. The Department approves the 2-hour limit for chlorinating the cooling tower during this permit cycle.

Water Quality Based Effluent Limitations

IMP 101 flows to Outfall 001 before discharging to the Youghiogheny River. Water quality-based effluent limitations will be applied at the point of discharge.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and**

substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

The facility is not seeking to revise the previously permitted effluent limits of IMP101.

Effluent Limitations and Monitoring Requirements for Outfall 101

Effluent limits applicable at Outfall 101 are the more stringent of TBELs, regulatory effluent standards, previously permitted effluent limits and the monitoring requirements are summarized in Table 6.

Table 6: Effluent limits and monitoring requirements for Outfall 101

Parameter	Concentration ($^{mg}/_{L}$)				Basis
	Daily Minimum	Average Monthly	Daily Maximum	Instant Maximum	
Chromium, Total	—	0.2	0.2	—	40 CFR § 423.15(b)(10)(i-iii)
Zinc, Total	—	1.0	1.0	—	40 CFR § 423.15(b)(10)(i-iii)
Free Available Chlorine	—	0.2	—	0.5	40 CFR § 423.15(b)(10)(i-iii)
pH (S.U.)	6.0	—	—	9.0	40 CFR § 423.15(b)(1)

Monitoring requirements are based on the previous permits monitoring requirements for the facility are displayed in Table 7 below.

Table 7: Monitoring Requirements for Outfall 101

Parameter	Sample Type	Minimum Sample Frequency
Chromium, Total	Grab	1/Week
Zinc, Total	Grab	1/Week
Free Available Chlorine	Grab	1/Week
pH (S.U.)	Grab	1/Week

Development of Effluent Limitations

Outfall No.	201	**Design Flow (MGD)**	0.13248
Latitude	40° 10' 30.33"	**Longitude**	-79° 41' 45.2"

Wastewater Description: Low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater.

Technology-Based Limitations

IMP 201 receives wastewater from a plant sump and wastewater discharge from an oil water separator. Contributing to the plant sump is reject water from ultrafiltration, reverse osmosis reject water, service water (pump motor cooling, quenching) and wastewater from plant drains. The average discharge from this process is 0.13248 MGD. IMP201 discharges are subject to the steam electric ELG 40 CFR 423. The facility startup was in January 2019, which classifies the facility as a new source. The facility is subject the ELG's New Source Performance Standards (NSPS) for low volume waste sources in 40 CFR 423.15(b)(3). Limits are also imposed for pH as stated in 40 CFR 423.15(b)(1) for all discharges except for once through cooling water. The concentrations in the ELG will be applied in lieu of calculating mass-based limits as permitted by 40 CFR 423.13(m). Applicable effluent limitations are shown in Table 8, below.

Table 8: Outfall 201 Applicable Effluent Limitations

Parameter	Monthly Average	Daily Maximum
Total Suspended Solids ($^{mg}/_{L}$)	30.0	100.0
Oil & Grease ($^{mg}/_{L}$)	15.0	20.0
pH (S.U.)	6.0 – 9.0 Range	

Effluent limitations for IMP 201 based on 40 CFR 423 and 25 PA Code 92a.61

In addition to the ELG's numerical limits, Part C will also require that, "There shall be no discharge of polychlorinated biphenyl compounds" (40 CFR 423.15(b)).

Water Quality Based Effluent Limitations

IMP 201 flows to Outfall 001 before discharging to the Youghiogheny River. Water quality based effluent limitations will be applied at the point of discharge.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The facility is not seeking to revise the previously permitted effluent limits of IMP201.

Effluent Limitations and Monitoring Requirements for Outfall 201

Effluent limits applicable at Outfall 201 are the more stringent of TBELs, regulatory effluent standards, previously permitted effluent limits and the monitoring requirements are summarized in Table 8.

Table 8: Effluent limits and monitoring requirements for Outfall 201

Parameter	Concentration ($^{mg}/_{L}$)				Basis
	Daily Minimum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	30.0	100.0	—	40 CFR § 423.15(b)(3)
Oil & Grease	—	15.0	20.0	—	40 CFR § 423.15(b)(3)
pH (S.U.)	6.0	—	—	9.0	40 CFR § 423.15(b)(1)

Monitoring requirements are based on the previous permits monitoring requirements for the facility are displayed in Table 9 below.

Table 9: Monitoring Requirements for Outfall 201

Parameter	Sample Type	Minimum Sample Frequency
Total Suspended Solids	Grab	1/Week
Oil & Grease	Grab	1/Week
pH (S.U.)	Grab	1/Week

Uncontaminated Stormwater Outfalls

The Department's policy for stormwater discharges is to either (1) require that the stormwater is uncontaminated, (2) impose "Monitor and Report", to establish effluent goals and require the permittee to submit a Stormwater Pollution Prevention Plan (SWPPP), or (3) impose effluent limits. In all cases, a storm water special condition is placed in the permit in Part C.

Stormwater effluent data reported in the application are compared to stream criteria, EPA's Multi-Sector General Permit "benchmark values", ELGs and other references while considering site specific conditions such as stream flow and location to determine if actual discharge concentrations of various pollutants in stormwater warrant further controls. If there is insufficient data available, or if pollutant levels are excessive, monitoring for specific pollutants and/or a SWPPP are required in the permit. Otherwise, the storm water outfalls are simply listed as discharge points. In either case, a special condition is added to the permit to include some of the key components of the Department's General Permit (PAG-03) for Discharges of Stormwater Associated with Industrial Activities.

Due to site grading, the facility is able to collect and discharge stormwater exposed to industrial activities and stormwater outside of industrial activities separately. The five (5) uncontaminated stormwater outfalls, with drainage areas outside of industrial activities, are identified in the NPDES permit and have no monitoring or reporting requirements imposed and summarized below.

Outfalls not exposed to industrial activities that discharge uncontaminated stormwater

Outfall 002 Lat. 40° 10′ 30.66″ Long. -79° 41′ 57.52″ RMI 1.83 Stream UNT to Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 004 Lat. 40° 10′ 25.24″ Long. -79° 41′ 31.42″ RMI 4.99 Stream Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 006 Lat. 40° 10′ 49.49″ Long. -79° 41′ 30.67″ RMI 45.10 Stream UNT to Youghiogheny River
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 008 Lat. 40° 10′ 50.72″ Long. -79° 41′ 31.29″ RMI 0.47 Stream UNT to Barren Run
Source and Characteristics: Uncontaminated stormwater runoff.

Outfall 009 Lat. 40° 10′ 28.41″ Long. -79° 41′ 49.9″ RMI 45.10 Stream UNT to Youghiogheny River
Source and Characteristics: Uncontaminated stormwater runoff.

	Tools and References Used to Develop Permit
☒	WQM for Windows Model (see Attachment **D**)
☒	TMS Model (see Attachment **A**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☒	Temperature Model Spreadsheet (see Attachment **B**)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☒	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachment A – TMS Report

Attachment B – Thermal Discharge Limit Calculation Spreadsheet

Attachment C - TRC_CALC Spreadsheet

Attachment D – WQM Model Report

Attachment E – Aerial Site Plan

Attachment F – Water Flow Diagram

Attachment G – StreamStats

Attachment H - January 2020 Updated NOI

Attachment A – TMS Report

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Toxics Management Spreadsheet
Version 1.0, July 2020

Discharge Information

Instructions | Discharge | Stream

Facility: **Tenaska Westmoreland Generating Station** NPDES Permit No.: **PA0254771** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Industrial Wastewater & Stormwater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.6	358	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1350									
	Chloride (PWS)	mg/L		200									
	Bromide	mg/L		1									
	Sulfate (PWS)	mg/L		413									
	Fluoride (PWS)	mg/L	<	0.2									
Group 2	Total Aluminum	µg/L		29.2									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1.5									
	Total Barium	µg/L		69									
	Total Beryllium	µg/L	<	0.1									
	Total Boron	µg/L	<	50									
	Total Cadmium	µg/L	<	0.23									
	Total Chromium (III)	µg/L	<	1.6									
	Hexavalent Chromium	µg/L		3.1									
	Total Cobalt	µg/L	<	1.2									
	Total Copper	µg/L	<	3.6									
	Free Available Cyanide	µg/L											
	Total Cyanide	µg/L	<	2									
	Dissolved Iron	µg/L	<	170									
	Total Iron	µg/L		210									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		21									
	Total Mercury	µg/L		0.0015									
	Total Nickel	µg/L		11									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2									
	Total Selenium	µg/L	<	0.94									
	Total Silver	µg/L	<	0.47									
	Total Thallium	µg/L	<	0.23									
	Total Zinc	µg/L		18									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<	1.2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.84									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.36									

Group 3	Carbon Tetrachloride	µg/L	<	0.34										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	1										
	Chloroethane	µg/L	<	0.23										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.53										
	Chloroform	µg/L		142										
	Dichlorobromomethane	µg/L	<	5.32										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.2										
	1,1-Dichloroethylene	µg/L	<	0.28										
	1,2-Dichloropropane	µg/L	<	0.21										
	1,3-Dichloropropylene	µg/L	<	0.3										
	1,4-Dioxane	µg/L	<	0.8										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.7										
	Methyl Chloride	µg/L	<	0.28										
	Methylene Chloride	µg/L	<	0.47										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.28										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.26										
	1,1,1-Trichloroethane	µg/L	<	0.25										
	1,1,2-Trichloroethane	µg/L	<	0.25										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.22										
Group 4	2-Chlorophenol	µg/L	<	0.2										
	2,4-Dichlorophenol	µg/L	<	0.1										
	2,4-Dimethylphenol	µg/L	<	0.2										
	4,6-Dinitro-o-Cresol	µg/L	<	1										
	2,4-Dinitrophenol	µg/L	<	1										
	2-Nitrophenol	µg/L	<	0.3										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.3										
	Pentachlorophenol	µg/L	<	0.8										
	Phenol	µg/L	<	0.4										
	2,4,6-Trichlorophenol	µg/L	<	0.2										
Group 5	Acenaphthene	µg/L	<											
	Acenaphthylene	µg/L	<											
	Anthracene	µg/L	<											
	Benzidine	µg/L	<											
	Benzo(a)Anthracene	µg/L	<											
	Benzo(a)Pyrene	µg/L	<											
	3,4-Benzofluoranthene	µg/L	<											
	Benzo(ghi)Perylene	µg/L	<											
	Benzo(k)Fluoranthene	µg/L	<											
	Bis(2-Chloroethoxy)Methane	µg/L	<											
	Bis(2-Chloroethyl)Ether	µg/L	<											
	Bis(2-Chloroisopropyl)Ether	µg/L	<											
	Bis(2-Ethylhexyl)Phthalate	µg/L	<											
	4-Bromophenyl Phenyl Ether	µg/L	<											
	Butyl Benzyl Phthalate	µg/L	<											
	2-Chloronaphthalene	µg/L	<											
	4-Chlorophenyl Phenyl Ether	µg/L	<											
	Chrysene	µg/L	<											
	Dibenzo(a,h)Anthrancene	µg/L	<											
	1,2-Dichlorobenzene	µg/L	<											
	1,3-Dichlorobenzene	µg/L	<											
	1,4-Dichlorobenzene	µg/L	<											
	3,3-Dichlorobenzidine	µg/L	<											
	Diethyl Phthalate	µg/L	<											
	Dimethyl Phthalate	µg/L	<											
	Di-n-Butyl Phthalate	µg/L	<											
	2,4-Dinitrotoluene	µg/L	<											

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Toxics Management Spreadsheet
Version 1.0, July 2020

Stream / Surface Water Information

Tenaska Westmoreland Generating Station, NPDES Permit No. PA0254771, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Youghiogheny River**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037456	24	755	1520			Yes
End of Reach 1	037456	1.4	722	1760		10	Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	24	0.1	510			265	9					100	7		
End of Reach 1	1.4	0.1	510			437	9								

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	24														
End of Reach 1	1.4														

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Toxics Management Spreadsheet
Version 1.0, July 2020

Model Results

Tenaska Westmoreland Generating Station, NPDES Permit No. PA0254771, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
24	510		510	2.475	0.00028	9.	265.	29.444	0.215	6.428	212.307
1.4	510	15.47	494.53								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
24	1727.45		1727.45	2.475	0.00028	15.372	265.	17.24	0.425	3.252	95.766
1.4	1727.449	15.47	1711.98								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.266 Analysis Hardness (mg/l): 104.63 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Bromide	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	41,826	
Total Antimony	0	0		0	1,100	1,100	61,344	
Total Arsenic	0	0		0	340	340	18,961	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,171,118	
Total Boron	0	0		0	8,100	8,100	451,717	
Total Cadmium	0	0		0	2.104	2.23	125	Chem Translator of 0.942 applied
Total Chromium (III)	0	0		0	591.263	1,871	104,346	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	909	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	5,298	

Total Copper	0	0		0	14.024	14.6	815	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	67.839	86.5	4,823	Chem Translator of 0.784 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	91.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	486.498	487	27,185	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.477	4.09	228	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	3,625	
Total Zinc	0	0		0	121.758	124	6,943	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	167	
Acrylonitrile	0	0		0	650	650	36,249	
Benzene	0	0		0	640	640	35,691	
Bromoform	0	0		0	1,800	1,800	100,382	
Carbon Tetrachloride	0	0		0	2,800	2,800	156,149	
Chlorobenzene	0	0		0	1,200	1,200	66,921	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	1,003,816	
Chloroform	0	0		0	1,900	1,900	105,958	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	836,513	
1,1-Dichloroethylene	0	0		0	7,500	7,500	418,257	
1,2-Dichloropropane	0	0		0	11,000	11,000	613,443	
1,3-Dichloropropylene	0	0		0	310	310	17,288	
Ethylbenzene	0	0		0	2,900	2,900	161,726	
Methyl Bromide	0	0		0	550	550	30,672	
Methyl Chloride	0	0		0	28,000	28,000	1,561,491	
Methylene Chloride	0	0		0	12,000	12,000	669,211	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	55,768	
Tetrachloroethylene	0	0		0	700	700	39,037	
Toluene	0	0		0	1,700	1,700	94,805	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	379,219	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	167,303	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	189,610	
Trichloroethylene	0	0		0	2,300	2,300	128,265	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	31,230	
2,4-Dichlorophenol	0	0		0	1,700	1,700	94,805	
2,4-Dimethylphenol	0	0		0	660	660	36,807	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	4,461	
2,4-Dinitrophenol	0	0		0	660	660	36,807	
2-Nitrophenol	0	0		0	8,000	8,000	446,140	
4-Nitrophenol	0	0		0	2,300	2,300	128,265	
p-Chloro-m-Cresol	0	0		0	160	160	8,923	
Pentachlorophenol	0	0		0	8.723	8.72	486	
Phenol	0	0		0	N/A	N/A	N/A	

2,4,6-Trichlorophenol	0	0		0	460	460	25,653	

☑ *CFC* CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 101.25 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Bromide	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	45,550	
Total Arsenic	0	0		0	150	150	31,057	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	848,880	
Total Boron	0	0		0	1,600	1,600	331,270	
Total Cadmium	0	0		0	0.248	0.27	56.5	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	74.870	87.1	18,025	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,152	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	3,934	
Total Copper	0	0		0	9.051	9.43	1,952	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	310,566	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.551	3.23	669	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	188	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.554	52.7	10,914	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,033	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	2,692	
Total Zinc	0	0		0	119.385	121	25,069	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	621	
Acrylonitrile	0	0		0	130	130	26,916	
Benzene	0	0		0	130	130	26,916	
Bromoform	0	0		0	370	370	76,606	
Carbon Tetrachloride	0	0		0	560	560	115,945	
Chlorobenzene	0	0		0	240	240	49,691	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	724,654	
Chloroform	0	0		0	390	390	80,747	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	641,836	
1,1-Dichloroethylene	0	0		0	1,500	1,500	310,566	
1,2-Dichloropropane	0	0		0	2,200	2,200	455,497	
1,3-Dichloropropylene	0	0		0	61	61.0	12,630	

Ethylbenzene	0	0		0	580	580	120,085	
Methyl Bromide	0	0		0	110	110	22,775	
Methyl Chloride	0	0		0	5,500	5,500	1,138,742	
Methylene Chloride	0	0		0	2,400	2,400	496,905	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	43,479	
Tetrachloroethylene	0	0		0	140	140	28,986	
Toluene	0	0		0	330	330	68,325	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	289,862	
1,1,1-Trichloroethane	0	0		0	610	610	126,297	
1,1,2-Trichloroethane	0	0		0	680	680	140,790	
Trichloroethylene	0	0		0	450	450	93,170	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	22,775	
2,4-Dichlorophenol	0	0		0	340	340	70,395	
2,4-Dimethylphenol	0	0		0	130	130	26,916	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	3,313	
2,4-Dinitrophenol	0	0		0	130	130	26,916	
2-Nitrophenol	0	0		0	1,600	1,600	331,270	
4-Nitrophenol	0	0		0	470	470	97,311	
p-Chloro-m-Cresol	0	0		0	30	30.0	6,211	
Pentachlorophenol	0	0		0	6.693	6.69	1,386	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	18,841	

☑ ***THH*** CCT (min): ####### THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	##########	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Chloride (PWS)	0	0		0	250,000	250,000	51,760,989	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Bromide	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	51,760,989	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	414,088	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	1,159	
Total Arsenic	0	0		0	10	10.0	2,070	
Total Barium	0	0		0	2,400	2,400	496,905	
Total Boron	0	0		0	3,100	3,100	641,836	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	62,113	
Total Iron	0	0		0	N/A	N/A	N/A	

Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	207,044	
Total Mercury	0	0		0	0.050	0.05	10.4	
Total Nickel	0	0		0	610	610	126,297	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	1,035	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	49.7	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	6	6.0	1,242	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	130	130	26,916	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	6,832	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	530	530	109,733	
Methyl Bromide	0	0		0	47	47.0	9,731	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	1,300	1,300	269,157	
1,2-trans-Dichloroethylene	0	0		0	140	140	28,986	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	81	81.0	16,771	
2,4-Dichlorophenol	0	0		0	77	77.0	15,942	
2,4-Dimethylphenol	0	0		0	380	380	78,677	
4,6-Dinitro-o-Cresol	0	0		0	13	13.0	2,692	
2,4-Dinitrophenol	0	0		0	69	69.0	14,286	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	10,400	10,400	2,153,257	

2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 95.766 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Bromide	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.051	0.051	35.6	
Benzene	0	0		0	1.2	1.2	839	
Bromoform	0	0		0	4.3	4.3	3,005	
Carbon Tetrachloride	0	0		0	0.23	0.23	161	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	280	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	3,984	
Dichlorobromomethane	0	0		0	0.55	0.55	384	
1,2-Dichloroethane	0	0		0	0.38	0.38	266	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	

1,3-Dichloropropylene	0	0		0	0.34	0.34	238	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	4.6	4.6	3,215	
1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	119	
Tetrachloroethylene	0	0		0	0.69	0.69	482	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.59	0.59	412	
Trichloroethylene	0	0		0	2.5	2.5	1,747	
Vinyl Chloride	0	0		0	0.025	0.025	17.5	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.270	0.27	189	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	978	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Chloride (PWS)	Report	Report	Report	Report	Report	mg/L	51,761	THH-PWS	Special Monitoring Applies
Bromide	Report	Report	Report	Report	Report	mg/L	N/A	N/A	Special Monitoring Applies
Sulfate (PWS)	Report	Report	Report	Report	Report	mg/L	51,761	THH-PWS	Special Monitoring Applies

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	103,522	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL

Total Aluminum	26,809	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	496,905	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	18,025	µg/L	Discharge Conc < TQL
Total Cobalt	3,396	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	522	µg/L	Discharge Conc < TQL
Total Iron	310,566	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Manganese	207,044	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	10.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	669	µg/L	Discharge Conc < TQL
Total Silver	146	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	1,035	µg/L	Discharge Conc < TQL
Total Selenium	1,033	µg/L	Discharge Conc < TQL
Total Thallium	49.7	µg/L	Discharge Conc < TQL
Acrolein	107	µg/L	Discharge Conc < TQL
Acrylonitrile	35.6	µg/L	Discharge Conc < TQL
Benzene	839	µg/L	Discharge Conc < TQL
Bromoform	3,005	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	161	µg/L	Discharge Conc < TQL
Chlorobenzene	26,916	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	643,405	µg/L	Discharge Conc < TQL
Methyl Bromide	9,731	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	266	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	6,832	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	393,192	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	238	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	103,660	µg/L	Discharge Conc < TQL
Methyl Chloride	1,000,853	µg/L	Discharge Conc < TQL
Methylene Chloride	3,215	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	119	µg/L	Discharge Conc < TQL
Tetrachloroethylene	482	µg/L	Discharge Conc < TQL
Toluene	60,766	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	28,986	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	107,234	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	412	µg/L	Discharge Conc < TQL
Trichloroethylene	1,747	µg/L	Discharge Conc < TQL
Vinyl Chloride	17.5	µg/L	Discharge Conc < TQL
2-Chlorophenol	16,771	µg/L	Discharge Conc < TQL

2,4-Dichlorophenol	15,942	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	23,592	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2,692	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	14,286	µg/L	Discharge Conc < TQL
2-Nitrophenol	285,958	µg/L	Discharge Conc < TQL
4-Nitrophenol	82,213	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	5,719	µg/L	Discharge Conc < TQL
Pentachlorophenol	189	µg/L	Discharge Conc < TQL
Phenol	2,153,257	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	978	µg/L	Discharge Conc < TQL

Attachment B – Thermal Discharge Limit Calculation Spreadsheet

Facility: Tenaska Westmoreland Generating Station
Permit Number: PA0254771
Stream Name: Youghoigheny River
Analyst/Engineer: Curt Holes
Stream Q7-10 (cfs): 510

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	0	1.2	0	1.2	1.00	1575.90	1575.90	1577.76
Feb 1-29	0	1.2	0	1.2	1.00	1785.00	1785.00	1786.86
Mar 1-31	0	1.2	0	1.2	1.00	3315.00	3315.00	3316.86
Apr 1-15	0	1.2	0	1.2	1.00	4569.60	4569.60	4571.46
Apr 16-30	0	1.2	0	1.2	1.00	4569.60	4569.60	4571.46
May 1-15	0	1.2	0	1.2	1.00	2590.80	2590.80	2592.66
May 16-31	0	1.2	0	1.2	1.00	2590.80	2590.80	2592.66
Jun 1-15	0	1.2	0	1.2	1.00	1509.60	1509.60	1511.46
Jun 16-30	0	1.2	0	1.2	1.00	1509.60	1509.60	1511.46
Jul 1-31	0	1.2	0	1.2	1.00	693.60	693.60	695.46
Aug 1-15	0	1.2	0	1.2	1.00	708.90	708.90	710.76
Aug 16-31	0	1.2	0	1.2	1.00	708.90	708.90	710.76
Sep 1-15	0	1.2	0	1.2	1.00	550.80	550.80	552.66
Sep 16-30	0	1.2	0	1.2	1.00	550.80	550.80	552.66
Oct 1-15	0	1.2	0	1.2	1.00	652.80	652.80	654.66
Oct 16-31	0	1.2	0	1.2	1.00	652.80	652.80	654.66
Nov 1-15	0	1.2	0	1.2	1.00	923.10	923.10	924.96
Nov 16-30	0	1.2	0	1.2	1.00	923.10	923.10	924.96
Dec 1-31	0	1.2	0	1.2	1.00	1530.00	1530.00	1531.86

Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.
Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017
NOTE: The user can only edit fields that are blue.
NOTE: MGD x 1.547 = cfs.

Facility: **Tenaska Westmoreland Generating Station**
Permit Number: PA0254771
Stream: Youghoigheny River

	WWF Criteria (ºF)	CWF Criteria (ºF)	TSF Criteria (ºF)	316 Criteria (ºF)	Q7-10 Multipliers (Used in Analysis)	Q7-10 Multipliers (Default - Info Only)
Jan 1-31	40	38	40	58	3.09	3.2
Feb 1-29	40	38	40	58	3.5	3.5
Mar 1-31	46	42	46	58	6.5	7
Apr 1-15	52	48	52	58	8.96	9.3
Apr 16-30	58	52	58	58	8.96	9.3
May 1-15	64	54	64	64	5.08	5.1
May 16-31	72	58	68	72	5.08	5.1
Jun 1-15	80	60	70	80	2.96	3
Jun 16-30	84	64	72	84	2.96	3
Jul 1-31	87	66	74	87	1.36	1.7
Aug 1-15	87	66	80	87	1.39	1.4
Aug 16-31	87	66	87	87	1.39	1.4
Sep 1-15	84	64	84	84	1.08	1.1
Sep 16-30	78	60	78	78	1.08	1.1
Oct 1-15	72	54	72	72	1.28	1.2
Oct 16-31	66	50	66	66	1.28	1.2
Nov 1-15	58	46	58	58	1.81	1.6
Nov 16-30	50	42	50	58	1.81	1.6
Dec 1-31	42	40	42	58	3	2.4

NOTES:
WWF= Warm water fishes
CWF= Cold water fishes
TSF= Trout stocking

Facility: **Tenaska Westmoreland Generating Station**
Permit Number: PA0254771
Stream: Youghoigheny River

	WWF Ambient Stream Temperature (°F) (Default)	Ambient Stream Temperature (°F) (Site-specific data)	Target Maximum Stream Temp.[1] (°F)	WWF Daily WLA[2] (Million BTUs/day)	WWF Daily WLA[3] (°F)	at Discharge Flow (MGD)	PMF
Jan 1-31	35	0	40	N/A -- Case 2	110.0	1.2	1.00
Feb 1-29	35	0	40	N/A -- Case 2	110.0	1.2	1.00
Mar 1-31	40	0	46	N/A -- Case 2	110.0	1.2	1.00
Apr 1-15	47	0	52	N/A -- Case 2	110.0	1.2	1.00
Apr 16-30	53	0	58	N/A -- Case 2	110.0	1.2	1.00
May 1-15	58	0	64	N/A -- Case 2	110.0	1.2	1.00
May 16-31	62	0	72	N/A -- Case 2	110.0	1.2	1.00
Jun 1-15	67	0	80	N/A -- Case 2	110.0	1.2	1.00
Jun 16-30	71	0	84	N/A -- Case 2	110.0	1.2	1.00
Jul 1-31	75	0	87	N/A -- Case 2	110.0	1.2	1.00
Aug 1-15	74	0	87	N/A -- Case 2	110.0	1.2	1.00
Aug 16-31	74	0	87	N/A -- Case 2	110.0	1.2	1.00
Sep 1-15	71	0	84	N/A -- Case 2	110.0	1.2	1.00
Sep 16-30	65	0	78	N/A -- Case 2	110.0	1.2	1.00
Oct 1-15	60	0	72	N/A -- Case 2	110.0	1.2	1.00
Oct 16-31	54	0	66	N/A -- Case 2	110.0	1.2	1.00
Nov 1-15	48	0	58	N/A -- Case 2	110.0	1.2	1.00
Nov 16-30	42	0	50	N/A -- Case 2	110.0	1.2	1.00
Dec 1-31	37	0	42	N/A -- Case 2	110.0	1.2	1.00

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1°F above ambient stream temperature is allocated.
[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.
[3] The WLA expressed in °F is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110°F are displayed as 110°F.

Attachment C - TRC_CALC Spreadsheet

TRC EVALUATION Tenaska Westmoreland Generating Station Outfall 001

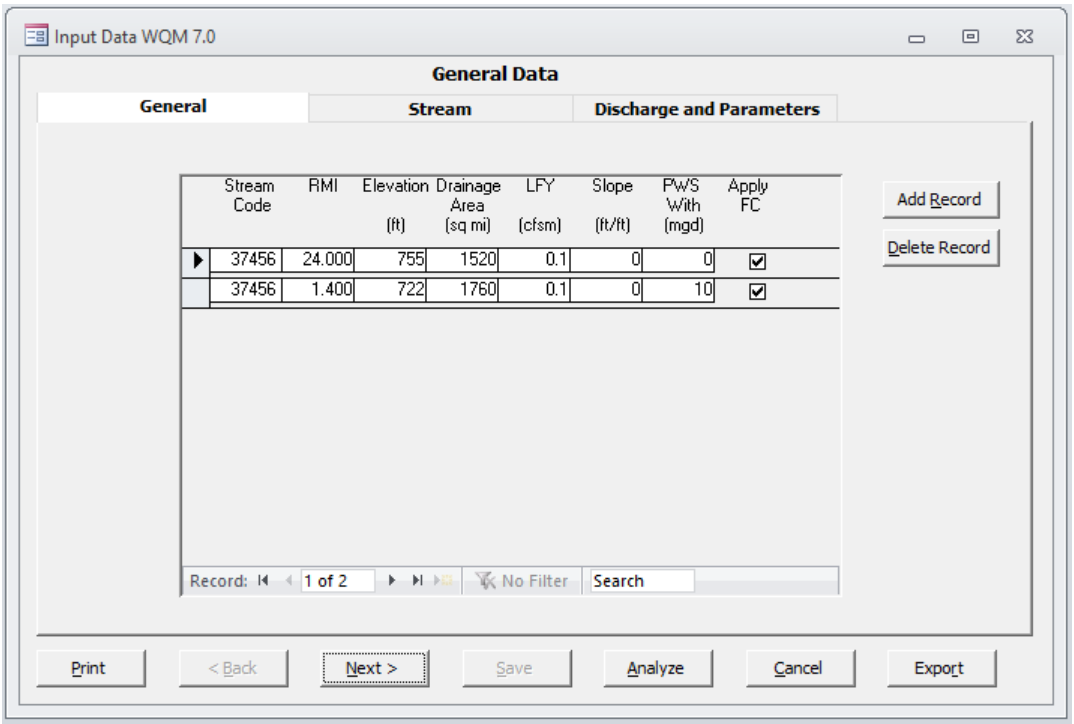
510	= Q stream (cfs)	0.5	= CV Daily
1.2	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.705	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

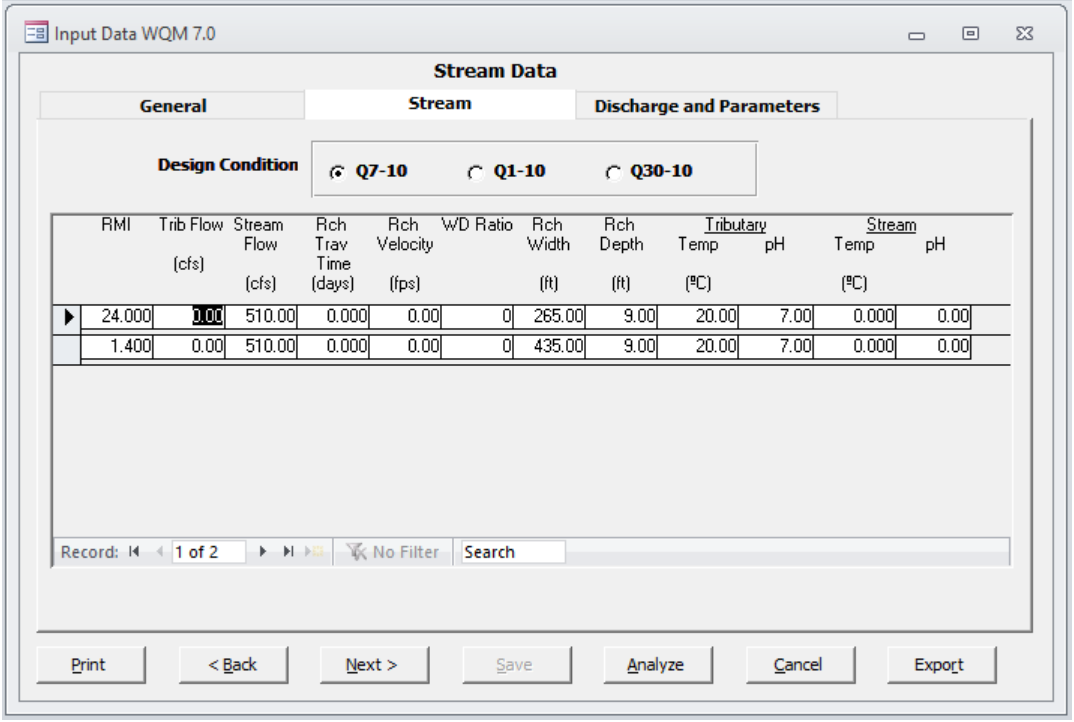
Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 61.803	1.3.2.iii	WLA cfc = 85.451
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 23.029	5.1d	LTA_cfc = 49.677

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Attachment D – WQM Model Report


Input Data WQM 7.0
General Data
General
Stream
Discharge and Parameters
Stream Code
RMI
Elevation (ft)
Drainage Area (sq mi)
LFY (cfsm)
Slope (ft/ft)
PWS With (mgd)
Apply FC
37456 24.000 755 1520 0.1 0 0
37456 1.400 722 1760 0.1 0 10
Add Record
Delete Record
Record: 1 of 2
No Filter
Search
Print
< Back
Next >
Save
Analyze
Cancel
Export


Input Data WQM 7.0
Stream Data
General
Stream
Discharge and Parameters
Design Condition
Q7-10
Q1-10
Q30-10
RMI
Trib Flow (cfs)
Stream Flow (cfs)
Rch Trav Time (days)
Rch Velocity (fps)
WD Ratio
Rch Width (ft)
Rch Depth (ft)
Tributary Temp (ºC)
Tributary pH
Stream Temp (ºC)
Stream pH
24.000 0.00 510.00 0.000 0.00 0 265.00 9.00 20.00 7.00 0.000 0.00
1.400 0.00 510.00 0.000 0.00 0 435.00 9.00 20.00 7.00 0.000 0.00
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Search
Print
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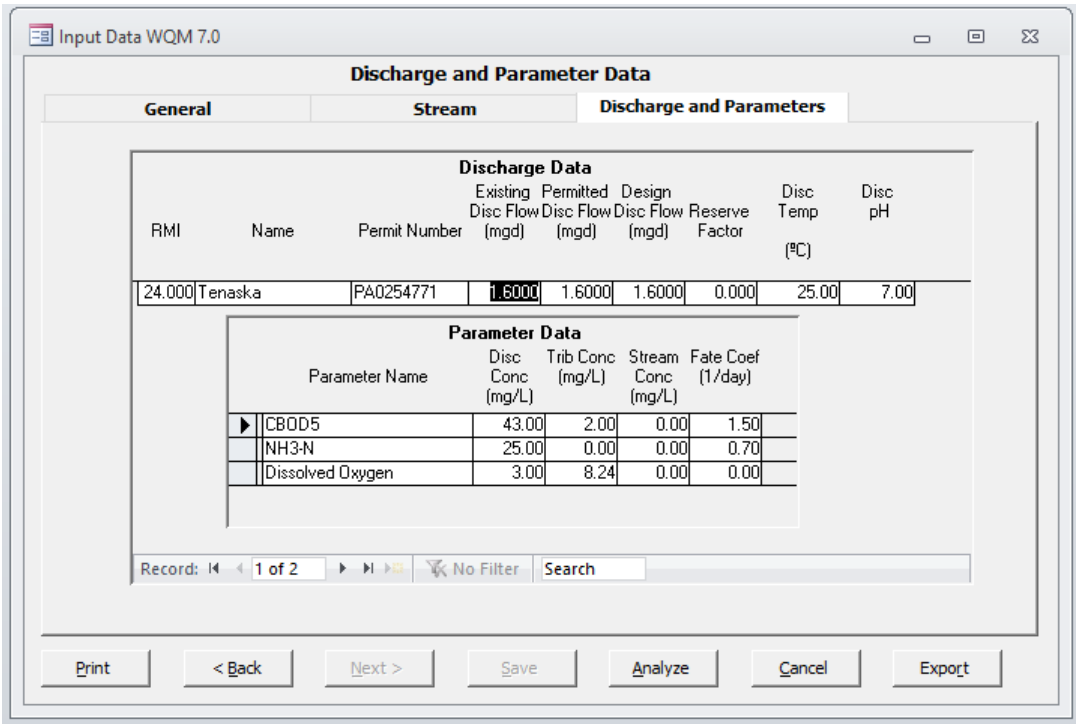
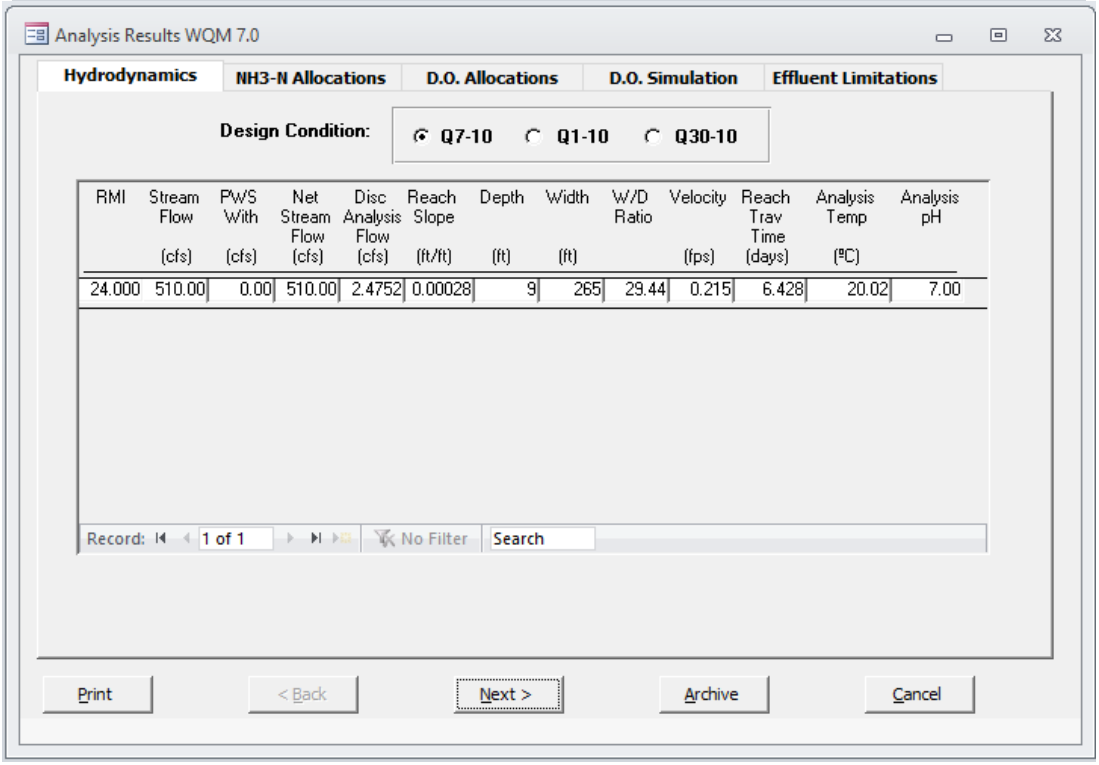
Next >
Save
Analyze
Cancel
Export


Input Data WQM 7.0
Discharge and Parameter Data
General
Stream
Discharge and Parameters
Discharge Data
RMI
Name
Permit Number
Existing Disc Flow (mgd)
Permitted Disc Flow (mgd)
Design Disc Flow (mgd)
Reserve Factor
Disc Temp (ºC)
Disc pH
24.000 Tenaska PA0254771 1.6000 1.6000 1.6000 0.000 25.00 7.00
Parameter Data
Parameter Name
Disc Conc (mg/L)
Trib Conc (mg/L)
Stream Conc (mg/L)
Fate Coef (1/day)
CBOD5 43.00 2.00 0.00 1.50
NH3-N 25.00 0.00 0.00 0.70
Dissolved Oxygen 3.00 8.24 0.00 0.00
Record: 1 of 2
No Filter
Search
Print
< Back
Next >
Save
Analyze
Cancel
Export


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
Design Condition:
Q7-10
Q1-10
Q30-10
RMI
Stream Flow (cfs)
PWS With (cfs)
Net Stream Flow (cfs)
Disc Analysis Flow (cfs)
Reach Slope (ft/ft)
Depth (ft)
Width (ft)
W/D Ratio
Velocity (fps)
Reach Trav Time (days)
Analysis Temp (ºC)
Analysis pH
24.000 510.00 0.00 510.00 2.4752 0.00028 9 265 29.44 0.215 6.428 20.02 7.00
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No Filter
Search
Print
< Back
Next >
Archive
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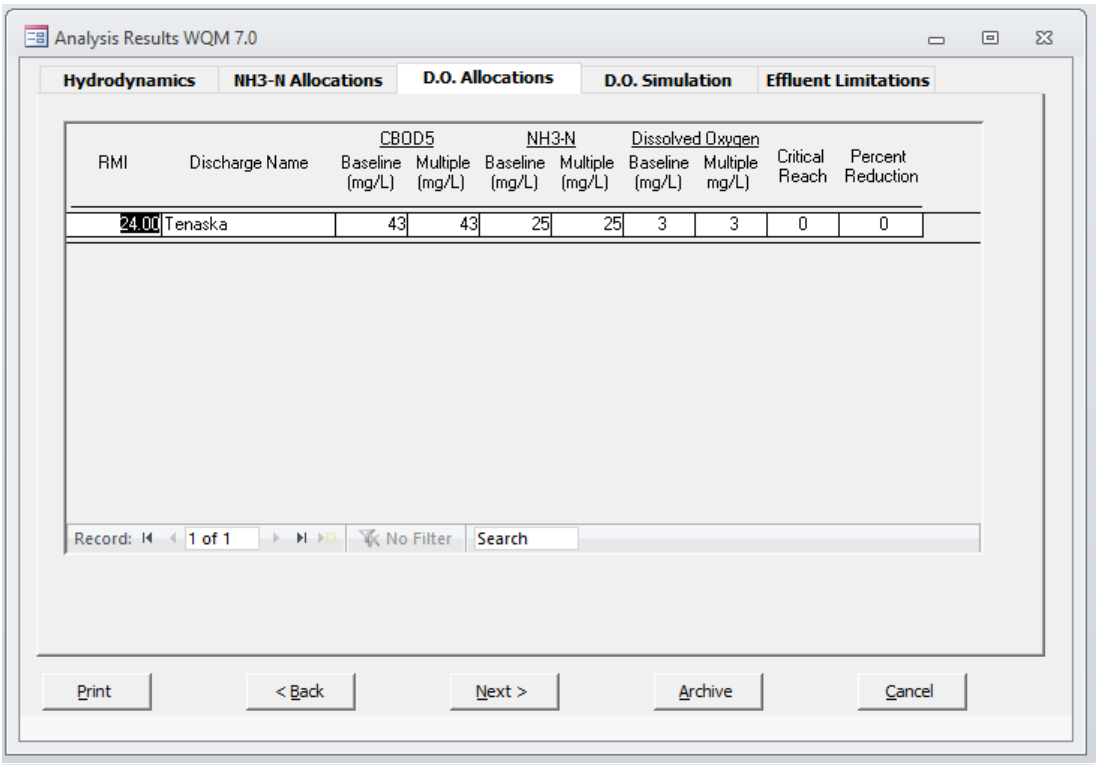
Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
CBOD5 Baseline (mg/L)
CBOD5 Multiple (mg/L)
NH3-N Baseline (mg/L)
NH3-N Multiple (mg/L)
Dissolved Oxygen Baseline (mg/L)
Dissolved Oxygen Multiple mg/L)
Critical Reach
Percent Reduction
24.00 Tenaska 43 43 25 25 3 3 0 0
Record: 1 of 1
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Search
Print
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Next >
Archive
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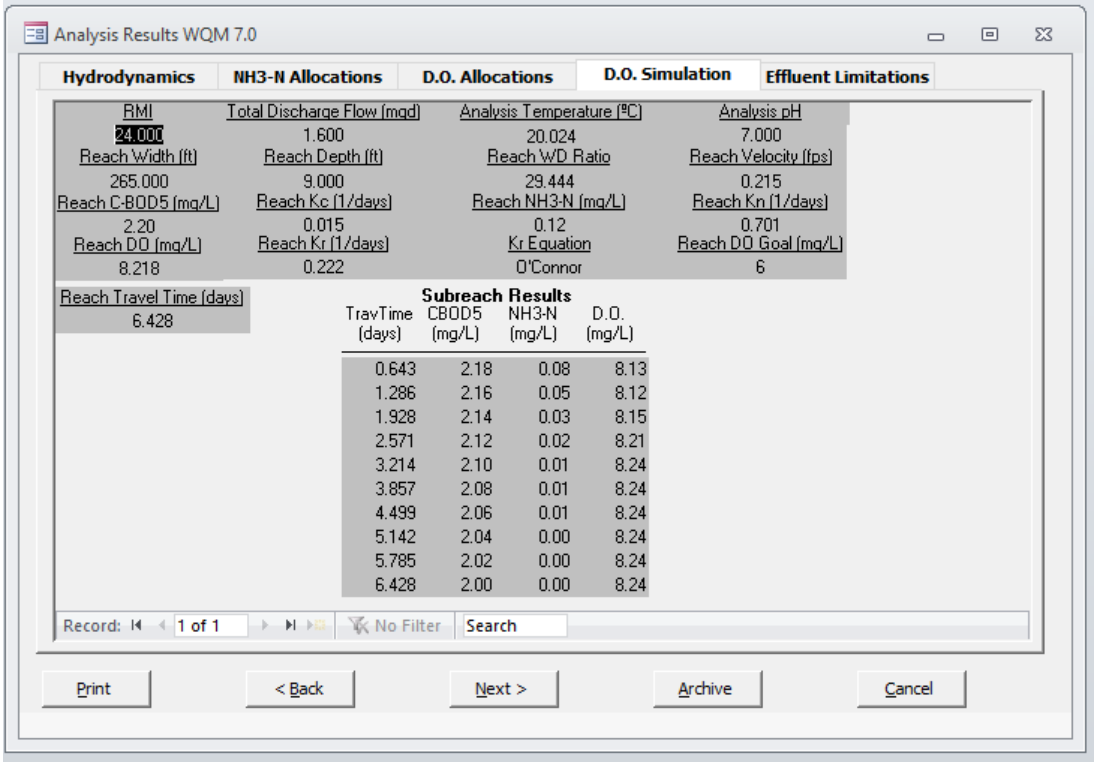
Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
24.000
Total Discharge Flow (mgd)
1.600
Analysis Temperature (°C)
20.024
Analysis pH
7.000
Reach Width (ft)
265.000
Reach Depth (ft)
9.000
Reach WD Ratio
29.444
Reach Velocity (fps)
0.215
Reach C-BOD5 (mg/L)
2.20
Reach Kc (1/days)
0.015
Reach NH3-N (mg/L)
0.12
Reach Kn (1/days)
0.701
Reach DO (mg/L)
8.218
Reach Kr (1/days)
0.222
Kr Equation
O'Connor
Reach DO Goal (mg/L)
6
Reach Travel Time (days)
6.428
Subreach Results
TravTime (days) CBOD5 (mg/L) NH3-N (mg/L) D.O. (mg/L)
0.643 2.18 0.08 8.13
1.286 2.16 0.05 8.12
1.928 2.14 0.03 8.15
2.571 2.12 0.02 8.21
3.214 2.10 0.01 8.24
3.857 2.08 0.01 8.24
4.499 2.06 0.01 8.24
5.142 2.04 0.00 8.24
5.785 2.02 0.00 8.24
6.428 2.00 0.00 8.24
Record: 1 of 1
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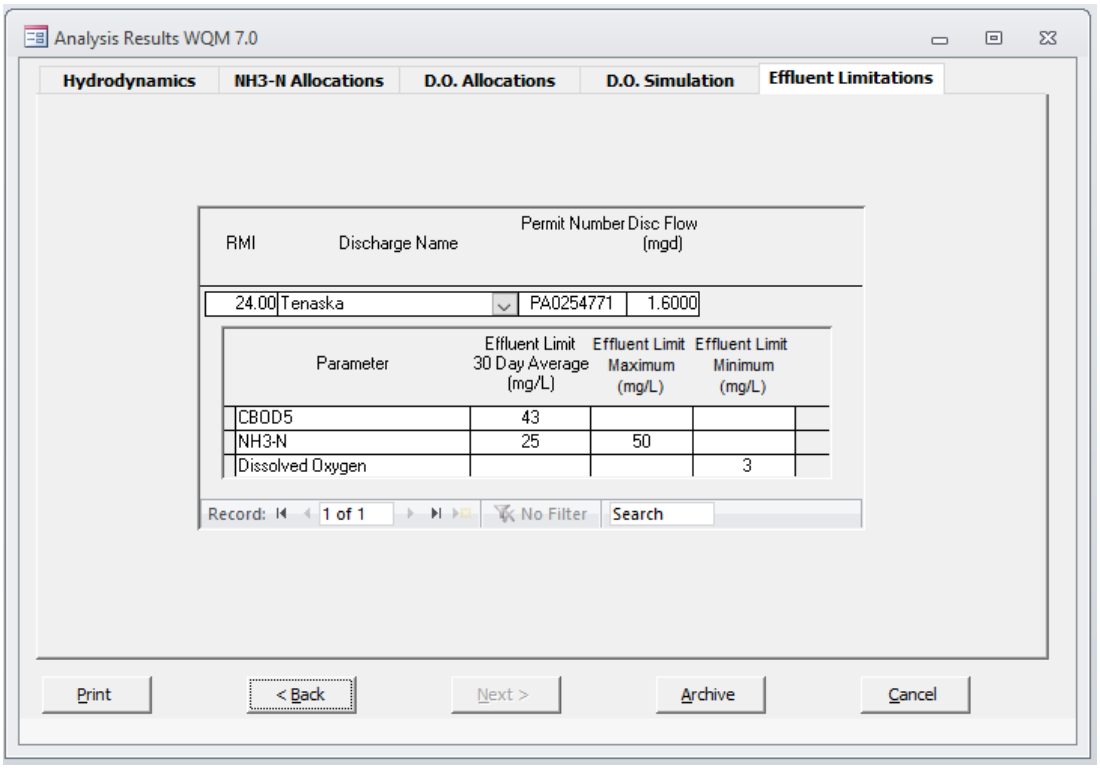
Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
24.00
Tenaska
PA0254771
1.6000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
43
NH3-N
25
50
Dissolved Oxygen
3
Record: 1 of 1
No Filter
Search
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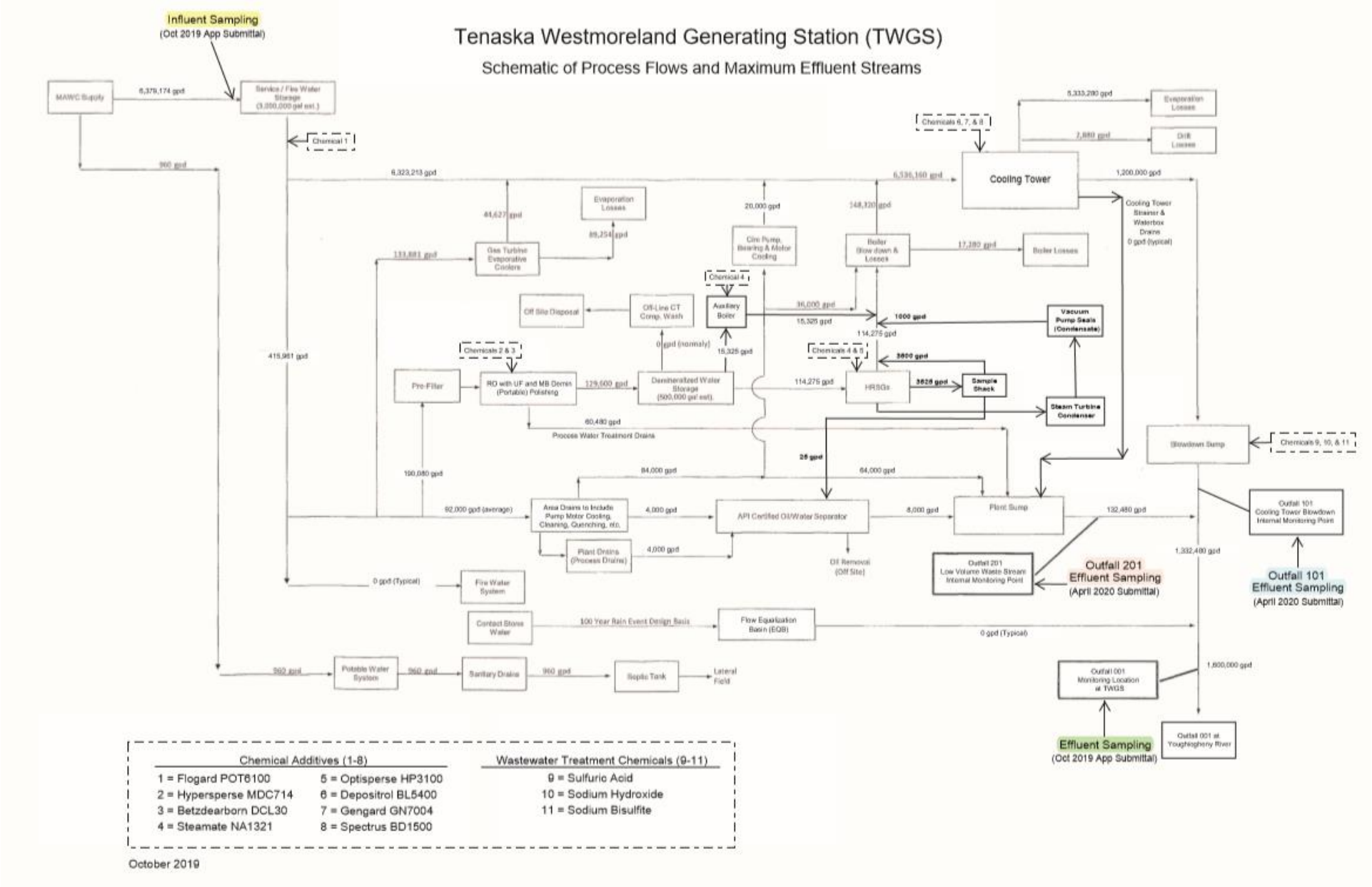
Cancel

Attachment E – Aerial Site Plan

Attachment F – Water Flow Diagram


Influent Sampling
(Oct 2019 App Submittal)
Tenaska Westmoreland Generating Station (TWGS)
Schematic of Process Flows and Maximum Effluent Streams
MAWC Supply
6,379,174 gpd
Service / Fire Water Storage (3,000,000 gal est.)
Chemical 1
960 gpd
6,323,213 gpd
6,336,160 gpd
Cooling Tower
Chemicals 6, 7, & 8
5,333,280 gpd
Evaporation Losses
7,680 gpd
Drift Losses
1,200,000 gpd
Cooling Tower Strainer & Waterbox Drains 0 gpd (typical)
Evaporation Losses
41,627 gpd
89,254 gpd
Gas Turbine Evaporative Coolers
133,881 gpd
20,000 gpd
Circ Pump Bearing & Motor Cooling
148,320 gpd
Boiler Blow-down & Losses
17,280 gpd
Boiler Losses
Chemical 4
Off Site Disposal
Off-Line CT Comp. Wash
Auxiliary Boiler
36,000 gpd
15,325 gpd
1000 gpd
Vacuum Pump Seals (Condensate)
114,275 gpd
0 gpd (normally)
15,325 gpd
Chemicals 2 & 3
Chemicals 4 & 5
3800 gpd
415,961 gpd
Pre-Filter
RO with UF and MB Demin (Portable) Polishing
129,600 gpd
Demineralized Water Storage (500,000 gal est).
114,275 gpd
HRSGs
3828 gpd
Sample Shack
Steam Turbine Condenser
60,480 gpd
Process Water Treatment Drains
Blowdown Sump
Chemicals 9, 10, & 11
25 gpd
100,080 gpd
84,000 gpd
64,000 gpd
92,000 gpd (average)
Area Drains to Include Pump Motor Cooling, Cleaning, Quenching, etc.
4,000 gpd
API Certified Oil/Water Separator
8,000 gpd
Plant Sump
132,480 gpd
Outfall 101 Cooling Tower Blowdown Internal Monitoring Point
Plant Drains (Process Drains)
4,000 gpd
Oil Removal (Off Site)
1,332,480 gpd
Outfall 201 Low Volume Waste Stream Internal Monitoring Point
Outfall 201 Effluent Sampling (April 2020 Submittal)
Outfall 101 Effluent Sampling (April 2020 Submittal)
0 gpd (Typical)
Fire Water System
Contact Storm Water
100 Year Rain Event Design Basis
Flow Equalization Basin (EQB)
0 gpd (Typical)
960 gpd
Potable Water System
960 gpd
Sanitary Drains
960 gpd
Septic Tank
Lateral Field
1,600,000 gpd
Outfall 001 Monitoring Location at TWGS
Outfall 001 at Youghiogheny River
Effluent Sampling
(Oct 2019 App Submittal)
Chemical Additives (1-8)
1 = Flogard POT6100
2 = Hypersperse MDC714
3 = Betzdearborn DCL30
4 = Steamate NA1321
5 = Optisperse HP3100
6 = Depositrol BL5400
7 = Gengard GN7004
8 = Spectrus BD1500
Wastewater Treatment Chemicals (9-11)
9 = Sulfuric Acid
10 = Sodium Hydroxide
11 = Sodium Bisulfite
October 2019

Attachment G – StreamStats

StreamStats Report - Tenaska Outfall 001

Region ID:	PA
Workspace ID:	PA20200720140310026000
Clicked Point (Latitude, Longitude):	40.16087, -79.75815
Time:	2020-07-20 10:03:31 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1520	square miles
ELEV	Mean Basin Elevation	2135.6	feet
PRECIP	Mean Annual Precipitation	45	inches
FOREST	Percentage of area covered by forest	70	percent
URBAN	Percentage of basin with urban development	2	percent
CARBON	Percentage of area of carbonate rock	0	percent

Low-Flow Statistics Parameters[100 Percent (1520 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1520	square miles	2.26	1400
ELEV	Mean Basin Elevation	2135.6	feet	1050	2580

Low-Flow Statistics Disclaimers[100 Percent (1520 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

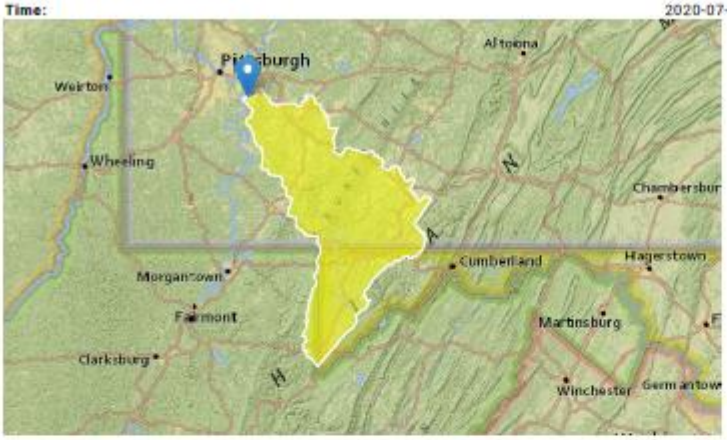
Low-Flow Statistics Flow Report[100 Percent (1520 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	191	ft^3/s
30 Day 2 Year Low Flow	272	ft^3/s
7 Day 10 Year Low Flow	95.4	ft^3/s
30 Day 10 Year Low Flow	124	ft^3/s
90 Day 10 Year Low Flow	203	ft^3/s

Low-Flow Statistics Citations

StreamStats Report - Downstream at West County Municipal Authority Intake

Region ID:	PA
Workspace ID:	PA20200724174105329000
Clicked Point (Latitude, Longitude):	40.33824, -79.86073
Time:	2020-07-24 13:41:27 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1760	square miles
ELEV	Mean Basin Elevation	1993.7	feet
PRECIP	Mean Annual Precipitation	44	inches
FOREST	Percentage of area covered by forest	67	percent
URBAN	Percentage of basin with urban development	4	percent
CARBON	Percentage of area of carbonate rock	0	percent

Low-Flow Statistics Parameters[100 Percent (1760 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1760	square miles	2.26	1400
ELEV	Mean Basin Elevation	1993.7	feet	1050	2580

Low-Flow Statistics Disclaimers[100 Percent (1760 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[100 Percent (1760 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	214	ft^3/s
30 Day 2 Year Low Flow	300	ft^3/s
7 Day 10 Year Low Flow	110	ft^3/s
30 Day 10 Year Low Flow	141	ft^3/s
90 Day 10 Year Low Flow	224	ft^3/s

Low-Flow Statistics Citations

Attachment H - January 2020 Updated NOI

3800-PM-BCW0008b Rev. 6/2019 **Applicant Name:**
Permit Application

PRODUCTION DATA FOR EFFLUENT LIMITATION GUIDELINES (ELGs)

Complete this section for each production line with an applicable ELG. See instructions and use additional sheets as necessary.

1. Production line and process description: **Cooling Tower Blowdown**
2. Applicable ELG: 40 CFR: **423** Subpart: **N**
3. Is this production considered a new source? ☒ Yes ☐ No
4. Outfall / IMP No. receiving wastewater: **001 / 101**
5. Units of production measurement for ELG: **Not applicable; ELG based on wastewater chararcteristics as defined in 40 CFR 423.11(j) and regulated at 40 CFR 423.15(b)(10)(i) through (iii).**
6. Design production capacity: **Questions 6-10 are not applicable.**
7. Complete the table below for the five last years of production. Report production data using the same units of measurement as reported in question 5.

Parameter	Production Years				
	20	20	20	20	20
Total Annual Production					
Max Monthly Production					
Month of Max Production					
Avg Annual Production					
Avg Production Hours/Day					
Avg Production Days/Month					
Avg Annual Water Usage (MGD)					
Avg Annual Wastewater Flow (MGD)					

8. Average annual production over the past five years: _____ Units: _____
9. Anticipated average annual production for the next five years: _____ Units: _____
10. Explain the basis for the anticipated average annual production for the next five years:

11. Attach any pertinent information from the applicable ELG in 40 CFR that would allow DEP to appropriately determine technology-based effluent limitations.

3800-PM-BCW0008b Rev. 6/2019 **Applicant Name:**
Permit Application

PRODUCTION DATA FOR EFFLUENT LIMITATION GUIDELINES (ELGs)

Complete this section for each production line with an applicable ELG. See instructions and use additional sheets as necessary.

1. Production line and process description: **Low Volume Waste**
2. Applicable ELG: 40 CFR: **423** Subpart: **N**
3. Is this production considered a new source? ☒ Yes ☐ No
4. Outfall / IMP No. receiving wastewater: **001 / 201**
5. Units of production measurement for ELG: **Not applicable; ELG based on wastewater characteristics as defined in 40 CFR 423.11(b) and regulated at 40 CFR 423.15(b)(3).**
6. Design production capacity: **Questions 6 - 10 are not applicable.**
7. Complete the table below for the five last years of production. Report production data using the same units of measurement as reported in question 5.

Parameter	Production Years				
	20	20	20	20	20
Total Annual Production					
Max Monthly Production					
Month of Max Production					
Avg Annual Production					
Avg Production Hours/Day					
Avg Production Days/Month					
Avg Annual Water Usage (MGD)					
Avg Annual Wastewater Flow (MGD)					

8. Average annual production over the past five years: _____ Units: _____
9. Anticipated average annual production for the next five years: _____ Units: _____
10. Explain the basis for the anticipated average annual production for the next five years:

11. Attach any pertinent information from the applicable ELG in 40 CFR that would allow DEP to appropriately determine technology-based effluent limitations.

3800-PM-BCW0008b Rev. 6/2019 **Applicant Name:**
Permit Application

ANTI-DEGRADATION

If the applicant is proposing a new or increased discharge to High Quality (HQ) or Exceptional Value (EV) waters, Module 4 (Anti Degradation Module) must be attached to the application. In addition, for HQ waters only, if the analysis concludes that the new or increased discharge will produce a measurable change in water quality, a social or economic justification (SEJ) must be attached if the applicant desires approval for the discharge.

1. Is the Anti-Degradation Module (Module 4) attached to the application? ☐ Yes ☒ No
2. Is a social or economic justification (SEJ) (HQ waters only) attached to the application? ☐ Yes ☒ No

VARIANCES

If the applicant is requesting a variance authorized under federal regulations at 40 CFR 122.21(m), complete the section below and attach to this application documentation necessary under federal regulations to support the variance request.

1. Description of variance requested: **Not Applicable**
2. Federal regulation authorizing the variance: _____
3. Supporting documentation attached to the application? ☐ Yes ☐ No

LABORATORY INFORMATION

Did an off-site laboratory perform any of the analyses required by this application? ☒ Yes ☐ No
If Yes, provide the information below. **See Additional Laboratory Information, attached.**

Name	**ALS Environmental Laboratories**	Analyses Performed:
Address	**301 Fulling Mill Road Middleton PA 17057**	Influent & Outfall 001: Pollutant Group 1 except Temperature, pH, TRC, and Fecal Coliform; Pollutant Group 2 except Aluminum
Phone	**(717) 944-5541**	
Name	**Fairway Laboratories**	Analyses Performed:
Address	**2019 Ninth Avenue Altoona, PA 16603**	Influent & Outfall 001: Fecal Coliform
Phone	**(814) 946-4306**	

COMPLIANCE HISTORY REVIEW

Is the facility owner or operator in violation of any DEP regulation, permit, order or schedule of compliance at this or any other facility?
☐ Yes ☒ No

If Yes, list each permit, order or schedule of compliance and provide compliance status. Use additional sheets as necessary.

Permit Program:		Permit No.:	
Permit Program:		Permit No.:	
Permit Program:		Permit No.:	

Brief Description of Non-Compliance:

Steps Taken to Achieve Compliance	Date(s) Compliance Achieved

Current Compliance Status: ☒ In Compliance ☐ In Non-Compliance

TENASKA PENNSYLVANIA PARTNERS, LLC

Tenaska Westmoreland Generating Station
NPDES Permit PA0254771

Renewal NPDES Permit Application - Additional Laboratory Information

Name	ALS Environmental Laboratories
Address	3352 128th Avenue Holland, MI 49424
Phone	(616) 399-6070
Analysis Performed	Influent & Outfall 001: Aluminum

Name	ALS Environmental Laboratories
Address	1565 Jefferson Road Rochester, NY 14623
Phone	(585) 288-5380
Analysis Performed	Influent & Outfall 001: Pollutant Group 3

Name	Eurofins Lancaster Laboratories
Address	2425 New Holland Pike Lancaster, PA 17601
Phone	(717) 656-2300
Analysis Performed	Influent & Outfall 001: Pollutant Groups 4 & 5 except Acrylamide

Name	SGS
Address	4405 Vineland Road Orlando, FL 32811
Phone	(407) 425-6700
Analysis Performed	Influent & Outfall 001: Acrylamide

Name	Pace Analytical Services, LLC
Address	1638 Roseytown Road Greensburg, PA 15601
Phone	(724) 850-5600
Analysis Performed	Outfalls 101 & 201: Pollutant Group 1 except TOC, Temperature, pH, Fecal Coliform, TRC, Fluoride, and Total Hardness; Dissolved Iron, Hexavalent Chromium, Cyanide, and Phenols

Name	Pace Analytical Services, LLC
Address	575 Broad Hollow Road Melville, NY 11747
Phone	(631) 694-3040
Analysis Performed	TOC & Hardness; Pollutant Group 2 except Dissolved Iron, Hexavalent Chromium, Cyanide, and Phenols; Pollutant Group 3 except 1,4-Dioxane

Name	Eurofins Lancaster Laboratories
Address	2425 New Holland Pike Lancaster, PA 17601
Phone	(717) 656-2300
Analysis Performed	Outfalls 101 & 201: Fluoride & 1,4-Dioxane

Name	Microbac Laboratories, Inc.
Address	100 Marshall Drive Warrendale, PA 15086
Phone	(724) 772-0610
Analysis Performed	Outfalls 101 & 201: Fecal Coliform

3800-PM-BCW0008b Rev. 6/2019 **Applicant Name:**
Permit Application

POLLUTANT IDENTIFICATION AND ANALYSIS

1. Summary of Required Analyses (see instructions):

Outfall / IMP No.	Pollutant Groups which must be sampled for and analyzed							Other Pollutants Analyzed
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	
001	☒	☒	☒	☒	☒	☐	☐	**None**
101	☒	☒	☒	☐	☐	☐	☐	**None**
201	☒	☒	☒	☐	☐	☐	☐	**None**
	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	
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2. Is screening for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) required? ☐ Yes ☒ No

Method used:	Describe results:

3. Other Potentially Toxic Pollutants Known or Expected to be Present in the Discharge.

a. GC/MS "Five Peaks" Pollutants (see instructions).

Outfall / IMP No.	Group Number (3 - 6)	Chemical or Compound Name	Quantitation Limit (µg/L)	Avg Effluent Concentration (µg/L)	Max Effluent Concentration (µg/L)	No. Samples Positive / No. Analyzed
Not Applicable						/
						/
						/
						/

b. Other Potential Pollutants.

Outfall / IMP No.	Chemical Substance or Compound Name	Reason/Suspected Reason for Presence in Discharge	Avg Concentration (µg/L)	Indicate if Presence is Known (K) or Suspected (S)
Not Applicable				

☐ If additional peaks were not available for one or more groups with the method used check here and attach an explanation of why the method was selected.

4. Additional Analysis Results Tables may be attached to provide any of the optional site-specific information discussed in Appendix A of the instructions.
Optional site-specific data is attached to this application? ☐ Yes ☒ No

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 1

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APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

☒ Outfall / IMP Number 101 (Show location of sampling point on Line Drawing)
☐ Treatment Facility Influent Sampling Results (Show location of sampling point on Line Drawing)
☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 1 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
BOD_5 (mg/L)	< 3.9	< 5.8					1	1	3.9	SM 5210 B-2011
COD (mg/L)	42.5	62.8					1	0	25.0	EPA 410.4 Rev. 2.0 (1993)
TOC (mg/L)	11.2	16.6					1	0	1.0	SM 5310 B-2011
TSS (mg/L)	5.0	7.4					1	0	4.0	SM 2540 D-2011
Ammonia-Nitrogen (mg/L)	0.10	0.15					1	0	0.10	EPA 350.1 Rev. 2.0 (1993)
Temperature (Winter) (F)	76.7	XXX		XXX		XXX	1	XXX	XXX	SM 2550 B-2010
Temperature (Summer) (F)	N/A	XXX		XXX		XXX	N/A	XXX	XXX	N/A
pH - Minimum (S.U.)	7.06	XXX	XXX	XXX		XXX	51	XXX	XXX	SM 4500-H+ B-2011
pH - Maximum (S.U.)	8.48	XXX	XXX	XXX		XXX	51	XXX	XXX	SM 4500-H+ B-2011
Fecal Coliform (No./100 mL)	< 1	XXX		XXX		XXX	1	1	XXX	Colilert-18/Quanti-Tray
Oil and Grease (mg/L)	< 4.8	< 5.5					1	1	4.8	EPA 1664A
TRC (mg/L)	< 0.02	XXX		XXX		XXX	1	1	0.02	SM 4500-Cl G-2011
Total Phosphorus (mg/L)	5.8	8.6					1	0	0.30	SM 4500-P E-2011
TKN (mg/L)	2.4	3.5					1	0	1.0	EPA 351.2 Rev. 2.0 (1993)
Nitrite + Nitrate-Nitrogen (mg/L)	12.0	17.7					1	0	0.10	SM 4500-NO_3^- F-2011
Total Dissolved Solids (mg/L)	1230	1818					1	0	10.0	SM 2540 C-2011
Color (Pt-Co Units)	< 5.0	XXX		XXX		XXX	1	1	5.0	SM 2120 B-2011
Bromide (mg/L)	< 0.020	< 0.030					1	1	0.020	EPA 300.0 Rev. 2.1 (1993)
Chloride (mg/L)	308	455					1	0	100	EPA 300.0 Rev. 2.1 (1993)
Sulfate (mg/L)	422	624					1	0	100	EPA 300.0 Rev. 2.1 (1993)
Sulfide (mg/L)	< 1.0	< 1.5					1	1	1.0	SM 4500-S_2^- F-2011
Surfactants (mg/L)	< 0.10	< 0.15					1	1	0.10	SM 5540 C-2011
Fluoride (mg/L)	0.32	0.47					1	0	0.031	SM 4500-F C-2011
Total Hardness (mg/L)	519	767					1	0	0.830	SM 2340 B-2011

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 2

Please read instructions carefully before completing this form.

APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

☒ Outfall / IMP Number 101 (Show location of sampling point on Line Drawing)
☐ Treatment Facility Influent Sampling Results (Show location of sampling point on Line Drawing)
☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 2 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Aluminum, Total (ug/L)	< 60.0 J	< 0.09					1	1	125	EPA 200.8 Rev. 5.4 (1994)
Antimony, Total (ug/L)	1.3	0.002					1	0	0.40	EPA 200.8 Rev. 5.4 (1994)
Arsenic, Total (ug/L)	< 0.48 J	< 0.0007					1	1	1.0	EPA 200.8 Rev. 5.4 (1994)
Barium, Total (ug/L)	324	0.5					1	0	2.0	EPA 200.8 Rev. 5.4 (1994)
Beryllium, Total (ug/L)	< 0.30	< 0.0004					1	1	0.30	EPA 200.8 Rev. 5.4 (1994)
Boron, Total (ug/L)	118	0.2					1	0	50.0	EPA 200.7 Rev. 4.4 (1994)
Cadmium, Total (ug/L)	< 0.17 J	< 0.0003					1	1	1.0	EPA 200.8 Rev. 5.4 (1994)
Chromium, Total (ug/L)	< 4.2 J	< 0.006					1	1	35.0	EPA 200.8 Rev. 5.4 (1994)
Chromium, Hexavalent (ug/L)	< 0.010	< 0.00001					1	1	0.010	SM 3500-Cr B-2011
Cobalt, Total (ug/L)	0.53	0.0008					1	0	0.50	EPA 200.8 Rev. 5.4 (1994)
Copper, Total (ug/L)	4.1	0.006					1	0	2.0	EPA 200.8 Rev. 5.4 (1994)
Cyanide, Total (ug/L)	0.015	0.00002					1	0	0.010	EPA 335.4 Rev. 1.0 (1993)
Iron, Total (ug/L)	87.8	0.1					1	0	20.0	EPA 200.7 Rev. 4.4 (1994)
Iron, Dissolved (ug/L)	< 60.4 J	< 0.09					1	1	70.0	EPA 200.7 Rev. 4.4 (1994)
Lead, Total (ug/L)	< 0.46 J	< 0.0007					1	1	1.0	EPA 200.8 Rev. 5.4 (1994)
Manganese, Total (ug/L)	11.7	0.02					1	0	2.5	EPA 200.8 Rev. 5.4 (1994)
Mercury, Total (ug/L)	< 0.20	< 0.0003					1	1	0.20	EPA 245.1 Rev. 3.0 (1994)
Molybdenum, Total (ug/L)	< 8.8 J	< 0.01					1	1	10.0	EPA 200.8 Rev. 5.4 (1994)
Nickel, Total (ug/L)	19.8	0.03					1	0	0.50	EPA 200.8 Rev. 5.4 (1994)
Phenols, Total (ug/L)	< 0.050	< 0.00007					1	1	0.050	EPA 420.1 (Rev. 1978)
Selenium, Total (ug/L)	< 1.5 J	< 0.002					1	1	2.0	EPA 200.8 Rev. 5.4 (1994)
Silver, Total (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 200.8 Rev. 5.4 (1994)
Thallium, Total (ug/L)	< 0.30	< 0.0004					1	1	0.30	EPA 200.8 Rev. 5.4 (1994)
Zinc, Total (ug/L)	15.8	0.02					1	0	5.0	EPA 200.8 Rev. 5.4 (1994)

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 3 (PAGE 1 OF 2)

Please read instructions carefully before completing this form.

APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

☒ Outfall / IMP Number 101 (Show location of sampling point on Line Drawing)
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☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 3 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Acrolein (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Acrylonitrile (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Benzene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Bromoform (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Carbon Tetrachloride (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Chlorobenzene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Chlorodibromomethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Chloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
2-Chloroethylvinyl Ether (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Chloroform (ug/L)	1.6	0.002					1	0	1.0	EPA 624.1
Dichlorobromomethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,1-Dichloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,2-Dichloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,1-Dichloroethylene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,2-Dichloropropane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,3-Dichloropropylene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,4-Dioxane (ug/L)	< 2.0	< 0.003					1	1	2.0	EPA 625.1
Ethylbenzene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Methyl Bromide (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Methyl Chloride (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Methylene Chloride (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,1,2,2-Tetrachloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Tetrachloroethylene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 3 (PAGE 2 OF 2)

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APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

☒ **Outfall / IMP Number** 101 (Show location of sampling point on Line Drawing)
☐ Treatment Facility Influent Sampling Results (Show location of sampling point on Line Drawing)
☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 3 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Toluene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,2-Trans-Dichloroethylene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,1,1-Trichloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
1,1,2-Trichloroethane (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Trichloroethylene (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1
Vinyl Chloride (ug/L)	< 1.0	< 0.001					1	1	1.0	EPA 624.1

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 1

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☐ Treatment Facility Influent Sampling Results (Show location of sampling point on Line Drawing)
☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 1 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
BOD_5 (mg/L)	< 10.7	< 15.6					3	3	6.1	SM 5210 B-2011
COD (mg/L)	< 25.0 J	< 27.6					3	3	25.0	EPA 410.4 Rev. 2.0 (1993)
TOC (mg/L)	2.3	3.4					3	0	1.0	SM 5310 B-2011
TSS (mg/L)	< 4.0	< 5.8					3	3	4.0	SM 2540 D-2011
Ammonia-Nitrogen (mg/L)	< 0.13	< 0.19					3	2	0.10	EPA 350.1 Rev. 2.0 (1993)
Temperature (Winter) (F)	51.7	XXX		XXX		XXX	3	XXX	XXX	SM 2550 B-2010
Temperature (Summer) (F)	N/A	XXX		XXX		XXX	N/A	XXX	XXX	N/A
pH - Minimum (S.U.)	7.00	XXX	XXX	XXX		XXX	52	XXX	XXX	SM 4500-H^+ B-2011
pH - Maximum (S.U.)	8.60	XXX	XXX	XXX		XXX	52	XXX	XXX	SM 4500-H^+ B-2011
Fecal Coliform (No./100 mL)	< 1	XXX		XXX		XXX	3	3	XXX	Colilert-18/Quanti-Tray
Oil and Grease (mg/L)	< 6.9	< 10.1					52	50	4.7	EPA 1664 A, 1664B
TRC (mg/L)	0.49	XXX		XXX		XXX	3	0	0.02	SM 4500-Cl G-2011
Total Phosphorus (mg/L)	3.9	4.3					3	0	0.30	SM 4500-P E-2011
TKN (mg/L)	< 1.2	< 1.8					3	2	1.0	EPA 351.2 Rev. 2.0 (1993)
Nitrite + Nitrate-Nitrogen (mg/L)	2.2	3.2					3	0	0.10	SM 4500-NO_3^- F-2011
Total Dissolved Solids (mg/L)	202	295					3	0	10.0	SM 2540 C-2011
Color (Pt-Co Units)	< 5.0	XXX		XXX		XXX	3	3	5.0	SM 2120 B-2011
Bromide (mg/L)	< 0.020	< 0.029					3	3	0.020	EPA 300.0 Rev. 2.1 (1993)
Chloride (mg/L)	48.2	66.8					3	0	6.7	EPA 300.0 Rev. 2.1 (1993)
Sulfate (mg/L)	59.6	85.5					3	0	6.7	EPA 300.0 Rev. 2.1 (1993)
Sulfide (mg/L)	< 1.0	< 1.5					3	3	1.0	SM 4500-S_2^- F-2011
Surfactants (mg/L)	< 0.10	< 0.15					3	3	0.10	SM 5540 C-2011
Fluoride (mg/L)	< 0.066 J	< 0.10					3	3	0.11	SM 4500-F C-2011
Total Hardness (mg/L)	94.6	122.6					3	0	0.830	SM 2340 B-2011

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ANALYSIS RESULTS TABLE

POLLUTANT GROUP 2

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☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 2 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Aluminum, Total (ug/L)	< 51.1 J	< 74.7					3	2	25.0	EPA 200.8 Rev. 5.4 (1994)
Antimony, Total (ug/L)	< 0.24 J	< 0.35					3	3	0.40	EPA 200.8 Rev. 5.4 (1994)
Arsenic, Total (ug/L)	< 1.0 J	< 1.0					3	3	1.0	EPA 200.8 Rev. 5.4 (1994)
Barium, Total (ug/L)	105	153					3	0	2.0	EPA 200.8 Rev. 5.4 (1994)
Beryllium, Total (ug/L)	< 1.5 J	< 1.7					3	3	0.70	EPA 200.8 Rev. 5.4 (1994)
Boron, Total (ug/L)	< 50.0 J	< 73.1					3	3	50.0	EPA 200.7 Rev. 4.4 (1994)
Cadmium, Total (ug/L)	< 0.20 J	< 0.29					3	3	1.0	EPA 200.8 Rev. 5.4 (1994)
Chromium, Total (ug/L)	< 1.7 J	< 1.9					3	3	7.0	EPA 200.8 Rev. 5.4 (1994)
Chromium, Hexavalent (ug/L)	< 0.010	0.015					3	3	0.010	SM 3500-Cr B-2011
Cobalt, Total (ug/L)	< 0.50 J	< 0.48					3	3	0.50	EPA 200.8 Rev. 5.4 (1994)
Copper, Total (ug/L)	< 2.4 J	< 3.5					3	1	2.0	EPA 200.8 Rev. 5.4 (1994)
Cyanide, Total (ug/L)	< 0.016 J	< 0.016					3	1	0.010	EPA 335.4 Rev. 1.0 (1993)
Iron, Total (ug/L)	28.4	36.7					3	0	20.0	EPA 200.7 Rev. 4.4 (1994)
Iron, Dissolved (ug/L)	< 70.0	< 102.3					3	3	70.0	EPA 200.7 Rev. 4.4 (1994)
Lead, Total (ug/L)	< 0.38 J	< 0.51					3	3	1.0	EPA 200.8 Rev. 5.4 (1994)
Manganese, Total (ug/L)	3.6	5.3					3	0	0.50	EPA 200.8 Rev. 5.4 (1994)
Mercury, Total (ug/L)	< 0.20	0.29					3	3	0.20	EPA 245.1 Rev. 3.0 (1994)
Molybdenum, Total (ug/L)	< 1.9 J	2.8					3	3	10.0	EPA 200.8 Rev. 5.4 (1994)
Nickel, Total (ug/L)	7.2	10.5					3	0	0.50	EPA 200.8 Rev. 5.4 (1994)
Phenols, Total (ug/L)	< 0.050 J	< 0.073					3	3	0.050	EPA 420.1 (Rev. 1978)
Selenium, Total (ug/L)	< 2.0 J	< 1.9					3	3	2.0	EPA 200.8 Rev. 5.4 (1994)
Silver, Total (ug/L)	< 1.0	< 1.5					3	3	1.0	EPA 200.8 Rev. 5.4 (1994)
Thallium, Total (ug/L)	< 0.37 J	< 0.54					3	2	0.30	EPA 200.8 Rev. 5.4 (1994)
Zinc, Total (ug/L)	12.3	18.0					3	0	5.0	EPA 200.8 Rev. 5.4 (1994)

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ANALYSIS RESULTS TABLE

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APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

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☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 3 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Acrolein (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Acrylonitrile (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Benzene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Bromoform (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Carbon Tetrachloride (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Chlorobenzene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Chlorodibromomethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Chloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
2-Chloroethylvinyl Ether (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Chloroform (ug/L)	34.0	0.050					3	0	1.0	EPA 624.1
Dichlorobromomethane (ug/L)	6.4	< 0.009					3	0	1.0	EPA 624.1
1,1-Dichloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,2-Dichloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,1-Dichloroethylene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,2-Dichloropropane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,3-Dichloropropylene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,4-Dioxane (ug/L)	< 2.0	< 0.003					3	3	2.0	EPA 625.1
Ethylbenzene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Methyl Bromide (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Methyl Chloride (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Methylene Chloride (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,1,2,2-Tetrachloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Tetrachloroethylene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1

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Permit Application

ANALYSIS RESULTS TABLE

POLLUTANT GROUP 3 (PAGE 2 OF 2)

Please read instructions carefully before completing this form.

APPLICANT NAME	Tenaska Pennsylvania Partners, LLC

☒ **Outfall / IMP Number** 201 (Show location of sampling point on Line Drawing)
☐ Treatment Facility Influent Sampling Results (Show location of sampling point on Line Drawing)
☐ Intake Sampling Results (Specify Source: _____)
☐ Background (Upstream) Sampling Results (Specify Location: _____)
☐ New Discharge (Basis for Information: _____)

POLLUTANT GROUP 3 PARAMETERS	CONCENTRATION / MASS PRESENT						No. Analysis	No. "Non-Detect" Results	QL Used	Method Used
	Min/Max Daily Value		Max Avg Monthly Value		Long-Term Avg Value					
	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)	Conc	Mass (lbs/day)				
Toluene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,2-Trans-Dichloroethylene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,1,1-Trichloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
1,1,2-Trichloroethane (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Trichloroethylene (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1
Vinyl Chloride (ug/L)	< 1.0	< 0.001					3	3	1.0	EPA 624.1