pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**
Facility Type	**Industrial**
Major / Minor	**Minor**

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

Application No.	**PA0255335 A-2**
APS ID	**1108008**
Authorization ID	**1474222**

Applicant and Facility Information

Applicant Name	**Allegheny Energy Supply Co. LLC**	Facility Name	**Mitchell FGD Landfill**
Applicant Address	800 Cabin Hill Drive	Facility Address	Route 837
	Greensburg, PA 15601		Courtney, PA 15067
Applicant Contact	Carol Trembly	Facility Contact	Carol Trembly
Applicant Phone	304-480-1230	Facility Phone	304-480-1230
Applicant Email	ctrembly@firstenergycorp.com	Facility Email	ctrembly@firstenergycorp.com
Client ID	95418	Site ID	827420
SIC Code	4953	Municipality	Union Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Washington
Date Application Received	February 26, 2024	EPA Waived?	Yes
Date Application Accepted	February 26, 2024	If No, Reason	

Purpose of Application: Amendment Application to modify the current NPDES permit to add an additional, emergency Outfall

Summary of Review

The Department received an NPDES Permit Amendment application from Allegheny Energy Supply Company (AESC) for its Mitchell FGD Landfill on February 20, 2024. The amendment application is to include an additional Outfall to the NPDES permit.

Site Summary:

Mitchell Flue Gas Desulfurization (FGD) Landfill is an inactive Solid Waste disposal facility. The landfill historically received coal combustion residuals (CCRs) from the deactivated Mitchell Power Station and has been inactive since October 2013. The Landfill is regulated by the Department under both the Clean Water and Solid Waste Permitting programs. The facility is a 43-acre, unlined captive facility that accepted CCRs (fly ash, bottom ash, and FGD material) from the Mitchell Power station beginning in 1982 and is currently regulated under the Department's Solids Waste Permit No. 300809. The Mitchell Power Station was decommissioned in October 2013 and the Landfill has received no additional CCRs since that time. The landfill has not attained final closure under its Solid Waste permit but does have a one-foot-thick vegetated intermediate cover soil layer placed atop all the landfilled CCRs. Although the Landfill is unlined, the entire disposal area footprint is underlain by a two-foot-thick bottom ash leachate and ground collection blanket that flows into two toe drains. The two toe drains discharge into an approximately 0.9-acre sedimentation pond identified as the Mitchell Sludge Sedimentation Pond, where it comingles with stormwater runoff from the landfill's top surface and benches. The pond is a valley impoundment formed by a single downstream embankment that meets the height criteria to be classified and regulated as a dam under PADEP dam Safety Permit D63-100. The Pond has a concrete riser structure that directs discharges to the head waters of an unnamed tributary to the Monongahela River. This discharge location is identified as Outfall 007. The unnamed tributary

Approve	Deny	Signatures	Date
X		Adam Olesnanik, P.E. / Environmental Engineer	March 11, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	March 11, 2024

Summary of Review

flows southeast towards State Route 837, a railroad line, and beneath the Mitchell Power Station property before it discharges to the Monongahela River.

Historically, both the landfill and the power station were regulated under the same NPDES permit; however, as part of the latest permit renewal, the landfill was issued a separate NPDES permit. That permit imposed new water quality-based effluent limitations (WQBELs) for arsenic and boron that will apply to the landfill's discharge at Outfall 007 effective September 1, 2024. In accordance with a condition of the new permit, on November 24, 2021, AESC submitted an alternative work plan to the Department to meet the WQBELs. The work plan determined that rerouting the pond discharge via a buried pipeline from the current Outfall 007 location directly to a larger body of water, as has been done at other CCR disposal sites, was feasible and was the preferred compliance option. The larger body of water would be the Monongahela River since there are no appreciable tributaries to the unnamed tributary downstream of the existing Outfall 007 location.

Outfall Relocation Project:

The Department issued a NPDES permit amendment (PA0255335A-1) and a Water Quality Management Permit Amendment (6380204A-1) on February 23, 2023 approving the Outfall Relocation Project. The Outfall Relocation Project consisted of the construction of a discharge pipeline that will relocate that discharge from Outfall 007 directly to the Monongahela River utilizing a gravity flow pipeline running along the existing landfill access road and discharge into an existing concrete inlet structure that is located on the 48-inch culvert pipe running below SR 837, the railroad, and the Mitchell Power Station property.

Outfall Relocation Project Changes:

AESC is requesting to retain partial function (emergency operation only) of the landfill sedimentation pond's existing principal discharge structures, 10-inch diameter orifice and existing 42-inch diameter discharge pipe that outlets to the unnamed tributary to the Monongahela River at the existing location of Outfall 007. The existing discharge pipe concrete endwall will remain unchanged and will effectively be a new NPDES outfall.

AESC is proposing the following design revision to the Outfall Relocation Project:

> No longer lowering the existing dam embankment and emergency spillway (i.e., leaving them as they currently exist).
>
> Raising the new discharge structure's concrete headwall and gravity flow pipeline to maintain a normal pool elevation of 994.25 feet
>
> Performing in-place abandonment of the pond's existing principal discharge riser structure by grouting instead of using steel place, while maintaining the ability to release water from the existing discharge structure if needed in an emergency situation.

As a result of abandoning the existing principal discharge riser and positioning the new discharge structure near the top of the pond embankment, the Department's Bureau of Waterways Engineering and Wetlands expressed a preference to have a way to draw down the water within the pond via gravity instead of pumping should an emergency arise (e.g., instability or potential overtopping of the dam embankment). The existing principal discharge riser utilizes a 10-inch diameter orifice with a gate valve positioned at elevation 983 feet (1 foot above the pond's sediment storage level). AESC is proposing to retain the function of this orifice and gate valve via new piping that would pass through the proposed grout seal and into the riser's existing 42-inch diameter discharge pipe that outlets to the unnamed tributary to Monongahela River at the existing location of Outfall 007. Under normal operating conditions the valve would remain closed and no flow would be directed to the unnamed tributary.

The pond's emergency spillway also discharges to the same location as the existing riser discharge pipe and AESC considers the proposed drawdown pipe an extension of the emergency controls associated with the pond. The riser's existing discharge pipe concrete endwall will remain unchanged (other than removal and reuse of the flow measurement weir at relocated Outfall 007) and should this drawdown pipe need to be used, AESC personnel will retain the ability to obtain grab samples in a similar manner as flow discharging through the adjoining emergency spillway.

Summary of Review

AESC requests that the NPDES permit to include an additional outfall for monitoring the discharges from the emergency drawdown system to the unnamed tributary to the Monongahela River using the effluent limits previously established for this location and with a monitoring frequency limited to when emergency drawdown is implemented.

Amendment Changes:

The Department is proposing to rename the relocated outfall that will discharge to the Monongahela River as Outfall 001. This outfall was previously known as the relocated Outfall 007 and had the Final Effluent limitations of Outfall 007 in Part A of the current Permit (PA0255335A-1) issued on February 23, 2023.

The emergency drawdown discharge will be known as Outfall 007. This is because the outfall will discharge to the same discharge location as the current Outfall 007.

Changes to PA0255335A-1 include:

- The Type of Effluent for Outfall 007 in Part A has been changed to IW Process Effluent without ELG, to correct a typographical error that was in PA0255335 A-1.
- The discharge period for the Interim Effluent Limits of Outfall 007 has been changed to September 1, 2021 through August 31, 2024.
- The Final Limitation for Outfall 007 have been changed to be the final limitation applicable for the current discharge location of Outfall 007, i.e. the discharge to the unnamed tributary to Monongahela River. The discharge period for the Final Effluent Limits at Outfall 007 are from September 1, 2024 through August 31, 2026. The Type of Effluent for the Final Effluent Limitations of Outfall 007 is Emergency Discharge of IW Process Effluent without ELG.
- The Department has re-evaluated the discharge via Outfall 007 to the unnamed tributary to the Monongahela River as part of this amendment to determine if additional water quality-based limitations are needed at the point of discharge. Based on this re-evaluation, Outfall 007 will receive new monitoring requirements for Total Aluminum, Total Cobalt, and Dissolved Iron. Outfall 007 will also receive new WQBELs for Total Manganese.
- The Final Limitation for Outfall 007 in PA0255335A-1 have been changed to the limits applicable to Outfall 001. The discharge period for Outfall 001 is from Completion of Construction through August 31, 2026.
- Footnote 3 of PA0255335A-1 has been removed from the permit because it is no longer appliable.
- A new Footnote 3 has been added indicating when to sample the emergency drawdown discharges via Outfall 007.
- Part C. II. has been revised to reference Outfall 001.
- The Department has recently implemented a new monitoring initiative for Per- and Polyfluoroalkyl Substances (PFAS). Monitoring for PFOA, PFOS, PFBS, and HFPO-DA will be imposed on the discharges from Outfall 001 to be consistent with this initiative.

Conclusion and Recommendations:

The site was last inspection on May 11, 2023, no violations were noted. The permittee has no open violations.

Draft Permit issuance is recommended.

Public Participation

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 or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that

Summary of Review
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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Discharge Flow (MGD)	0.068
Latitude	40º 13' 26"	Longitude	-79º 58' 37"
Quad Name	Monongahela	Quad Code	1706
Wastewater Description:	Coal Ash Landfill Leachate, Seeps, Springs, and Stormwater (Emergency Discharge After the construction of Outfall 001)		
Receiving Waters	Unnamed Tributary of Monongahela	Stream Code	39584
NHD Com ID	134839796	RMI	0.56
Drainage Area	0.1	Yield (cfs/mi^2)	0.00459
Q_{7-10} Flow (cfs)	0.000459	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	980	Slope (ft/ft)	0.085
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	PA American Water Co -Pittsburgh		
PWS Waters	Monongahela River	Flow at Intake (cfs)	550
PWS RMI	25.55	Distance from Outfall (mi)	4.45

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001 (previously the relocation Outfall 007)	Discharge Flow (MGD)	0.068
Latitude	40º 13' 24"	Longitude	-79º 58' 11"
Quad Name	Monongahela	Quad Code	1706
Wastewater Description:	Coal Ash Landfill Leachate, Seeps, Springs, and Stormwater		

Receiving Waters	Monongahela River	Stream Code	37185
NHD Com ID	99409154	RMI	29.5
Drainage Area	5,320	Yield (cfs/mi^2)	0.103
Q_{7-10} Flow (cfs)	550	Q_{7-10} Basis	U.S Army Corp of Engineers
Elevation (ft)	727	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	PCB		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Monongahela River TMDL

Nearest Downstream Public Water Supply Intake	PA American Water Co -Pittsburgh		
PWS Waters	Monongahela River	Flow at Intake (cfs)	550
PWS RMI	25.5	Distance from Outfall (mi)	3.63

Development of Effluent Limitations

Outfall No. 007 **Design Flow (MGD)** 0.068
Latitude 40º 13' 36.00" **Longitude** -79º 58' 41.00"
Wastewater Description: IW Process Effluent without ELG (Emergency discharge after the construction of Outfall 001)

Technology-Based Limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

As oil-bearing wastewaters, discharges from Outfall 007 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2).

Waste may not contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 1.

Table 1: Regulatory Effluent Standards and Monitoring Requirements for Outfall 007

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, Dissolved	-	7.0	mg/L
Oil & Grease	15	30	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent Limitations:

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 007

The discharge from Outfall 007 are being reevaluated to determine if additional WQBELs are needed. Discharges from Outfall 007 are evaluated based on concentrations reported on the 2018 renewal application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants 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]. The Toxics Management Spread Sheet is run with

the discharge and receiving stream characteristics shown in Table 2. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment B of this Fact Sheet. The Toxics Management Spread Sheet recommend WQBELs in Table 3.

Table 2: TMS Inputs for Outfall 007

Parameter	**Value**
River Mile Index	0.56
Discharge Flow (MGD)	0.068
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.1
Q_{7-10} (cfs)	0.000459
Low-flow yield (cfs/mi^2)	0.00459
Elevation (ft)	980
Slope	0.073

Table 3. WQBELs for Outfall 007

Parameter	Monthly average (mg/L)	Daily maximum (mg/L)
Total Aluminum	Report	Report
Total Arsenic (µg/L)	10.0	15.7
Total Boron	1.6	2.5
Total Cobalt	Report	Report
Dissolved Iron	Report	Report
Total Iron	Report	Report
Total Manganese	1.0	1.6

Anti-Backsliding:

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 4. The current permit includes monitoring for Arsenic and Boron and the following footnote:

The Final Effluent Discharge is being relocated to the Monongahela River. The discharge is to be conveyed on or before September 1, 2024. If the effluent discharge is not relocated to the Monongahela River by September 1, 2024, the Final Limits for Total Arsenic (10.031 µg/L as an average monthly and 15.651 µg/L as a daily maximum) and the Final Limits for Total Boron (1.605 mg/L as an average monthly and 2.504 mg/L as a daily maximum) are applicable to the discharge.

AESC has requested that an Outfall that discharges emergency drawn down of the site's sedimentation pond, which would be a discharge via the current Outfall 007, be added to the permit. Therefore, these final WQBELs will need to be

included as limitation in Part A of the permit and be effective on September 1, 2024 because effluent can discharge to the unnamed tributary during emergency situations after the effluent has been rerouted to the Monongahela River.

Table 4. Current Interim Limits for Outfall 007

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Sample Type	Monitoring Frequency
Flow	Monitor	Monitor	Measure	2/Month
TSS	30.0	100.0	Grab	2/Month
TDS	Monitor	Monitor	Grab	2/Month
Oil & Grease	15.0	20.0	Grab	2/Month
Iron, Total	3.5	7.0	Grab	2/Month
Arsenic (µg/L)	Monitor	Monitor	Grab	2/Month
Boron	Monitor	Monitor	Grab	2/Month
pH	Between 6.0 and 9.0		Grab	2/Month

Final Effluent Limitations:

The final effluent limitations for Outfall 007 are displayed in Table 5 and 6 below, they are the most stringent values from the above effluent limitation development. The final limits at Outfall 007 become effective on September 1, 2024. The sample frequency of the final limits at Outfall 007 will be twice per discharge because Outfall 007 will only discharge during emergency situations after Outfall 001 is constructed and is the primary outfall for the wastewater. A footnote has been added to the monitoring frequency of the Final Limits at Outfall 007 specifying when a sample shall be taken. When there is a discharge from Outfall 007, the Permittee shall sample the discharge twice per day. The Permittee shall take the first sample within the first 15 minutes of commencement of the discharge. When there is no discharge from Outfall 007 the permittee should enter a No Discharge Indicator (NODI) Code of “GG” on DMRs. Outfall 007 received new WQBELs for Manganese and new monitoring requirements for Aluminum, Cobalt, and Dissolved Iron. The Manganese limits will become effective on September 1, 2024 with the other WQBELs for Arsenic and Boron because they are new to the permit and it is uncertain if AESC can meet them upon permit amendment issuance. A monitor and report requirement will be imposed for Manganese upon permit amendment issuance through September 1, 2024. The Department is not granting a larger compliance schedule for Manganese because AESC plans to relocate the primary outfall by September 1, 2024 to a body of water where the WQBELs are not needed. The only discharges that should occur after September 1, 2024 are emergency discharges and will be infrequent.

Table 5. Proposed Interim Limits for Outfall 007 (effective from Permit Effective Date through September 1, 2024)

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Sample Type	Monitoring Frequency
Flow	Monitor	Monitor	Measure	2/Month
TSS	30.0	100.0	Grab	2/Month
TDS	Monitor	Monitor	Grab	2/Month
Oil & Grease	15.0	20.0	Grab	2/Month
Total Aluminum	3.5	7.0	Grab	2/Month
Total Arsenic (µg/L)	Monitor	Monitor	Grab	2/Month
Total Boron	Monitor	Monitor	Grab	2/Month
Total Cobalt	Monitor	Monitor	Grab	2/Month
Dissolved Iron	Monitor	Monitor	Grab	2/Month
Total Iron	3.5	7.0	Grab	2/Month
Total Manganese	Monitor	Monitor	Grab	2/Month
pH	Between 6.0 and 9.0		Grab	2/Month

Table 6. Proposed Final Limits for Outfall 007 (effective from September 1, 2024 through Permit Expiration Date)

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Sample Type	Monitoring Frequency
Flow	Monitor	Monitor	Measure	2/Day
TSS	30.0	100.0	Grab	2/Day
TDS	Monitor	Monitor	Grab	2/Day
Oil & Grease	15.0	20.0	Grab	2/Day
Total Aluminum	Monitor	Monitor	Grab	2/Day

Table 6. Proposed Final Limits for Outfall 007 (effective from September 1, 2024 through Permit Expiration Date)

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Sample Type	Monitoring Frequency
Total Arsenic (µg/L)	10.0	15.7	Grab	2/Day
Total Boron	1.6	2.5	Grab	2/Day
Total Cobalt	Monitor	Monitor	Grab	2/Day
Dissolved Iron	Monitor	Monitor	Grab	2/Day
Total Iron	3.5	7.0	Grab	2/Day
Total Manganese	1.0	1.6	Grab	2/Day
pH	Between 6.0 and 9.0		Grab	2/Day

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.068
Latitude 40º 13' 24" **Longitude** -79º 58' 11"
Wastewater Description: IW Process Effluent without ELG

Technology Based Effluent Limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

As oil-bearing wastewaters, discharges from Outfall 001 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2)

Waste may not contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 7.

Table 7: Regulatory Effluent Standards and Monitoring Requirements for Outfall 001

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, Dissolved	-	7.0	mg/L
Oil & Grease	15	30	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Allegheny Energy Supply's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, Allegheny Energy Supply does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. Even though Allegheny Energy Supply did not report results for PFOA, PFOS, PFBS, and HFPO-DA on the permit application, as a facility operating in a suspected non-source industry, it is reasonable to conclude that if Allegheny Energy Supply did report results for PFOA, PFOS, PFBS, and HFPO-DA on the application, the results may have been non-detect values, which would subject Allegheny Energy Supply to the annual monitoring requirements described in Section II.I.b of the SOP.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in Allegheny Energy Supply's case), then the monitoring may be discontinued.

Water Quality-Based Effluent Limitations:

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the 2018 renewal application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants 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]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 8. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge

concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment D of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 001.

Table 8: TMS Inputs for Outfall 001

Parameter	**Value**
River Mile Index	29.5
Discharge Flow (MGD)	0.068
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	5,320
Q_{7-10} (cfs)	550
Low-flow yield (cfs/mi^2)	0.103
Elevation (ft)	727
Slope	0.0001

Anti-Backsliding:

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 9. This discharge is being renamed as Outfall 001 as part of this permit amendment. The discharge that will be from Outfall 001 was previously permitted as the discharge from the relocated Outfall 007, and the Final Limits of Outfall 007 in the current permit. This outfall is subject to the previous Final Limits of Outfall 007.

Table 9. Current Final Permit Limits for the relocated Outfall 007
Effective from Conveyance of Effluent to Monongahela River

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Final Effluent Limitations:

The final effluent limitations for the relocated Outfall 001 are displayed in Table 10 below, they are the most stringent values from the above effluent limitation development.

Table 10. Proposed Permit Limits for Outfall 001
Effective from Completion of Construction through Permit Expiration

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
PFOA (ng/L)	XXX	Monitor	Monitor	XXX	Grab	1/Year
PFOS (ng/L)	XXX	Monitor	Monitor	XXX	Grab	1/Year
PFBS (ng/L)	XXX	Monitor	Monitor	XXX	Grab	1/Year
HFPO-DA (ng/L)	XXX	Monitor	Monitor	XXX	Grab	1/Year
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B and C**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachment A:

Outfall 007 StreamStats Report

007 StreamStats Report

Region ID: PA
Workspace ID: PA20240228165552170000
Clicked Point (Latitude, Longitude): 40.22396, -79.97652
Time: 2024-02-28 11:56:13 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.1	square miles
ELEV	Mean Basin Elevation	1107	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.1	square miles	2.26	1400
ELEV	Mean Basin Elevation	1107	feet	1050	2580

Low-Flow Statistics Disclaimers [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 [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00191	ft^3/s
30 Day 2 Year Low Flow	0.00407	ft^3/s
7 Day 10 Year Low Flow	0.000459	ft^3/s

Statistic	Value	Unit
30 Day 10 Year Low Flow	0.00116	ft^3/s
90 Day 10 Year Low Flow	0.00261	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment B:

Outfall 007 Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Mitchell FGD Landfill** NPDES Permit No.: **PA0255335** Outfall No.: **007**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Coal Ash Leachate**

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
0.068	1266	7.9						

					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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		4580000									
	Chloride (PWS)	mg/L		663000									
	Bromide	mg/L		7570									
	Sulfate (PWS)	mg/L		1530000									
	Fluoride (PWS)	mg/L		279									
Group 2	Total Aluminum	µg/L		149									
	Total Antimony	µg/L	<	0.9									
	Total Arsenic	µg/L		25									
	Total Barium	µg/L		62.8									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		3015									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	5									
	Total Copper	µg/L	<	5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		67.5									
	Total Iron	µg/L		636									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		675									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		12.2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	10									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.9									
	Total Zinc	µg/L	<	25									
	Total Molybdenum	µg/L		43.4									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 007

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Unnamed Trib to Monongahela River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	039584	0.56	980	0.1	0.085		Yes
End of Reach 1	039584	0.1	770	0.18			Yes

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

Location	RMI	LFY (cfs/mi^2)*	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	0.56	0.1	0.000459									100	7		
End of Reach 1	0.1	0.1	0.0009												

Q_h

Location	RMI	LFY (cfs/mi^2)	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	0.56														
End of Reach 1	0.1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 007

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 1260.9 Analysis pH: 7.89

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	
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	753	
Total Antimony	0	0		0	1,100	1,100	1,105	
Total Arsenic	0	0		0	340	340	341	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,092	
Total Boron	0	0		0	8,100	8,100	8,135	
Total Cadmium	0	0		0	23.508	28.1	28.2	Chem Translator of 0.838 applied
Total Chromium (III)	0	0		0	4541.108	14,371	14,433	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.4	
Total Copper	0	0		0	146.367	152	153	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	867.199	2,056	2,065	Chem Translator of 0.422 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.65	Chem Translator of 0.85 applied
Total Nickel	0	0		0	3996.230	4,004	4,022	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	251.541	296	297	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.3	
Total Zinc	0	0		0	1003.395	1,026	1,030	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 1260.9 Analysis pH: 7.89

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	
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	221	
Total Arsenic	0	0		0	150	150	151	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,118	
Total Boron	0	0		0	1,600	1,600	1,607	
Total Cadmium	0	0		0	1.421	1.77	1.78	Chem Translator of 0.803 applied
Total Chromium (III)	0	0		0	590.705	687	690	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10.4	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19.1	
Total Copper	0	0		0	78.099	81.4	81.7	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	1,507	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	33.793	80.1	80.5	Chem Translator of 0.422 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.91	Chem Translator of 0.85 applied
Total Nickel	0	0		0	443.858	445	447	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	5.01	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	13.1	
Total Zinc	0	0		0	1011.603	1,026	1,030	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 0.000 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	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.62	
Total Arsenic	0	0		0	10	10.0	10.0	
Total Barium	0	0		0	2,400	2,400	2,410	
Total Boron	0	0		0	3,100	3,100	3,114	
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	301	
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	1,004	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	613	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	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	0.24	0.24	0.24	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 0.000 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	
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	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	0.006	0.009	10.0	15.7	25.1	µg/L	10.0	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	0.91	1.42	1,607	2,507	4,017	µg/L	1,607	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cobalt	Report	Report	Report	Report	Report	µg/L	19.1	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	301	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,507	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	0.57	0.89	1,004	1,567	2,511	µg/L	1,004	THH	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***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)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Barium	2,410	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	1.78	µg/L	Discharge Conc < TQL
Total Chromium (III)	690	µg/L	Discharge Conc < TQL
Hexavalent Chromium	10.4	µg/L	Discharge Conc < TQL
Total Copper	81.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	80.5	µg/L	Discharge Conc < TQL
Total Mercury	0.05	µg/L	Discharge Conc < TQL
Total Nickel	447	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	5.01	µg/L	Discharge Conc < TQL
Total Silver	296	µg/L	Discharge Conc < TQL
Total Thallium	0.24	µg/L	Discharge Conc < TQL
Total Zinc	1,026	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:

Outfall 001 StreamStats Report

001 StreamStats Report

Region ID: PA
Workspace ID: PA20240228175625314000
Clicked Point (Latitude, Longitude): 40.22232, -79.96671
Time: 2024-02-28 12:56:53 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5320	square miles
ELEV	Mean Basin Elevation	1827	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5320	square miles	2.26	1400
ELEV	Mean Basin Elevation	1827	feet	1050	2580

Low-Flow Statistics Disclaimers [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 [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	701	ft^3/s
30 Day 2 Year Low Flow	928	ft^3/s
7 Day 10 Year Low Flow	410	ft^3/s
30 Day 10 Year Low Flow	478	ft^3/s
90 Day 10 Year Low Flow	709	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment D:

Outfall 001 Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Mitchell FGD Landfill** NPDES Permit No.: **PA0255335** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Coal Ash Leachate**

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
0.068	1266	7.9						

					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		4580000									
	Chloride (PWS)	mg/L		663000									
	Bromide	mg/L		7570									
	Sulfate (PWS)	mg/L		1530000									
	Fluoride (PWS)	mg/L		279									
Group 2	Total Aluminum	µg/L		149									
	Total Antimony	µg/L	<	0.9									
	Total Arsenic	µg/L		25									
	Total Barium	µg/L		62.8									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		3015									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	5									
	Total Copper	µg/L	<	5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		67.5									
	Total Iron	µg/L		636									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		675									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		12.2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	10									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.9									
	Total Zinc	µg/L	<	25									
	Total Molybdenum	µg/L		43.4									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Monongahela River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	29.5	727	5320	0.0001		Yes
End of Reach 1	037185	28.5	721	5321	0.0001		Yes

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

Location	RMI	LFY (cfs/mi^2)*	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	29.5	0.1	550			749	9					100	7		
End of Reach 1	28.5	0.1													

Q_h

Location	RMI	LFY (cfs/mi^2)	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	29.5														
End of Reach 1	28.5														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All ( ) Inputs ( ) Results ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.073 Analysis Hardness (mg/l): 103.06 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	
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	285,386	
Total Antimony	0	0		0	1,100	1,100	418,566	
Total Arsenic	0	0		0	340	340	129,375	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	7,990,805	
Total Boron	0	0		0	8,100	8,100	3,082,168	
Total Cadmium	0	0		0	2.074	2.2	837	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	584.023	1,848	703,257	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	6,200	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	36,149	
Total Copper	0	0		0	13.827	14.4	5,481	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	66.738	84.8	32,284	Chem Translator of 0.787 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	627	Chem Translator of 0.85 applied
Total Nickel	0	0		0	480.346	481	183,145	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	3.388	3.99	1,517	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	24,733	
Total Zinc	0	0		0	120.216	123	46,773	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.503 Analysis Hardness (mg/l): 100.44 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	
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	578,678	
Total Arsenic	0	0		0	150	150	394,553	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,784,451	
Total Boron	0	0		0	1,600	1,600	4,208,566	
Total Cadmium	0	0		0	0.247	0.27	714	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.383	86.5	227,506	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	27,343	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	49,977	
Total Copper	0	0		0	8.990	9.36	24,631	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	7,844,004	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.529	3.2	8,416	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2,383	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.202	52.4	137,722	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	13,123	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	34,195	
Total Zinc	0	0		0	118.583	120	316,343	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 720 PMF: 0.503 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	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	14,730	
Total Arsenic	0	0		0	10	10.0	26,304	
Total Barium	0	0		0	2,400	2,400	6,312,849	
Total Boron	0	0		0	3,100	3,100	8,154,097	
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	789,106	
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	2,630,354	
Total Mercury	0	0		0	0.050	0.05	132	
Total Nickel	0	0		0	610	610	1,604,516	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	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	0.24	0.24	631	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.750 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	
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	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***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)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	182,921	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	26,304	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	5,121,784	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,975,545	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	536	µg/L	Discharge Conc < TQL
Total Chromium (III)	227,506	µg/L	Discharge Conc < TQL
Hexavalent Chromium	3,974	µg/L	Discharge Conc < TQL
Total Cobalt	23,170	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	3,513	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	789,106	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	7,844,004	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8,416	µg/L	Discharge Conc < TQL
Total Manganese	2,630,354	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	132	µg/L	Discharge Conc < TQL
Total Nickel	117,388	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	13,123	µg/L	Discharge Conc < TQL
Total Silver	972	µg/L	Discharge Conc < TQL
Total Thallium	631	µg/L	Discharge Conc < TQL
Total Zinc	29,980	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS