

Application Type Renewal  
Facility Type Industrial  
Major / Minor Minor

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

Application No. PA0098124  
APS ID 665353  
Authorization ID 1412692

**Applicant and Facility Information**

Applicant Name	<u>Duquesne Light Company.</u>	Facility Name	<u>Elrama Ash Disposal Site</u>
Applicant Address	<u>2825 New Beaver Avenue, N6- TNG</u> <u>Pittsburgh, PA 15233</u>	Facility Address	<u>Gun Club Road</u> <u>Elrama, PA 15038</u>
Applicant Contact	<u>John Bigi</u>	Facility Contact	<u>Same as Applicant</u>
Applicant Phone	<u>412-393-8119</u>	Facility Phone	<u>Same as Applicant</u>
Client ID	<u>33626</u>	Site ID	<u>237511</u>
SIC Code	<u>4911</u>	Municipality	<u>Union Township</u>
SIC Description	<u>Trans. &amp; Utilities - Electric Services</u>	County	<u>Washington</u>
Date Application Received	<u>December 2, 2008</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>December 15, 2008</u>	If No, Reason	<u></u>
Purpose of Application	<u>NPDES Permit Reviewal with Modifications</u>		

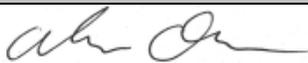
**Summary of Review**

Duquesne Light Company ("DLC") submitted an application to renew its NPDES permit on December 2, 2008. The application was subsequently updated on February 24, 2017 at the Department's request. Conditions at the site remain stable, capped and vegetated. Landfill seeps and leachate continue to generate wastewater discharges which are authorized under this NPDES permit. Waste Management Permit No. 300578 also applies to this site.

DLC previously owned and operated the Elrama Power Station, a 487-megawatt coal-fired electrical generating facility located in Elrama, PA. The station's boiler flue gas emissions were controlled by electrostatic precipitators and flue gas desulfurization ("FGD") scrubbers. The precipitators collected fly ash that was entrained in the flue gas. The FGD scrubbers chemically removed sulfur from the flue gas, resulting in the production of FGD residuals. The FGD residuals were combined with the fly ash and lime to form a fixated product known as Poz-O-Tec for mass disposal at the Ash Disposal site. Wastes landfilled onsite include fly ash, FGD residuals, bottom ash and coal pile runoff treatment residuals. DLC continues to own and maintain the Elrama Ash Disposal site. The site received its final materials in April 1989 and was subsequently closed.

The Department previously drafted the NPDES permit, which was included in the February 17, 2018 PA Bulletin. Since this Draft, DLC has proposed alternative changes to achieve water quality limitations at the site's outfalls. This review, will be treated as a new review of the 2017 application and the supplemental documents, including the 2022 rerouting plans. The comments from the 2018 draft permit will not be addressed in this fact sheet; however, this permit will be drafted to allow for comments on the permit and limitation development.

Outfall 001 was located at the end of a 30-inch diameter corrugated metal pipe which discharges from the site's stormwater pond. Outfall 001 was relocated in 2019 to the end of the emergency overflow. The water currently flows via an unnamed tributary to the Monongahela River. The Department conducted an aquatic survey of the Outfall 001 drainage swale to determine the aquatic uses for the waterbody. While past surveys found aquatic life near the point of discharge, the May

Approve	Deny	Signatures	Date
X		 Adam Olesnanik, P.E. / Environmental Engineer	June 28, 2024
X		 Michael E. Fifth, P.E. / Environmental Engineer Manager	July 2, 2024

### Summary of Review

2016 survey found no long-lived taxa at this location. From the Outfall 001 point of discharge to approximately 800 feet below the point of discharge, the waterbody is classified as having an aquatic use requiring protection. Thereafter, the stream enters a heavily disturbed and eroded industrial segment characterized by abandoned mine seepage and poorly vegetated stream channels. The stream continues into a culvert that conveys the waterbody beneath a rail yard into the Monongahela River. The Department's surveys have found no aquatic use in this segment. Accordingly, the point of first use approximately 800 feet below the point of discharge is the Monongahela River.

Based on this assessment, DLC must achieve the WQBELs at the discharge point of Outfall 001; however, based on the discharge concentrations DLC will not be able to achieve these limits upon permit issuance. Therefore, to achieve these limits DLC has proposed to collect certain leachate pipes that have been shown to be the primary contributors of boron and selenium and re-route the flow past the 800 feet of the waters of the commonwealth that require protection, to the segments that have been found to have no aquatic use. At this location, the point of first use is defined as the Monongahela River. This re-routed discharge will be named Outfall 003 because the contributing leachate pipes consist of the former Outfall 003 and at least five other leachate pipes that will be identified by DLC as part of sampling being performed under a Consent Order & Agreement.

The leachate collection channels from the disposal site are separated into different sections, the North Channel, the South Channel and the Lower Channel. The leachate for the Lower Channel would continue to be directed to the collection pond prior to discharging via Outfall 001. The former Outfall 003 discharge accounts for 60 to 80 percent of the north channel flow and 92 to 95 percent of the total boron loading to the pond. The former Outfall 003 discharge accounts for essentially all of the selenium input to the pond based on DLC's preliminary sampling results. Mass balance-based modelling for boron conducted by DLC indicated that with the re-rerouting of former Outfall 003, five leachate pipes from the North Channel known as the Lower Northern Channel, and the South Channel, that the remaining discharges to Outfall 001 the discharge concentration would be below the monthly criterion for boron (1.6 mg/L). Similarly, the mass balance-based modelling for selenium conducted by DLC indicated that the re-rerouting of former Outfall 003 would essentially remove all of the selenium to the pond of Outfall 001. DLC is completing sampling to determine and identify all leachate pipes that will be re-routed to Outfall 003.

Outfall 002 is a low volume discharge (<1,000 GPD) located adjacent to Outfall 001 at the end of three, 6-inch diameter PVC pipes. DLC is proposing to combine this discharge with the Outfall 001. During this permit term, Outfall 002 will receive limitations but once Outfall 002 is combined with Outfall 001, DLC will need to indicate on their DMRs that there were "no discharges" from Outfall 002 for the rest of the permit term or submit a permit amendment application to remove the Outfall 002 reporting requirement.

Outfall 003 previously discharged wastewater from coal ash landfill underdrains. Its discharges have since been merged with Outfall 001. However, as discussed above, Outfall 003 will be diverted, along with other selected leachate pipes around Outfall 001 to a point where there is no longer any protected aquatic use and the point of first use is the Monongahela River.

Outfall 004 currently discharges to an unnamed tributary to the Monongahela River, but DLC has proposed to re-route outfall 004 to the storm sewer inlet on the neighboring property because of existing water quality limitations that cannot be met at the current discharge location. The storm sewer eventually discharges to the Monongahela River after crossing under route 837 and the Norfolk Southern Railway. Once the re-routing occurs, the WQBELs will be removed and no longer a concern at the proposed discharge point.

Outfall 005 currently discharges to an unnamed tributary to the Monongahela River, but DLC has proposed to re-route outfall 005 to discharge to the storm sewer inlet on the neighboring property because of existing water quality limitations that cannot be met at the current discharge location. The rerouted pipe will intersect with the rerouted pipe for Outfall 004 and the combined flow will discharge to the inlet on the neighboring property. The storm sewer eventually discharges to the Monongahela River after crossing under route 837 and the Norfolk Southern Railway. Once the re-routing occurs, the WQBELs will be removed from the permit. Sampling will remain in the permit for Outfall 005 because DLC is proposing to sample the effluent from Outfalls 004 and 005 separately at the head of their rerouted discharge pipes instead of where they combine at the discharge point to the storm sewer inlet on the neighboring property.

Outfall 006 discharges uncontaminated stormwater runoff from the northern side of the closed landfill into an UNT of the Monongahela River. Discharges are intermittent and flow only during heavy storm events. The outfall is newly identified since the previous permit cycle. The discharge is approximately 1.0 mile from the Monongahela River.

Outfall 007 discharges stormwater runoff from a roadway drainage swale along the western edge of the leachate pond.

### Summary of Review

It was originally presumed that Outfalls 006 and 007 discharge uncontaminated stormwater, however no discharge data was submitted to the Department justifying that the discharges were uncontaminated. Therefore, the draft permit will include stormwater monitoring requirements on these outfalls. During the permit term if the permittee believes the discharges from these outfalls are considered uncontaminated based on the stormwater sampling, the permittee may submit a permit amendment application for the Department to review the discharges to determine if monitoring for these outfalls is still needed.

#### 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 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.	<u>001 (Current Discharge Flow)</u>	Design Flow (MGD)	<u>0.07354</u>
Outfall No.	<u>001 (Combined with Outfall 002)</u>	Design Flow (MGD)	<u>0.07448</u>
Latitude	<u>40° 15' 01.14"</u>	Longitude	<u>-79° 56' 08.78"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff</u>			
Receiving Waters	<u>Unnamed Tributary to the Monongahela River</u>	Stream Code	<u></u>
NHD Com ID	<u>99408826</u>	RMI	<u>0.52</u>
Drainage Area	<u>0.0363 (Head Waters)</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.0034</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.000123</u>	Q <sub>7-10</sub> Basis	<u>StreamStats</u>
Elevation (ft)	<u>970</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>19-C</u>	Chapter 93 Class.	<u>WWF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>PCB; Chlordane</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Approved 4/9/2001</u>	Name	<u>Monongahela River TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water – Aldrich Plant</u>		
PWS Waters	<u>Monongahela River</u>	Flow at Intake (cfs)	<u>550</u>
PWS RMI	<u>25.6</u>	Distance from Outfall (mi)	<u>0.72</u>

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>002</u>	Design Flow (MGD)	<u>0.00094</u>
Latitude	<u>40° 15' 00.68"</u>	Longitude	<u>-79° 56' 08.52"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Coal Combustion Residual Landfill Leachate and Groundwater</u>			
Receiving Waters	<u>Unnamed Tributary to the Monongahela River</u>	Stream Code	<u></u>
NHD Com ID	<u>99408826</u>	RMI	<u>0.52</u>
Drainage Area	<u>0.0363 (Head Waters)</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.0034</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.000123</u>	Q <sub>7-10</sub> Basis	<u>StreamStats</u>
Elevation (ft)	<u>970</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>19-C</u>	Chapter 93 Class.	<u>WWF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>PCB; Chlordane</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Approved 4/9/2001</u>	Name	<u>Monongahela River TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water – Aldrich Plant</u>		
PWS Waters	<u>Monongahela River</u>	Flow at Intake (cfs)	<u>550</u>
PWS RMI	<u>25.6</u>	Distance from Outfall (mi)	<u>0.72</u>

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>003 (Relocated Discharge)</u>	Design Flow (MGD)	<u>0.07448</u>
Latitude	<u><del>40° 14' 55.85"</del> 40° 14' 53.63"</u>	Longitude	<u><del>-79° 56' 10.05"</del> -79° 56' 10.059.55"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff</u>			
Receiving Waters	<u>Monongahela River (Via UNT)</u>	Stream Code	<u>37185</u>
NHD Com ID	<u>99408826</u>	RMI	<u>26.5</u>
Drainage Area	<u>5,330</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.103</u>
Q <sub>7-10</sub> Flow (cfs)	<u>550</u>	Q <sub>7-10</sub> Basis	<u>Army COE Min. Flow</u>
Elevation (ft)	<u>910</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>19-C</u>	Chapter 93 Class.	<u>WWF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>PCB; Chlordane</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Approved 4/9/2001</u>	Name	<u>Monongahela River TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water – Aldrich Plant</u>		
PWS Waters	<u>Monongahela River</u>	Flow at Intake (cfs)	<u>550</u>
PWS RMI	<u>25.6</u>	Distance from Outfall (mi)	<u>0.9</u>

**Discharge, Receiving Waters and Water Supply Information**

Outfall No.	<u>004 (Current Discharge Location)</u>	Design Flow (MGD)	<u>0.01701</u>
Latitude	<u>40° 14' 51.35"</u>	Longitude	<u>-79° 56' 51.08"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff</u>			
Receiving Waters	<u>Unnamed Tributary to Monongahela River</u>	Stream Code	<u>39579</u>
NHD Com ID	<u>99408868</u>	RMI	<u>0.4</u>
Drainage Area	<u>0.19</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.005</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.00103</u>	Q <sub>7-10</sub> Basis	<u>Army COE Min. Flow</u>
Elevation (ft)	<u>990</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>19-C</u>	Chapter 93 Class.	<u>WWF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>PCB; Chlordane</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Approved 4/9/2001</u>	Name	<u>Monongahela River TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water – Aldrich Plant</u>		
PWS Waters	<u>Monongahela River</u>	Flow at Intake (cfs)	<u>600</u>
PWS RMI	<u>25.6</u>	Distance from Outfall (mi)	<u>1.9</u>

Outfall No.	<u>004 (Re-routed Discharge Location)</u>	Design Flow (MGD)	<u>0.01701</u>
Latitude	<u>40° 14' 41.13"</u>	Longitude	<u>-79° 56' 47.50"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff</u>			
Receiving Waters	<u>Monongahela River</u>	Stream Code	<u>37185</u>
NHD Com ID	<u>99408868</u>	RMI	<u>27.1</u>
Drainage Area	<u>5,330</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.103</u>
Q <sub>7-10</sub> Flow (cfs)	<u>550</u>	Q <sub>7-10</sub> Basis	<u>Army COE Min. Flow</u>
Elevation (ft)	<u>910</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>19-C</u>	Chapter 93 Class.	<u>WWF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>PCB; Chlordane</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Approved 4/9/2001</u>	Name	<u>Monongahela River TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water – Aldrich Plant</u>		
PWS Waters	<u>Monongahela River</u>	Flow at Intake (cfs)	<u>550</u>
PWS RMI	<u>25.6</u>	Distance from Outfall (mi)	<u>1.5</u>

**Discharge, Receiving Waters and Water Supply Information**

Outfall No. 005 (Current Discharge Location) Design Flow (MGD) 0.00530  
 Latitude 40° 14' 52.22" Longitude -79° 56' 28.88"  
 Quad Name Glassport Quad Code 1606  
 Wastewater Description: Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff

Receiving Waters Unnamed Tributary to Monongahela River Stream Code Unnumbered  
 NHD Com ID 99408868 RMI 0.58  
 Drainage Area 0.0351 Yield (cfs/mi<sup>2</sup>) 0.0035  
 Q<sub>7-10</sub> Flow (cfs) 0.000124 Q<sub>7-10</sub> Basis Army COE Min. Flow  
 Elevation (ft) 980 Slope (ft/ft) 0.001  
 Watershed No. 19-C Chapter 93 Class. WWF  
 Assessment Status Impaired  
 Cause(s) of Impairment PCB; Chlordane  
 Source(s) of Impairment Unknown  
 TMDL Status Approved 4/9/2001 Name Monongahela River TMDL

Nearest Downstream Public Water Supply Intake PA American Water – Aldrich Plant  
 PWS Waters Monongahela River Flow at Intake (cfs) 550  
 PWS RMI 25.6 Distance from Outfall (mi) 2.08

Outfall No. 005 (Re-routed Discharge Location) Design Flow (MGD) 0.00530  
 Latitude 40° 14' 41.13" Longitude -79° 56' 47.50"  
 Quad Name Glassport Quad Code 1606  
 Wastewater Description: Coal Combustion Residual Landfill Leachate, Groundwater, and Stormwater Runoff

Receiving Waters Monongahela River Stream Code 37185  
 NHD Com ID 99408868 RMI 26.6  
 Drainage Area 5,330 Yield (cfs/mi<sup>2</sup>) 0.103  
 Q<sub>7-10</sub> Flow (cfs) 550 Q<sub>7-10</sub> Basis Army COE Min. Flow  
 Elevation (ft) 910 Slope (ft/ft) 0.001  
 Watershed No. 19-C Chapter 93 Class. WWF  
 Assessment Status Impaired  
 Cause(s) of Impairment PCB; Chlordane  
 Source(s) of Impairment Unknown  
 TMDL Status Approved 4/9/2001 Name Monongahela River TMDL

Nearest Downstream Public Water Supply Intake PA American Water – Aldrich Plant  
 PWS Waters Monongahela River Flow at Intake (cfs) 550  
 PWS RMI 25.6 Distance from Outfall (mi) 1.5

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>006</u>	Design Flow (MGD)	<u>Variable</u>
Latitude	<u>40° 15' 9.70"</u>	Longitude	<u>-79° 56' 19.73"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Stormwater Runoff</u>			
Receiving Waters	<u>UNT of the Monongahela River</u>	Stream Code	<u>39573</u>
NHD Com ID	<u>99408868</u>	RMI	<u>1.0</u>
Outfall No.	<u>007</u>	Design Flow (MGD)	<u>Variable</u>
Latitude	<u>40° 15' 01.61"</u>	Longitude	<u>-79° 56' 10.68"</u>
Quad Name	<u>Glassport</u>	Quad Code	<u>1606</u>
Wastewater Description: <u>Stormwater Runoff</u>			
Receiving Waters	<u>UNT of the Monongahela River</u>	Stream Code	<u>39573</u>
NHD Com ID	<u>99408868</u>	RMI	<u>1.0</u>

**Development of Effluent Limitations**

**Outfall No.** 001 **Design Flow (MGD)** 0.074  
**Latitude** 40° 15' 01.14" **Longitude** -79° 56' 08.78"  
**Wastewater Description:** Coal Combustion Residual Waste Landfill Leachate, Groundwater, and Stormwater

**Technology-Based Effluent limitations:**

Regulatory Effluent Standards and Monitoring Requirements

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

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

**Table 1: Regulatory Effluent Standards and Monitoring Requirements for Outfall 001**

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Federal Effluent Limitations Guidelines

The Effluent Limitation Guidelines under 40 CFR 423, Steam Electric Power Generating Point Source Category, are not applicable to the discharges from the site.

EPA finalized a supplemental rulemaking in April 2024(2024 Final Rule) applicable to the Federal Effluent Limitation Guidelines for Steam Electric Generating Stations (40 CFR 423). The supplemental rulemaking strengthens discharge limits for flue gas desulfurization wastewater, bottom ash transport water, combustion residual leachate, and legacy wastewaters. However, the rule for the combustion residual leachate only applies to facilities that received the waste from facilities operating after 2015. The Elrama Power Station, the associated electric generating station for which the Elrama Ash Disposal Site received its waste, was decommissioned in 2012; thus, the coal combustion residual leachate from the Elrama Ash Disposal Site is not subject the ELGs in 40 CFR 423 and the facility will still be categorized as a Minor IW Facility without ELG.

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.

According to EPA's guidance, Duquesne Light Company 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 Duquesne Light Company 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, Duquesne Light Company is subject 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 Duquesne Light Company'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 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 and Table 4. Because the discharge is planned to be merged with Outfall 002, the TMS model runs were generated for Outfall 001 and is the combined Outfall 001 and 002 discharges to ensure protection of the waterway under both scenarios. Table 2 lists the model inputs for Outfall 001 alone and Table 4 lists the combined discharge inputs. For IW discharges, the design flow used in TMS 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 water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet for Outfall 001 for the current discharge are displayed below in Table 3 and for the combined discharge are displayed below in Table 5.

**Table 2: TMS Inputs for Outfall 001 at the Current Discharge**

Parameter	Value
River Mile Index	0.52
Discharge Flow (MGD)	0.07354
<b>Basin/Stream Characteristics</b>	
Parameter	Value
Area in Square Miles	0.0363
Q <sub>7-10</sub> (cfs)	0.000123
Low-flow yield (cfs/mi <sup>2</sup> )	0.0034
Elevation (ft)	970
Slope	0.001

**Table 3: Water Quality Based Effluent Limitations at Outfall 001 at the Current Discharge Location**

Parameters	Average Monthly (µg/L)	Daily Maximum (µg/L)	Instant. Maximum (µg/L)
Total Aluminum	Report	Report	Report
Total Arsenic	10.0	15.6	25.0
Total Boron	1,602	2,499	4,004
Hexavalent Chromium	Report	Report	Report
Dissolved Iron	Report	Report	Report
Total Iron	Report	Report	Report
Total Manganese	Report	Report	Report
Total Selenium	4.99	7.79	12.5

**Table 4: TMS Inputs for Outfall 001 Combined Discharge**

Parameter	Value
River Mile Index	0.52
Discharge Flow (MGD)	0.07448
<b>Basin/Stream Characteristics</b>	
Parameter	Value

Area in Square Miles	0.0363
Q <sub>7-10</sub> (cfs)	0.000123
Low-flow yield (cfs/mi <sup>2</sup> )	0.0034
Elevation (ft)	970
Slope	0.001

**Table 5: Water Quality Based Effluent Limitations for Outfall 001 at the Current Discharge Location**

Parameters	Average Monthly (µg/L)	Daily Maximum (µg/L)
Total Aluminum	Report	Report
Total Arsenic	10.0	15.6
Total Boron	1,602	2,499
Hexavalent Chromium	Report	Report
Dissolved Iron	Report	Report
Total Iron	Report	Report
Total Manganese	Report	Report
Total Selenium	4.99	7.79

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth’s water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through “natural attenuation”. While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB’s are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Based upon these considerations, the Monongahela River TMDL is not applicable to site’s discharges.

Anti-Backsliding

Previous limits can be used pursuant to EPA’s anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 001 are displayed below in Table 6.

**Table 6: Effluent Limitations in the Current Permit for Outfall 001**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15.0	30.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 001 are shown below in Tables 7 and 8. The limits are the most stringent values from the above limitation analyses. Outfall 001 received new WQBELs that DLC can not currently achieve at this time, therefore the Department is giving DLC time to achieve these limitations. Table 7 shows the interim discharge limitations for Outfall 001 and Table 8 shows the Final Limitations for Outfall 001. Outfall 001 received new water quality-based limitations for Boron, Arsenic, and Selenium and monitoring requirements for Aluminum, Hexavalent Chromium, Dissolved Iron, Total Iron, and Total Manganese. Duquesne Light’s solution to meet the limits is to separate and relocate a portion of the discharge from Outfall 001 that is believed to be the contributing factor to the

elevated boron and selenium in the discharge to a location further downstream where the point of first use is the Monongahela River (Outfall 003). However, because not all of the flow from Outfall 001 is being re-routed to this point, the Final WQBELs will need to remain in the permit for Outfall 001 to ensure that the receiving water is being protected. Also, during this time DLC is going to combine the discharges from Outfall 001 and 002 together at Outfall 001, the combined discharge did not change the Final Effluent Limitations for Outfall 001. For the interim period of the permit, Outfall 001 will have a reporting requirement for Arsenic, Selenium, Aluminum, Hexavalent Chromium, Dissolved Iron, Total Iron, Total Manganese, and Boron will be subject to the previous permit limits. The Final Limitations will become effective after the completion of construction of the rerouting of the leachate seeps and Outfall 003, or 59 months after the permit effective date, whichever comes first.

**Table 7: Proposed Interim Effluent Limitations for Outfall 001**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15.0	30.0	XXX	2/Month	Grab
Total Aluminum (mg/L)	Report	Report	XXX	2/Month	Grab
Total Arsenic (µg/L)	Report	Report	XXX	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	XXX	2/Month	Grab
Dissolved Iron (mg/L)	Report	Report	XXX	2/Month	Grab
Total Iron (mg/L)	Report	Report	XXX	2/Month	Grab
Total Manganese (mg/L)	Report	Report	XXX	2/Month	Grab
Total Selenium (µg/L)	Report	Report	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Table 8: Proposed Final Effluent Limitations for Outfall 001**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	1.6	2.5	XXX	2/Month	Grab
Total Aluminum (mg/L)	Report	Report	XXX	2/Month	Grab
Total Arsenic (µg/L)	10.0	15.6	XXX	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	XXX	2/Month	Grab
Dissolved Iron (mg/L)	Report	Report	XXX	2/Month	Grab
Total Iron (mg/L)	Report	Report	XXX	2/Month	Grab
Total Manganese (mg/L)	Report	Report	XXX	2/Month	Grab
Total Selenium (µg/L)	4.99	7.79	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Development of Effluent Limitations**

**Outfall No.** 002 **Design Flow (MGD)** 0.00094  
**Latitude** 40° 15' 00.68" **Longitude** -79° 56' 08.52"  
**Wastewater Description:** Coal Combustion Residual Waste Landfill Leachate and Groundwater

**Technology-Based Effluent limitations:**

Regulatory Effluent Standards and Monitoring Requirements

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

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

**Table 9: Regulatory Effluent Standards and Monitoring Requirements for Outfall 002**

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Federal Effluent Limitations Guidelines

The Effluent Limitation Guidelines under 40 CFR 423, Steam Electric Power Generating Point Source Category, are not applicable to the discharges from the site.

EPA finalized a supplemental rulemaking in April 2024(2024 Final Rule) applicable to the Federal Effluent Limitation Guidelines for Steam Electric Generating Stations (40 CFR 423). The supplemental rulemaking strengthens discharge limits for flue gas desulfurization wastewater, bottom ash transport water, combustion residual leachate, and legacy wastewaters. However, the rule for the combustion residual leachate only applies to facilities that received the waste from facilities operating after 2015. The Elrama Power Station, the associated electric generating station for which the Elrama Ash Disposal Site received its waste, was decommissioned in 2012; thus, the coal combustion residual leachate from the Elrama Ash Disposal Site is not subject the ELGs in 40 CFR 423 and the facility will still be categorized as a Minor IW Facility without ELG.

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.

According to EPA's guidance, Duquesne Light Company 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 Duquesne Light Company 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, Duquesne Light Company is subject 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 Duquesne Light Company'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 002

Discharges from Outfall 002 are evaluated based on concentrations reported on the 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 as 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 10. 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 TMS 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 water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet for Outfall 002 at the current discharge location are displayed below in Table 11.

**Table 10: TMS Inputs for Outfall 002 at the Current Discharge Location**

Parameter	Value
River Mile Index	0.52
Discharge Flow (MGD)	0.00094
Basin/Stream Characteristics	
Parameter	Value
Area in Square Miles	0.0363
Q <sub>7-10</sub> (cfs)	0.000123
Low-flow yield (cfs/mi <sup>2</sup> )	0.0034
Elevation (ft)	970
Slope	0.001

**Table 11: Water Quality Based Effluent Limitations at Outfall 002**

Parameters	Average Monthly (µg/L)	Daily Maximum (µg/L)	Instant. Maximum (µg/L)
Total Boron	1,735	2,707	4,338
Hexavalent Chromium	Report	Report	Report
Total Selenium	5.41	8.44	13.5

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through "natural attenuation". While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB's are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Based upon these considerations, the Monongahela River TMDL is not applicable to site's discharges.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 002 are displayed below in Table 12.

**Table 12: Effluent Limitations in the Current Permit for Outfall 002**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15.0	30.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Final Effluent Limitations**

The proposed effluent limitations and monitoring requirements for Outfall 002 are shown below in Tables 13 and 14. The limits are the most stringent values from the above limitation analysis. Outfall 002 received new WQBELs that DLC cannot currently achieve, therefore the Department is granting a three-year compliance schedule for DLC to achieve these limitations. DLC's solution to achieve the limitations at Outfall 002 is to combine and relocate Outfall 002 with Outfall 001 to meet the new WQBELs, however, the new WQBELs will be included in the permit for Outfall 002 as Final Limits in case the outfall doesn't get rerouted to Outfall 001. Additionally, Outfall 002 will include interim limitations because it received new WQBELs. For the interim period of the permit, Outfall 002 will have a report requirement for Selenium, and Hexavalent Chromium, and Boron will be limited to its previous permit limits. Once the outfalls are combined and relocated, Outfall 002 can be considered inactive, can be reported as no discharge, and can be removed during the next permit cycle or permit amendment. The Final limits will become effective upon completion of construction of the rerouting of the seeps and Outfall 003 or 59 months after the permit effective date, whichever comes first.

**Table 13: Proposed Interim Effluent Limitations in the Permit for Outfall 002**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15.0	30.0	XXX	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	XXX	2/Month	Grab
Total Selenium (µg/L)	Report	Report	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Table 14: Proposed Final Effluent Limitations in the Permit for Outfall 002**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	1.74	2.71	XXX	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	XXX	2/Month	Grab
Total Selenium (µg/L)	5.41	8.44	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab



- 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.

According to EPA's guidance, Duquesne Light Company 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 Duquesne Light Company 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, Duquesne Light Company is subject 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 Duquesne Light Company's case), then the monitoring may be discontinued.

#### **Water Quality-Based Effluent limitations:**

##### Toxics Management Spreadsheet

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 spreadsheet 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 003

Discharges from Outfall 003 are evaluated based on concentrations reported on the 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 16. 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 F of this Fact Sheet. The TMS did not recommend any WQBELs at Outfall 003.

**Table 16: TMS Inputs for Outfall 003 at the Current Discharge**

Parameter	Value
River Mile Index	26.5
Discharge Flow (MGD)	0.07448
Basin/Stream Characteristics	
Parameter	Value
Area in Square Miles	5330
Q <sub>7-10</sub> (cfs)	550
Low-flow yield (cfs/mi <sup>2</sup> )	0.103
Elevation (ft)	910
Slope	0.001

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through "natural attenuation". While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB's are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Based upon these considerations, the Monongahela River TMDL is not applicable to site's discharges.

Anti-Backsliding

Previous limits from Outfall 003 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l), and are displayed below in Table 17.

**Table 17: Effluent Limitations in the Current Permit for Outfall 003**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Suspended Solids	30.0	60.0	XXX	2/Month	Grab
Total Boron	1.8	4.5	XXX	2/Month	Grab
Total Selenium	0.006	0.015	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 003 are shown below in Table 18. The limits are the most stringent values from the above limitation analysis. The previous limits for Boron and Selenium will be removed because they were WQBELs applicable to the previous Outfall 003 discharge location, but Boron and Selenium will no longer be pollutants of concern at the proposed discharge location. This outfall will not have any interim limits because Outfall 003 was rerouted and combined with Outfall 001 but will be separated during this permit cycle. The permittee can report no discharge in the discharge monitoring reports until the rerouting is completed and discharge commences.

**Table 18: Proposed Interim Effluent Limitations for the Proposed Outfall 003 Discharge**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Development of Effluent Limitations**

Outfall No. 004 Design Flow (MGD) 0.017  
 Latitude 40° 14' 51.35" Longitude -79° 56' 51.08"  
 Wastewater Description: Coal Combustion Residual Waste Landfill Leachate, Groundwater, and Stormwater Runoff

**Technology-Based Effluent limitations:**

Regulatory Effluent Standards and Monitoring Requirements

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

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

**Table 19: Regulatory Effluent Standards and Monitoring Requirements for Outfall 004**

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH (S.U.)	Not less than 6.0 nor greater than 9.0		S.U.

Federal Effluent Limitations Guidelines

The Effluent Limitation Guidelines under 40 CFR 423, Steam Electric Power Generating Point Source Category, are not applicable to the discharges from the site.

EPA finalized a supplemental rulemaking in April 2024(2024 Final Rule) applicable to the Federal Effluent Limitation Guidelines for Steam Electric Generating Stations (40 CFR 423). The supplemental rulemaking strengthens discharge limits for flue gas desulfurization wastewater, bottom ash transport water, combustion residual leachate, and legacy wastewaters. However, the rule for the combustion residual leachate only applies to facilities that received the waste from facilities operating after 2015. The Elrama Power Station, the associated electric generating station for which the Elrama Ash Disposal Site received its waste, was decommissioned in 2012; thus, the coal combustion residual leachate from the Elrama Ash Disposal Site is not subject the ELGs in 40 CFR 423 and the facility will still be categorized as a Minor IW Facility without ELG.

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.

According to EPA's guidance, Duquesne Light Company 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 Duquesne Light Company 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, Duquesne Light Company is subject 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 Duquesne Light Company'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 004

Discharges from Outfall 004 are evaluated based on concentrations reported on the 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 was run with the discharge and receiving stream characteristics shown in Table 20 and Table 22. Because the discharge is planned to be re-routed and relocated at the Monongahela River, the TMS model was run for the discharges at both of these locations, Table 20 is for the current discharge location and Table 22 is for the proposed relocated discharge location. 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 H of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet for Outfall 004 at the current discharge location are displayed below in Table 21. The TMS did not recommend any WQBELs for the relocated discharge location.

**Table 20: TMS Inputs for Outfall 004 at the Current Discharge Location**

Parameter	Value
River Mile Index	0.4
Discharge Flow (MGD)	0.017
<b>Basin/Stream Characteristics</b>	
Parameter	Value
Area in Square Miles	0.19
Q <sub>7-10</sub> (cfs)	0.00103
Low-flow yield (cfs/mi <sup>2</sup> )	0.005
Elevation (ft)	990
Slope	0.001

**Table 21: Water Quality Based Effluent Limitations for Outfall 004 at the Current Discharge Location**

Parameters	Average Monthly (µg/L)	Daily Maximum (µg/L)
Total Aluminum	Report	Report
Total Arsenic	10.4	16.2
Total Boron	1,663	2,594
Hexavalent Chromium	Report	Report
Total Iron	Report	Report
Total Selenium	5.18	8.09
Total Thallium	Report	Report

**Table 22: TMS Inputs for Outfall 004 At Relocated Discharge Location**

Parameter	Value
River Mile Index	27.1
Discharge Flow (MGD)	0.017
<b>Basin/Stream Characteristics</b>	
Parameter	Value

Area in Square Miles	5330
Q <sub>7-10</sub> (cfs)	550
Low-flow yield (cfs/mi <sup>2</sup> )	0.103
Elevation (ft)	910
Slope	0.001

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through "natural attenuation". While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB's are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Based upon these considerations, the Monongahela River TMDL is not applicable to site's discharges.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 004 are displayed below in Table 23.

**Table 23: Effluent Limitations in the Current Permit for Outfall 004**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	1.8	4.5	XXX	2/Month	Grab
Selenium (mg/L)	0.006	0.015	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Final Effluent Limitations**

The proposed effluent limitations and monitoring requirements for Outfall 004 are shown below in Tables 24 and 25. The limits are the most stringent values from the above limitation analysis. Table 24 lists the discharge limitations imposed at the current discharge location and Table 25 lists the discharge limitations proposed for the relocated discharge location. The final limits will become effective upon completion of construction of the relocated pipeline. A Part C condition will be included in the permit that discusses the final limitations and the re-rerouting of the Outfall 004 discharge.

**Table 24: Proposed Interim Effluent Limitations in the Permit for the current discharge location of Outfall 004**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	1.8 (*1.6)	4.5 (*2.6)	XXX	2/Month	Grab
Total Aluminum (mg/L)	Report	Report	Report	2/Month	Grab
Total Arsenic (µg/L)	Report (*10.4)	Report (*16.2)	Report	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	Report	2/Month	Grab
Total Iron (mg/L)	Report	Report	Report	2/Month	Grab
Total Selenium (µg/L)	6.0 (*5.18)	15.0 (*8.09)	Report	2/Month	Grab
Total Thallium (mg/L)	Report	Report	Report	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

\*These values are new WQBELs calculated in the above Reasonable Potential Analysis and WQBEL Development of this Fact Sheet for the current discharge location of Outfall 004. These values are included in the table to show what the final limitations at Outfall 004 would be if the discharge point were not relocated. If Outfall 004 wasn't being re-routed the outfall would be granted a compliance schedule of three years to achieve these limits, but since discharge is being re-routed to the river, the limits will not become effective because the discharge will be re-routed before the three years. Therefore, the new WQBELs to the current discharge location will not be included in the permit.

**Table 25: Proposed Final Effluent Limitations in the Permit for the relocation of the discharge of Outfall 004**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	Daily	Continuous
Total Suspended Solids (mg/L)	30.0	60.0	XXX	1/Week	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/Week	Grab

**Development of Effluent Limitations**

Outfall No. 005 Design Flow (MGD) 0.00530  
 Latitude 40° 14' 52.22" Longitude -79° 56' 28.88"  
 Wastewater Description: Coal Combustion Residual Waste Landfill Leachate, Groundwater, and Stormwater Runoff

**Technology-Based Effluent limitations:**

Regulatory Effluent Standards and Monitoring Requirements

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

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

**Table 26: Regulatory Effluent Standards and Monitoring Requirements for Outfall 005**

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH (S.U.)	Not less than 6.0 nor greater than 9.0		S.U.

Federal Effluent Limitations Guidelines

The Effluent Limitation Guidelines under 40 CFR 423, Steam Electric Power Generating Point Source Category, are not applicable to the discharges from the site.

EPA finalized a supplemental rulemaking in April 2024(2024 Final Rule) applicable to the Federal Effluent Limitation Guidelines for Steam Electric Generating Stations (40 CFR 423). The supplemental rulemaking strengthens discharge limits for flue gas desulfurization wastewater, bottom ash transport water, combustion residual leachate, and legacy wastewaters. However, the rule for the combustion residual leachate only applies to facilities that received the waste from facilities operating after 2015. The Elrama Power Station, the associated electric generating station for which the Elrama Ash Disposal Site received its waste, was decommissioned in 2012; thus, the coal combustion residual leachate from the Elrama Ash Disposal Site is not subject the ELGs in 40 CFR 423 and the facility will still be categorized as a Minor IW Facility without ELG.

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.

According to EPA's guidance, Duquesne Light Company 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 Duquesne Light Company 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, Duquesne Light Company is subject 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 Duquesne Light Company'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 005

Discharges from Outfall 005 are evaluated based on concentrations reported on the 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 27 and Table 29. Because the discharge is planned to be re-routed and relocated at the Monongahela River, the TMS model was run for the discharges at both of these locations, Table 27 is for the current discharge and Table 29 is for the proposed relocated discharge. 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 J of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet for Outfall 005 at the current discharge location are displayed below in Table 28. The TMS did not recommend any WQBELs for the relocated discharge location.

**Table 27: TMS Inputs for Outfall 005 at the Current Discharge Location**

Parameter	Value
River Mile Index	0.58
Discharge Flow (MGD)	0.00530
Basin/Stream Characteristics	
Parameter	Value
Area in Square Miles	0.0351
Q <sub>7-10</sub> (cfs)	0.000124
Low-flow yield (cfs/mi <sup>2</sup> )	0.0035
Elevation (ft)	980
Slope	0.001

**Table 28: Water Quality Based Effluent Limitations for Outfall 005 at the Current Discharge Location**

Parameters	Average Monthly (µg/L)	Daily Maximum (µg/L)
Total Aluminum	Report	Report
Total Antimony	5.69	8.88
Total Arsenic	10.2	15.9
Total Boron	1,626	2,536
Hexavalent Chromium	Report	Report
Dissolved Iron	Report	Report
Total Manganese	Report	Report
Total Selenium	5.07	7.91
Total Thallium	0.24	0.38

**Table 29: TMS Inputs for Outfall 005 At Relocated Discharge Location**

Parameter	Value
River Mile Index	26.6
Discharge Flow (MGD)	0.00530
Basin/Stream Characteristics	
Parameter	Value

Area in Square Miles	5330
Q7-10 (cfs)	550
Low-flow yield (cfs/mi <sup>2</sup> )	0.103
Elevation (ft)	910
Slope	0.001

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through "natural attenuation". While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB's are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Based upon these considerations, the Monongahela River TMDL is not applicable to site's discharges.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 005 are displayed below in Table 30.

**Table 30: Effluent Limitations in the Current Permit for Outfall 005**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15	30	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 005 are shown below in Tables 31 and 32. The limits are the most stringent values from the above limitation analysis. Tale 31 shows the discharge limitations imposed at the current discharge location and Table 32 show the discharge limitations at the relocated discharge location. The final limits will become effective upon completion of construction of the relocation pipeline. A part C condition will be included in the permit that discuss the final limitations and the re-rerouting of the discharge of Outfall 005.

**Table 31: Proposed Interim Effluent Limitations for Outfall 005**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids (mg/L)	30.0	60.0	XXX	2/Month	Grab
Total Boron (mg/L)	15.0 (*1.6)	30.0 (*2.5)	XXX	2/Month	Grab
Total Aluminum (mg/L)	Report	Report	XXX	2/Month	Grab
Total Antimony (µg/L)	Report (5.69)	Report (8.88)	XXX	2/Month	Grab
Total Arsenic (µg/L)	Report (10.2)	Report (15.9)	XXX	2/Month	Grab
Hexavalent Chromium (mg/L)	Report	Report	XXX	2/Month	Grab

**Table 31: Proposed Interim Effluent Limitations for Outfall 005**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Dissolved Iron (mg/L)	Report	Report	XXX	2/Month	Grab
Total Manganese (mg/L)	Report	Report	XXX	2/Month	Grab
Total Selenium (µg/L)	Report (*5.07)	Report (*7.91)	XXX	2/Month	Grab
Total Thallium (µg/L)	Report (*0.24)	Report (*0.61)	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

\*These values are new WQBELs calculated in the above Reasonable Potential Analysis and WQBEL Development of this Fact Sheet for the current discharge location of Outfall 005. These values are included in the table to show what the final limitations at Outfall 005 would be if the discharge point would not be relocated. If Outfall 005 wasn't being re-routed the outfall would be granted a compliance schedule of three years to achieve these limits, but since discharge is being re-routed to the river, the limits will not become effective because the discharge will be re-route before the three years. Therefore, the new WQBELs to the current discharge location will not be included in the permit.

**Table 32: Proposed Final Effluent Limitations for Outfall 005**

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	30.0	60.0	XXX	2/Month	Grab
PFOA (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Monitor	XXX	1/year	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

**Development of Effluent Limitations**

<b>Outfall No.</b> <u>006</u> <b>Latitude</b> <u>40° 15' 9.70"</u> <b>Wastewater Description:</b> <u>Stormwater Runoff</u>	<b>Design Flow (MGD)</b> <u>0.0</u> <b>Longitude</b> <u>-79° 56' 19.73"</u>
--	--

<b>Outfall No.</b> <u>007</u> <b>Latitude</b> <u>40° 15' 1.61"</u> <b>Wastewater Description:</b> <u>Stormwater Runoff</u>	<b>Design Flow (MGD)</b> <u>0.0</u> <b>Longitude</b> <u>-79° 56' 10.68"</u>
--	--

**Technology-Based Limitations**

Stormwater Technology Limits

Outfalls 006 & 007 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfalls discharge stormwater associated with industrial activity. The SIC code for the site is 4911 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix H. The reporting requirements applicable to stormwater discharges are shown in Table 33 below. Along with the monitoring requirements, sector specific BMPs included in Appendix H of the PAG-03 will also be included in Part C of the Draft Permit.

**Table 33: PAG-03 Appendix (H) Monitoring Requirements**

Parameter	Benchmark Value (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	XXX	1/6 Months	*Calculation
Total Phosphorus	XXX	1/6 Months	Grab
pH	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	100.0	1/6 Months	Grab
Oil and Grease	30.0	1/6 Months	Grab
Total Iron	XXX	1/6 Months	Grab

\*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO<sub>2</sub>+NO<sub>3</sub>-N), where TKN and NO<sub>2</sub>+NO<sub>3</sub>-N are measured in the same sample.

**Water Quality-Based Limitations**

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfalls 006 and 007 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

**Anti-Backsliding**

Outfalls 006 and 007 didn't have limitations in the previous permit, therefore, Anti-backsliding per 40 CFR 122.44(l) is not applicable.

**Final Effluent Limitations**

The proposed effluent limitations and monitoring requirements for Outfalls 006 and 007 are shown below in Table 34. The limits are the most stringent values from the above limitation analysis. A Part C condition is included in the Draft Permit requiring a Corrective Action Plan when there are two consecutive exceedances of the benchmark values. The benchmark values are also listed in the Part C condition and displayed below in Table 34. These values are not effluent limitations. An exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark

value provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

**Table 34: Proposed Limitations for Outfalls 006 and 007**

Parameter	Average Monthly	Daily Maximum	Benchmarks Values (mg/L)	Sample Frequency	Sample Type
Total Nitrogen	XXX	Report	XXX	1/6 Months	Grab
Total Phosphorus	XXX	Report	XXX	1/6 Months	Grab
pH (S.U.)	XXX	Report	9.0	1/6 Months	Grab
Total Suspended Solids	XXX	Report	100	1/6 Months	Grab
Oil and Grease	XXX	Report	30.0	1/6 Months	Grab
Total Iron	XXX	Report	XXX	1/6 Months	Grab

\*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO<sub>2</sub>+NO<sub>3</sub>-N), where TKN and NO<sub>2</sub>+NO<sub>3</sub>-N are measured in the same sample

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]

**Attachments**

Attachment A: Outfall 001 USGS Streams Stats Report

Attachment B: Outfall 001 Toxics Management Spreadsheet Evaluation

Attachment C: Outfall 002 USGS Streams Stats Report

Attachment D: Outfall 002 Toxics Management Spreadsheet Evaluation

Attachment E: Outfall 003 USGS Streams Stats Report

Attachment F: Outfall 003 Toxics Management Spreadsheet Evaluation

Attachment G: Outfall 004 USGS Streams Stats Report

Attachment H: Outfall 004 Toxics Management Spreadsheet Evaluation

Attachment I: Outfall 005 USGS Streams Stats Report

Attachment J: Outfall 006 Toxics Management Spreadsheet Evaluation

Attachment K: Site Rerouting Project Layout

Attachment A:

Outfall 001 USGS Streams Stats Report

## StreamStats Report

Region ID: PA  
Workspace ID: PA20220816143146660000  
Clicked Point (Latitude, Longitude): 40.24968, -79.93569  
Time: 2022-08-16 10:32:09 -0400



 Collapse All

### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0363	square miles
ELEV	Mean Basin Elevation	980	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	0.0363	square miles	2.26	1400
ELEV	Mean Basin Elevation	980	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	0.000543	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.00121	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	0.000123	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.000331	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.00076	ft <sup>3</sup> /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/>)

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Attachment B:

Outfall 001 Toxics Management Spreadsheet Evaluation



## Discharge Information

Instructions **Discharge** Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.07354	1200	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
<b>Group 1</b>											
Total Dissolved Solids (PWS)	mg/L	2000									
Chloride (PWS)	mg/L	61.7									
Bromide	mg/L	1.8									
Sulfate (PWS)	mg/L	1400									
Fluoride (PWS)	mg/L	0.4									
<b>Group 2</b>											
Total Aluminum	µg/L	< 100									
Total Antimony	µg/L	< 2									
Total Arsenic	µg/L	10									
Total Barium	µg/L	41									
Total Beryllium	µg/L	< 1									
Total Boron	µg/L	18500									
Total Cadmium	µg/L	0.06									
Total Chromium (III)	µg/L	1.2									
Hexavalent Chromium	µg/L	< 3.1									
Total Cobalt	µg/L	< 0.62									
Total Copper	µg/L	< 1.5									
Free Cyanide	µg/L										
Total Cyanide	µg/L	< 5									
Dissolved Iron	µg/L	32.3									
Total Iron	µg/L	300									
Total Lead	µg/L	0.33									
Total Manganese	µg/L	150									
Total Mercury	µg/L	< 0.2									
Total Nickel	µg/L	1.4									
Total Phenols (Phenolics) (PWS)	µg/L	11.2									
Total Selenium	µg/L	38.4									
Total Silver	µg/L	0.073									
Total Thallium	µg/L	0.011									
Total Zinc	µg/L	< 50									
Total Molybdenum	µg/L	250									
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 001

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 <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	098124	0.52	970	0.0363			Yes
End of Reach 1	098124	0.02	930	0.05			Yes

**Q<sub>7-10</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.52	0.1	0.000123									100	7		
End of Reach 1	0.02	0.1	0.001												

**Q<sub>n</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.52														
End of Reach 1	0.02														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	751	
Total Antimony	0	0		0	1,100	1,100	1,101	
Total Arsenic	0	0		0	340	340	340	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,023	
Total Boron	0	0		0	8,100	8,100	8,109	
Total Cadmium	0	0		0	22.388	26.6	26.7	Chem Translator of 0.84 applied
Total Chromium (III)	0	0		0	4357.042	13,788	13,803	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.1	
Total Copper	0	0		0	139,563	145	146	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	827.377	1,928	1,930	Chem Translator of 0.429 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	3829.023	3,837	3,841	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	230.608	271	272	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.1	
Total Zinc	0	0		0	961.349	983	984	Chem Translator of 0.978 applied

**CFC**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	220	
Total Arsenic	0	0		0	150	150	150	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,104	
Total Boron	0	0		0	1,600	1,600	1,602	
Total Cadmium	0	0		0	1.372	1.7	1.71	Chem Translator of 0.805 applied
Total Chromium (III)	0	0		0	566.762	659	660	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	19.0	
Total Copper	0	0		0	74.799	77.9	78.0	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	1,502	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	32.242	75.1	75.2	Chem Translator of 0.429 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	425.286	427	427	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	4.99	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	13.0	
Total Zinc	0	0		0	969.213	983	984	Chem Translator of 0.986 applied

**THH**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	5.61	
Total Arsenic	0	0		0	10	10.0	10.0	
Total Barium	0	0		0	2,400	2,400	2,403	
Total Boron	0	0		0	3,100	3,100	3,103	
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	300	
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	1,001	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	611	
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):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	0.01	10.0	15.6	25.0	µg/L	10.0	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	0.98	1.53	1,602	2,499	4,004	µg/L	1,602	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	10.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	300	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,502	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,001	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	0.003	0.005	4.99	7.79	12.5	µg/L	4.99	CFC	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	2,403	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	1.71	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	660	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	19.0	µg/L	Discharge Conc < TQL
Total Copper	78.0	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Lead	75.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.05	µg/L	Discharge Conc < TQL
Total Nickel	427	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	271	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.24	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	983	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.07448	1200	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			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	2000								
	Chloride (PWS)	mg/L	61.7								
	Bromide	mg/L	1.8								
	Sulfate (PWS)	mg/L	1400								
	Fluoride (PWS)	mg/L	0.4								
Group 2	Total Aluminum	µg/L	< 100								
	Total Antimony	µg/L	< 2								
	Total Arsenic	µg/L	10								
	Total Barium	µg/L	41								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	18500								
	Total Cadmium	µg/L	0.06								
	Total Chromium (III)	µg/L	1.2								
	Hexavalent Chromium	µg/L	< 3.1								
	Total Cobalt	µg/L	< 0.62								
	Total Copper	µg/L	< 1.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 5								
	Dissolved Iron	µg/L	32.3								
	Total Iron	µg/L	300								
	Total Lead	µg/L	0.33								
	Total Manganese	µg/L	150								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	1.4								
	Total Phenols (Phenolics) (PWS)	µg/L	11.2								
	Total Selenium	µg/L	38.4								
	Total Silver	µg/L	0.073								
	Total Thallium	µg/L	0.011								
Total Zinc	µg/L	< 50									
Total Molybdenum	µg/L	250									
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



Toxic Man  
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## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124

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 <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	098124	0.52	970	0.0363			Yes
End of Reach 1	098124	0.02	930	0.05			Yes

### Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream	
			Stream	Tributary						Hardness	pH	Hardness*	pH*
Point of Discharge	0.52	0.1	0.000123									100	7
End of Reach 1	0.02	0.1	0.001										

### Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream	
			Stream	Tributary						Hardness	pH	Hardness*	pH*
Point of Discharge	0.52												
End of Reach 1	0.02												



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outf...

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	751	
Total Antimony	0	0		0	1,100	1,100	1,101	
Total Arsenic	0	0		0	340	340	340	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,022	
Total Boron	0	0		0	8,100	8,100	8,109	
Total Cadmium	0	0		0	22.388	26.6	26.7	Chem Translator of 0.84 applied
Total Chromium (III)	0	0		0	4357.087	13,788	13,803	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.1	
Total Copper	0	0		0	139.565	145	146	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	827.386	1,928	1,930	Chem Translator of 0.429 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	3829.064	3,837	3,841	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	230.611	271	272	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.1	
Total Zinc	0	0		0	961.359	983	984	Chem Translator of 0.978 applied

**CFC**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	220	
Total Arsenic	0	0		0	150	150	150	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,104	
Total Boron	0	0		0	1,800	1,800	1,802	
Total Cadmium	0	0		0	1.372	1.7	1.71	Chem Translator of 0.805 applied
Total Chromium (III)	0	0		0	568.767	659	660	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	19.0	
Total Copper	0	0		0	74.800	77.9	78.0	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	1,502	WQC = 30 day average; PMF =
Total Lead	0	0		0	32.242	75.1	75.2	Chem Translator of 0.429 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	425.291	427	427	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.800	4.99	4.99	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	13.0	
Total Zinc	0	0		0	989.223	983	984	Chem Translator of 0.986 applied

**THH**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	5.61	
Total Arsenic	0	0		0	10	10.0	10.0	
Total Barium	0	0		0	2,400	2,400	2,403	
Total Boron	0	0		0	3,100	3,100	3,103	
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	300
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	1,001
Total Mercury	0	0		0	0.050	0.05	0.05
Total Nickel	0	0		0	610	610	611
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):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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			Units	Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX				
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% W
Total Arsenic	0.006	0.01	10.0	15.6	25.0	µg/L	10.0	THH	Discharge Conc ≥ 50% W
Total Boron	0.99	1.55	1,602	2,499	4,004	µg/L	1,602	CFC	Discharge Conc ≥ 50% W
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	10.4	CFC	Discharge Conc > 10% W
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	300	THH	Discharge Conc > 10% W
Total Iron	Report	Report	Report	Report	Report	µg/L	1,502	CFC	Discharge Conc > 10% W
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,001	THH	Discharge Conc > 10% W
Total Selenium	0.003	0.005	4.99	7.79	12.5	µg/L	4.99	CFC	Discharge Conc ≥ 50% W

**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, 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	2,403	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	1.71	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	660	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	19.0	µg/L	Discharge Conc < TQL
Total Copper	78.0	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Lead	75.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.05	µg/L	Discharge Conc < TQL
Total Nickel	427	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	271	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.24	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	983	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:

Outfall 002 USGS Streams Stats Report

## StreamStats Report

Region ID: PA  
 Workspace ID: PA20220816143146660000  
 Clicked Point (Latitude, Longitude): 40.24968, -79.93569  
 Time: 2022-08-16 10:32:09 -0400



[+ Collapse All](#)

### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0363	square miles
ELEV	Mean Basin Elevation	980	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	0.0363	square miles	2.26	1400
ELEV	Mean Basin Elevation	980	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	0.000543	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.00121	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	0.000123	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.000331	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.00076	ft <sup>3</sup> /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/>)

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Attachment D:

Outfall 002 Toxics Management Spreadsheet Evaluation



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 002

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.00094	1300	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank		
			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	2000									
	Chloride (PWS)	mg/L	66.9									
	Bromide	mg/L	1.5									
	Sulfate (PWS)	mg/L	980									
	Fluoride (PWS)	mg/L	< 0.2									
Group 2	Total Aluminum	µg/L	9.3									
	Total Antimony	µg/L	< 2									
	Total Arsenic	µg/L	< 2.8									
	Total Barium	µg/L	11									
	Total Beryllium	µg/L	< 1									
	Total Boron	µg/L	6580									
	Total Cadmium	µg/L	0.02									
	Total Chromium (III)	µg/L	1.2									
	Hexavalent Chromium	µg/L	< 3.1									
	Total Cobalt	µg/L	< 0.62									
	Total Copper	µg/L	< 1.5									
	Free Cyanide	µg/L										
	Total Cyanide	µg/L	< 5									
	Dissolved Iron	µg/L	< 12									
	Total Iron	µg/L	< 12									
	Total Lead	µg/L	0.04									
	Total Manganese	µg/L	19									
	Total Mercury	µg/L	< 0.2									
	Total Nickel	µg/L	< 0.6									
	Total Phenols (Phenolics) (PWS)	µg/L	31									
	Total Selenium	µg/L	10.2									
	Total Silver	µg/L	0.021									
	Total Thallium	µg/L	0.019									
Total Zinc	µg/L	22.2										
Total Molybdenum	µg/L	42										
Acrolein	µg/L	<										
Acrylamide	µg/L	<										
Acrylonitrile	µg/L	<										
Benzene	µg/L	<										
Bromoform	µg/L	<										



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 002

Instructions Discharge **Stream**

Receiving Surface Water Name: Unnamed Tributary to Monongahela Ri

No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	098124	0.52	970	0.0363			Yes
End of Reach 1	098124	0.02	930	0.0364			Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.52	0.1	0.000123									100	7		
End of Reach 1	0.02	0.1	0.000124												

Q<sub>n</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.52														
End of Reach 1	0.02														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 002

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	813	
Total Antimony	0	0		0	1,100	1,100	1,193	
Total Arsenic	0	0		0	340	340	369	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	22,776	
Total Boron	0	0		0	8,100	8,100	8,785	
Total Cadmium	0	0		0	22.525	26.8	29.1	Chem Translator of 0.84 applied
Total Chromium (III)	0	0		0	4379.661	13,860	15,032	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	17.7	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	103	
Total Copper	0	0		0	140.397	146	159	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	832.272	1,944	2,108	Chem Translator of 0.428 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.79	Chem Translator of 0.85 applied
Total Nickel	0	0		0	3849.558	3,857	4,184	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	233.127	274	297	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	70.5	
Total Zinc	0	0		0	966.512	988	1,072	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	239	
Total Arsenic	0	0		0	150	150	163	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,447	
Total Boron	0	0		0	1,600	1,600	1,735	
Total Cadmium	0	0		0	1.378	1.71	1.86	Chem Translator of 0.805 applied
Total Chromium (III)	0	0		0	569.704	662	718	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.3	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	20.6	
Total Copper	0	0		0	75.204	78.3	85.0	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	1,627	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	32.432	75.8	82.2	Chem Translator of 0.428 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.98	Chem Translator of 0.85 applied
Total Nickel	0	0		0	427.567	429	465	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.800	4.99	5.41	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	14.1	
Total Zinc	0	0		0	974.418	988	1,072	Chem Translator of 0.986 applied

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	6.07	
Total Arsenic	0	0		0	10	10.0	10.8	
Total Barium	0	0		0	2,400	2,400	2,603	
Total Boron	0	0		0	3,100	3,100	3,362	
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	325
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	1,085
Total Mercury	0	0		0	0.050	0.05	0.054
Total Nickel	0	0		0	610	610	662
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	0.26
Total Zinc	0	0		0	N/A	N/A	N/A

CRL

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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 Aluminium	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 Boron	0.014	0.021	1,735	2,707	4,338	µg/L	1,735	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	11.3	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	0.00004	0.00007	5.41	8.44	13.5	µg/L	5.41	CFC	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	Discharge Conc < TQL
Total Aluminum	750	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	2,803	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	1.86	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	718	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	20.6	µg/L	Discharge Conc < TQL
Total Copper	85.0	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	325	µg/L	Discharge Conc < TQL
Total Iron	1,627	µg/L	Discharge Conc < TQL
Total Lead	82.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,085	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.054	µg/L	Discharge Conc < TQL
Total Nickel	465	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	274	µg/L	Discharge Conc ≤ 10% WQBEL

Total Thallium	0.26	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	988	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment E:

Outfall 003 USGS Streams Stats Report

## StreamStats Report

Region ID: PA  
 Workspace ID: PA20221006114232363000  
 Clicked Point (Latitude, Longitude): 40.24239, -79.93328  
 Time: 2022-10-06 07:42:56 -0400



⊕ Collapse All

### ➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5330	square miles
ELEV	Mean Basin Elevation	1826	feet

### ➤ Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (5320 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5330	square miles	2.26	1400
ELEV	Mean Basin Elevation	1826	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (5320 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 [99.9 Percent (5320 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	702	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	930	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	411	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	479	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	710	ft <sup>3</sup> /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/>)**

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Attachment F:

Outfall 003 Toxics Management Spreadsheet Evaluation



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 003

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.07448	1200	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank			
			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	2000									
	Chloride (PWS)	mg/L	61.7									
	Bromide	mg/L	1.8									
	Sulfate (PWS)	mg/L	1400									
	Fluoride (PWS)	mg/L	0.4									
Group 2	Total Aluminum	µg/L	< 100									
	Total Antimony	µg/L	< 2									
	Total Arsenic	µg/L	10									
	Total Barium	µg/L	41									
	Total Beryllium	µg/L	< 1									
	Total Boron	µg/L	18500									
	Total Cadmium	µg/L	0.06									
	Total Chromium (III)	µg/L	1.2									
	Hexavalent Chromium	µg/L	< 3.1									
	Total Cobalt	µg/L	< 0.62									
	Total Copper	µg/L	< 1.5									
	Free Cyanide	µg/L										
	Total Cyanide	µg/L	< 5									
	Dissolved Iron	µg/L	32.3									
	Total Iron	µg/L	300									
	Total Lead	µg/L	0.33									
	Total Manganese	µg/L	150									
	Total Mercury	µg/L	< 0.2									
	Total Nickel	µg/L	1.4									
	Total Phenols (Phenolics) (PWS)	µg/L	11.2									
	Total Selenium	µg/L	38.4									
	Total Silver	µg/L	0.073									
	Total Thallium	µg/L	0.011									
	Total Zinc	µg/L	< 50									
	Total Molybdenum	µg/L	250									
	Acrolein	µg/L	<									
Acrylamide	µg/L	<										
Acrylonitrile	µg/L	<										
Benzene	µg/L	<										
Bromofom	µg/L	<										



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 003

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 <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	25.8	910	5330			Yes
End of Reach 1	037185	25	909	5331			Yes

### Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	25.8	0.1	550			850	12					100	7		
End of Reach 1	25	0.1	550			850	12								

### Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	25.8														
End of Reach 1	25														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 003

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	353,204	
Total Antimony	0	0		0	1,100	1,100	518,033	
Total Arsenic	0	0		0	340	340	160,119	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	9,889,720	
Total Boron	0	0		0	8,100	8,100	3,814,606	
Total Cadmium	0	0		0	2,059	2.18	1,028	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	580.640	1,837	865,336	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	7,673	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	44,739	
Total Copper	0	0		0	13.735	14.3	6,738	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	66,225	84.1	39,597	Chem Translator of 0.788 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1,400	1.65	776	Chem Translator of 0.85 applied
Total Nickel	0	0		0	477.472	478	225,311	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	3,347	3.94	1,854	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	30,611	
Total Zinc	0	0		0	119,495	122	57,541	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	716,503	
Total Arsenic	0	0		0	150	150	488,525	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	13,353,017	
Total Boron	0	0		0	1,600	1,600	5,210,933	
Total Cadmium	0	0		0	0.247	0.27	884	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.319	86.4	281,449	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	33,855	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	61,880	
Total Copper	0	0		0	8.982	9.36	30,470	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	7,161,680	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.526	3.2	10,406	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2,950	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.155	52.3	170,372	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.800	4.99	16,249	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	42,339	
Total Zinc	0	0		0	118.477	120	391,339	Chem Translator of 0.986 applied

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	18,238	
Total Arsenic	0	0		0	10	10.0	32,568	
Total Barium	0	0		0	2,400	2,400	7,816,400	
Total Boron	0	0		0	3,100	3,100	10,096,183	
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	977,050
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	3,256,833
Total Mercury	0	0		0	0.050	0.05	163
Total Nickel	0	0		0	610	610	1,986,668
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	782
Total Zinc	0	0		0	N/A	N/A	N/A

CRL      CCT (min): #####      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			Units	Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX				

**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	226,390	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	32,568	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	6,338,911	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,445,009	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	659	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	281,449	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	4,918	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	28,676	µg/L	Discharge Conc < TQL
Total Copper	4,319	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	977,050	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	7,161,680	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	10,406	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,256,833	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	163	µg/L	Discharge Conc < TQL
Total Nickel	144,415	µg/L	Discharge Conc ≤ 10% WQBEL

Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	16,249	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	1,189	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	782	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	36,881	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment G:

Outfall 004 USGS Streams Stats Report

## 004 StreamStats Report

Region ID: PA  
 Workspace ID: PA20220816144126496000  
 Clicked Point (Latitude, Longitude): 40.24570, -79.94839  
 Time: 2022-08-16 10:41:46 -0400



 Collapse All

### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.19	square miles
ELEV	Mean Basin Elevation	1136	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	0.19	square miles	2.26	1400
ELEV	Mean Basin Elevation	1136	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	0.00404	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.0084	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	0.00103	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.00248	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.00543	ft <sup>3</sup> /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/>)

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## StreamStats Report

Region ID: PA

Workspace ID: PA20221006114232363000

Clicked Point (Latitude, Longitude): 40.24239, -79.93328

Time: 2022-10-06 07:42:56 -0400



Collapse All

### Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5330	square miles
ELEV	Mean Basin Elevation	1826	feet

### Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (5320 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5330	square miles	2.26	1400
ELEV	Mean Basin Elevation	1826	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (5320 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 [99.9 Percent (5320 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	702	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	930	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	411	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	479	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	710	ft <sup>3</sup> /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/>)**

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Attachment H:

Outfall 004 Toxics Management Spreadsheet Evaluation



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 004

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.017	1500	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	3100								
	Chloride (PWS)	mg/L	6.6								
	Bromide	mg/L	0.8								
	Sulfate (PWS)	mg/L	1700								
	Fluoride (PWS)	mg/L	< 0.2								
Group 2	Total Aluminium	µg/L	130								
	Total Antimony	µg/L	< 2								
	Total Arsenic	µg/L	36								
	Total Barium	µg/L	29								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	24900								
	Total Cadmium	µg/L	0.14								
	Total Chromium (III)	µg/L	17.9								
	Hexavalent Chromium	µg/L	5								
	Total Cobalt	µg/L	< 0.62								
	Total Copper	µg/L	< 1.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 5								
	Dissolved Iron	µg/L	< 12								
	Total Iron	µg/L	457								
	Total Lead	µg/L	5.9								
	Total Manganese	µg/L	72								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	1.3								
	Total Phenols (Phenolics) (PWS)	µg/L	44.1								
	Total Selenium	µg/L	32.8								
	Total Silver	µg/L	0.011								
	Total Thallium	µg/L	0.059								
	Total Zinc	µg/L	23								
	Total Molybdenum	µg/L	1000								
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 004

Instructions **Discharge** Stream

Receiving Surface Water Name: Unnamed Tributary to Monongahela Ri

No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	039579	0.4	990	0.19			Yes
End of Reach 1	039579	0.02	930	0.2			Yes

**Q<sub>7-10</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.4	0.1	0.00103									100	7		
End of Reach 1	0.02	0.1	0.00104												

**Q<sub>n</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.4														
End of Reach 1	0.02														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 004

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	779	
Total Antimony	0	0		0	1,100	1,100	1,143	
Total Arsenic	0	0		0	340	340	353	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,822	
Total Boron	0	0		0	8,100	8,100	8,417	
Total Cadmium	0	0		0	26.857	32.3	33.5	Chem Translator of 0.832 applied
Total Chromium (III)	0	0		0	5083.657	16,088	16,718	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.9	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	98.7	
Total Copper	0	0		0	166.660	174	180	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	984.274	2,451	2,547	Chem Translator of 0.402 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.71	Chem Translator of 0.85 applied
Total Nickel	0	0		0	4490.356	4,499	4,676	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	318.820	375	390	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	67.5	
Total Zinc	0	0		0	1127.665	1,153	1,198	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	229	
Total Arsenic	0	0		0	150	150	158	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,261	
Total Boron	0	0		0	1,800	1,800	1,863	
Total Cadmium	0	0		0	1.562	1.98	2.04	Chem Translator of 0.797 applied
Total Chromium (III)	0	0		0	661.279	769	799	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19.7	
Total Copper	0	0		0	87.858	91.5	95.1	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	1,559	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	38.356	95.5	99.2	Chem Translator of 0.402 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.94	Chem Translator of 0.85 applied
Total Nickel	0	0		0	498.740	500	520	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.800	4.99	5.18	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	13.5	
Total Zinc	0	0		0	1136.889	1,153	1,198	Chem Translator of 0.986 applied

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	5.82	
Total Arsenic	0	0		0	10	10.0	10.4	
Total Barium	0	0		0	2,400	2,400	2,494	
Total Boron	0	0		0	3,100	3,100	3,221	
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	312
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	1,039
Total Mercury	0	0		0	0.050	0.05	0.052
Total Nickel	0	0		0	610	610	634
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	0.25
Total Zinc	0	0		0	N/A	N/A	N/A

CRL      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	0.001	0.002	10.4	16.2	26.0	µg/L	10.4	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	0.24	0.37	1,663	2,594	4,157	µg/L	1,663	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	10.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,559	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	0.0007	0.001	5.18	8.09	13.0	µg/L	5.18	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Thallium	Report	Report	Report	Report	Report	µg/L	0.25	THH	Discharge Conc > 10% WQBEL (no 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	Discharge Conc < TQL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Barium	2,494	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	2.04	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	799	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	19.7	µg/L	Discharge Conc < TQL
Total Copper	95.1	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	312	µg/L	Discharge Conc < TQL
Total Lead	99.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,039	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.052	µg/L	Discharge Conc < TQL
Total Nickel	520	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	375	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	1,153	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS



## Discharge Information

Instructions **Discharge** Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 004

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.017	1500	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			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	3100								
	Chloride (PWS)	mg/L	6.6								
	Bromide	mg/L	0.8								
	Sulfate (PWS)	mg/L	1700								
	Fluoride (PWS)	mg/L	< 0.2								
Group 2	Total Aluminum	µg/L	130								
	Total Antimony	µg/L	< 2								
	Total Arsenic	µg/L	36								
	Total Barium	µg/L	29								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	24900								
	Total Cadmium	µg/L	0.14								
	Total Chromium (III)	µg/L	17.9								
	Hexavalent Chromium	µg/L	5								
	Total Cobalt	µg/L	< 0.62								
	Total Copper	µg/L	< 1.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 5								
	Dissolved Iron	µg/L	< 12								
	Total Iron	µg/L	457								
	Total Lead	µg/L	5.9								
	Total Manganese	µg/L	72								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	1.3								
	Total Phenols (Phenolics) (PWS)	µg/L	44.1								
	Total Selenium	µg/L	32.8								
	Total Silver	µg/L	0.011								
	Total Thallium	µg/L	0.059								
	Total Zinc	µg/L	23								
	Total Molybdenum	µg/L	1000								
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 004

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 <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	28.1	910	5330			Yes
End of Reach 1	037185	27.1	909	5331			Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	28.1	0.1	550			850	12					100	7		
End of Reach 1	27.1	0.1	550			850	12								

Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	28.1														
End of Reach 1	27.1														

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	2,967,632	
Total Arsenic	0	0		0	150	150	2,023,388	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	55,305,873	
Total Boron	0	0		0	1,600	1,600	21,582,780	
Total Cadmium	0	0		0	0.246	0.27	3,653	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.178	86.3	1,163,486	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	140,221	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	256,296	
Total Copper	0	0		0	8.964	9.34	125,951	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	31,371,514	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.519	3.19	42,974	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	12,220	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.052	52.2	704,257	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	67,300	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	175,360	
Total Zinc	0	0		0	118.243	120	1,617,653	Chem Translator of 0.986 applied

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	75,540	
Total Arsenic	0	0		0	10	10.0	134,892	
Total Barium	0	0		0	2,400	2,400	32,374,170	
Total Boron	0	0		0	3,100	3,100	41,816,636	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 004

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	1,460,895	
Total Antimony	0	0		0	1,100	1,100	2,142,645	
Total Arsenic	0	0		0	340	340	662,272	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	40,905,047	
Total Boron	0	0		0	8,100	8,100	15,777,661	
Total Cadmium	0	0		0	2.028	2.15	4,186	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	573.115	1,814	3,532,748	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	31,737	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	185,047	
Total Copper	0	0		0	13.530	14.1	27,453	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	65.087	82.4	160,490	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3,208	Chem Translator of 0.85 applied
Total Nickel	0	0		0	471.081	472	919,439	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	3.257	3.83	7,463	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	126,611	
Total Zinc	0	0		0	117.894	121	234,806	Chem Translator of 0.978 applied

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	4,046,771
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	13,489,237
Total Mercury	0	0		0	0.050	0.05	674
Total Nickel	0	0		0	610	610	8,228,435
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	3,237
Total Zinc	0	0		0	N/A	N/A	N/A

CRL

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	Discharge Conc < TQL
Total Aluminum	936,374	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	134,892	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	26,218,483	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	10,112,844	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	2,683	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	1,163,486	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	20,342	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	118,607	µg/L	Discharge Conc < TQL
Total Copper	17,596	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	4,046,771	µg/L	Discharge Conc < TQL
Total Iron	31,371,514	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	42,974	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	13,489,237	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	674	µg/L	Discharge Conc < TQL
Total Nickel	589,323	µg/L	Discharge Conc ≤ 10% WQBEL

Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	67,300	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	4,783	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	3,237	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	150,501	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment I:

Outfall 005 USGS Streams Stats Report

## Outfall 005 StreamStats Report

Region ID: PA  
Workspace ID: PA20220816143633986000  
Clicked Point (Latitude, Longitude): 40.24665, -79.94107  
Time: 2022-08-16 10:36:55 -0400



 Collapse All

### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0351	square miles
ELEV	Mean Basin Elevation	1068	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	0.0351	square miles	2.26	1400
ELEV	Mean Basin Elevation	1068	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	0.000561	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.00126	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	0.000124	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.000337	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.00079	ft <sup>3</sup> /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/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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## StreamStats Report

Region ID: PA

Workspace ID: PA20221006114232363000

Clicked Point (Latitude, Longitude): 40.24239, -79.93328

Time: 2022-10-06 07:42:56 -0400



 Collapse All

### Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5330	square miles
ELEV	Mean Basin Elevation	1826	feet

### Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (5320 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5330	square miles	2.26	1400
ELEV	Mean Basin Elevation	1826	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (5320 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 [99.9 Percent (5320 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	702	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	930	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	411	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	479	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	710	ft <sup>3</sup> /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/>)**

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Attachment J:

Outfall 005 Toxics Management Spreadsheet Evaluation



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 005

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.005	1800	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			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	3000								
	Chloride (PWS)	mg/L	6.7								
	Bromide	mg/L	0.7								
	Sulfate (PWS)	mg/L	1800								
	Fluoride (PWS)	mg/L	0.3								
Group 2	Total Aluminum	µg/L	89.8								
	Total Antimony	µg/L	< 60								
	Total Arsenic	µg/L	24								
	Total Barium	µg/L	24								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	57000								
	Total Cadmium	µg/L	0.16								
	Total Chromium (III)	µg/L	1.5								
	Hexavalent Chromium	µg/L	< 3.1								
	Total Cobalt	µg/L	< 0.62								
	Total Copper	µg/L	< 1.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 5								
	Dissolved Iron	µg/L	72								
	Total Iron	µg/L	48.6								
	Total Lead	µg/L	0.021								
	Total Manganese	µg/L	350								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	0.95								
	Total Phenols (Phenolics) (PWS)	µg/L	40.8								
	Total Selenium	µg/L	60								
	Total Silver	µg/L	0.035								
	Total Thallium	µg/L	0.51								
Total Zinc	µg/L	21									
Total Molybdenum	µg/L	1900									
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 005

- Instructions
- Discharge
- Stream

Receiving Surface Water Name: Unnamed Tributary to Monongahela Ri

No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000000	0.58	980	0.0351			Yes
End of Reach 1	000000	0.02	930	0.0364			Yes

**Q<sub>7-10</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.58	0.1	0.000124									100	7		
End of Reach 1	0.02	0.1	0.000124												

**Q<sub>h</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.58														
End of Reach 1	0.02														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 005

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	762	
Total Antimony	0	0		0	1,100	1,100	1,118	
Total Arsenic	0	0		0	340	340	345	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,337	
Total Boron	0	0		0	8,100	8,100	8,230	
Total Cadmium	0	0		0	32.680	39.7	40.3	Chem Translator of 0.824 applied
Total Chromium (III)	0	0		0	6003.750	18,999	19,304	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	96.5	
Total Copper	0	0		0	201.811	210	214	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	1180.773	3,174	3,225	Chem Translator of 0.372 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.67	Chem Translator of 0.85 applied
Total Nickel	0	0		0	5332.231	5,343	5,429	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	452.139	532	540	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	66.0	
Total Zinc	0	0		0	1339.439	1,370	1,392	Chem Translator of 0.978 applied

**CFC**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	224	
Total Arsenic	0	0		0	150	150	152	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,168	
Total Boron	0	0		0	1,600	1,600	1,626	
Total Cadmium	0	0		0	1.797	2.28	2.31	Chem Translator of 0.789 applied
Total Chromium (III)	0	0		0	780.985	908	923	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19.3	
Total Copper	0	0		0	104.511	109	111	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	1,524	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	46.013	124	126	Chem Translator of 0.372 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.92	Chem Translator of 0.85 applied
Total Nickel	0	0		0	592.246	594	604	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	5.07	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	13.2	
Total Zinc	0	0		0	1350.395	1,370	1,392	Chem Translator of 0.986 applied

**THH**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	5.69	
Total Arsenic	0	0		0	10	10.0	10.2	
Total Barium	0	0		0	2,400	2,400	2,438	
Total Boron	0	0		0	3,100	3,100	3,150	
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	305
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	1,018
Total Mercury	0	0		0	0.050	0.05	0.051
Total Nickel	0	0		0	610	610	620
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):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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 Antimony	0.0002	0.0004	5.69	8.88	14.2	µg/L	5.69	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Arsenic	0.0004	0.0007	10.2	15.9	25.4	µg/L	10.2	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	0.068	0.11	1,626	2,536	4,064	µg/L	1,626	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	10.6	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	305	THH	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,016	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	0.0002	0.0003	5.07	7.91	12.7	µg/L	5.07	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Thallium	0.00001	0.00002	0.24	0.38	0.61	µg/L	0.24	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 Barium	2,438	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	2.31	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	923	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	19.3	µg/L	Discharge Conc < TQL
Total Copper	111	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Iron	1,524	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	126	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.051	µg/L	Discharge Conc < TQL
Total Nickel	604	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	532	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	1,370	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS



## Discharge Information

Instructions Discharge Stream

Facility: Elrama Ash Disposal Site NPDES Permit No.: PA0098124 Outfall No.: 005

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: FGD Residual Leachate

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.005	1800	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	3000								
	Chloride (PWS)	mg/L	6.7								
	Bromide	mg/L	0.7								
	Sulfate (PWS)	mg/L	1800								
	Fluoride (PWS)	mg/L	0.3								
Group 2	Total Aluminum	µg/L	89.8								
	Total Antimony	µg/L	< 60								
	Total Arsenic	µg/L	24								
	Total Barium	µg/L	24								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	57000								
	Total Cadmium	µg/L	0.16								
	Total Chromium (III)	µg/L	1.5								
	Hexavalent Chromium	µg/L	< 3.1								
	Total Cobalt	µg/L	< 0.62								
	Total Copper	µg/L	< 1.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 5								
	Dissolved Iron	µg/L	72								
	Total Iron	µg/L	48.6								
	Total Lead	µg/L	0.021								
	Total Manganese	µg/L	350								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	0.95								
	Total Phenols (Phenolics) (PWS)	µg/L	40.8								
	Total Selenium	µg/L	60								
	Total Silver	µg/L	0.035								
	Total Thallium	µg/L	0.51								
Total Zinc	µg/L	21									
Total Molybdenum	µg/L	1900									
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



## Stream / Surface Water Information

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 005

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 <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	26.6	910	5330			Yes
End of Reach 1	037185	25.6	909	5331			Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	26.6	0.1	550			850	12					100	7		
End of Reach 1	25.6	0.1	550			850	12								

Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	26.6														
End of Reach 1	25.6														



## Model Results

Elrama Ash Disposal Site, NPDES Permit No. PA0098124, Outfall 005

Instructions Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All  Inputs  Results  Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	4,965,074	
Total Antimony	0	0		0	1,100	1,100	7,282,108	
Total Arsenic	0	0		0	340	340	2,250,833	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#####	
Total Boron	0	0		0	8,100	8,100	53,622,797	
Total Cadmium	0	0		0	2.019	2.14	14,159	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	570.961	1,807	11,961,460	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	107,863	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	628,909	
Total Copper	0	0		0	13.472	14.0	92,899	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	64.762	81.9	542,266	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	10,904	Chem Translator of 0.85 applied
Total Nickel	0	0		0	469.253	470	3,112,725	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	3.231	3.8	25,164	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	430,306	
Total Zinc	0	0		0	117.435	120	794,922	Chem Translator of 0.978 applied

CFC CCT (min): 720 PMF: 0.645 Analysis Hardness (mg/l): 100.04 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	10,089,081	
Total Arsenic	0	0		0	150	150	6,878,919	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#####	
Total Boron	0	0		0	1,600	1,600	73,375,135	
Total Cadmium	0	0		0	0.246	0.27	12,414	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.137	86.2	3,953,353	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	476,710	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	871,330	
Total Copper	0	0		0	8.959	9.33	427,954	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	#####	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.518	3.18	145,975	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	41,543	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.023	52.2	2,392,918	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	228,800	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	596,173	
Total Zinc	0	0		0	118.176	120	5,496,442	Chem Translator of 0.986 applied

THH CCT (min): 720 PMF: 0.645 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	256,813	
Total Arsenic	0	0		0	10	10.0	458,595	
Total Barium	0	0		0	2,400	2,400	#####	
Total Boron	0	0		0	3,100	3,100	#####	
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	13,757,838
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	45,859,459
Total Mercury	0	0		0	0.050	0.05	2,293
Total Nickel	0	0		0	610	610	27,974,270
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	11,006
Total Zinc	0	0		0	N/A	N/A	N/A

CRL

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	3,182,412	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	256,813	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	458,595	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	89,107,532	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	34,370,048	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	9,075	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	3,953,353	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	89,136	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	403,106	µg/L	Discharge Conc < TQL
Total Copper	59,545	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	13,757,838	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	#####	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	145,975	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	45,859,459	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	2,293	µg/L	Discharge Conc < TQL

NPDES Permit Fact Sheet  
Elrama Ash Disposal Site

NPDES Permit No. PA0098124

Total Nickel	1,995,131	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	228,800	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	16,129	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	11,006	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	509,513	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment K:  
Site Rerouting Project Layout

