pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **New** | Application No. | **PA0255343** |
| Facility Type | **Industrial** | APS ID | **959126** |
| Major / Minor | **Minor** | Authorization ID | **1213667** |

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

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **West Penn Power Company** | Facility Name | **Mitchell Mingo Landfill** |
| Applicant Address | 800 Cabin Hill Drive<br>Greensburg, PA 15601 | Facility Address | Mingo Church Road<br>Finleyville, PA 15332 |
| Applicant Contact | William Cannon | Facility Contact | William Cannon |
| Applicant Phone | (724) 838-6018 | Facility Phone | (724) 838-6018 |
| Client ID | 338791 | Site ID | 827430 |
| SIC Code | 4953, 4911 | Municipality | Union Township |
| SIC Description | Trans. & Utilities - Refuse Systems, Electric Services | County | Washington |
| Date Application Received | December 8, 2017 | EPA Waived? | No |
| Date Application Accepted | March 19, 2018 | If No, Reason | Expressed Interest |
| Purpose of Application | To separate coverage of the discharge from the Coal Combustion Residue Landfill from two other sites and receive its own NPDES permit coverage. | | |

## Summary of Review

The Department received an NPDES permit renewal application from West Penn Power Company for coverage of its Mitchell Mingo Landfill (Mingo) on December 8, 2017. Mingo is currently covered under NPDES permit number PA0002895 with two other sites, the Mitchell Power Station and the Mitchell FGD landfill. Permit PA0002895 is being separated into three permits to cover each site individually. Mingo is transferring ownership from Allegheny Energy Supply Company to West Penn Power Company to reflect a change in ownership of the site. Mingo has an SIC code of 4953 (Refuse Systems), and is a Coal Combustion Residue Landfill. Mingo is a closed coal ash landfill for the closed Mitchell Power Station. Mingo has been in post-closure since August 28, 1998. Mingo has one outfall, Outfall 006, that currently discharges to a culverted stream, an unnamed tributary to Peters Creek. West Penn Power is proposing to pipe the discharge to Peters Creek, designated in the 25 PA Code Chapter 93 as a Trout Stocking Fishery (TSF), to receive less stringent Water Quality Based Effluent Limitations. The PA0002895 permit was last issued on September 30, 1991, expired on September 30, 1996 but has been administratively extended.

The 1991 NPDES permit imposed WQBELs for both Boron and Aluminum. West Penn Power appealed and later entered into a settlement in 1992, pursuant to which the Boron WQBELs were revised. As part of the 1992 settlement, West Penn agreed to complete a site-specific study to evaluate the validity of the Boron and Aluminum effluent limits that were originally included in the 1991 NPDES permit. In 2001, DEP issued a draft renewal NPDES permit that included Outfall 006. Allegheny Energy submitted comments on the 2001 draft permit, but the permit was not finalized.

In late 1999, following deregulation of the electric generating industry in Pennsylvania, ownership of the Mitchell power station and its active solid waste disposal site (Mitchell FGD Landfill) was transferred from West Penn Power Company to Allegheny Energy Supply Company, LLC (AESC). Legal ownership of Mitchell's original and by-then-closed solid waste disposal site (Mingo) remained with West Penn Power (WPP). The October 22, 2001 Draft permit contained an error in this regard as it described Mingo as owned by Allegheny Energy Supply Company, LLC instead of its true owner, West Penn

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | Adam Olesnanik / Environmental Engineering Specialist | 2-18-20 |
| ✓ | | Michael E. Fifth, P.E. / Environmental Engineer Manager | 2/18/20 |

**Summary of Review**

Power Company. In 2011, Allegheny Energy, Inc., parent company of WPP and AESC, was purchased by FirstEnergy Corp. The Mitchell Power Station ceased operation effective October 9, 2013.

Since its closure, leachate from Mingo has been routed by gravity to a half-acre retention pond, where it is then intermittently discharged at Outfall 006. The retention pond also receives stormwater from a small portion of Mingo and the area surrounding the pond, the discharge travels approximately 1,300 feet via a partially culverted unnamed tributary to Peters Creek, which then flows to the Monongahela River. The discharge at Outfall 006 is somewhat precipitation-dependent, in that there is some limited stormwater flow to the retention pond and the leachate flows themselves are affected by precipitation – induced base flow. Low-flow discharges typically occur in the late-summer and fall, and the high-flow discharges typically occur during wetter months in the spring. In other words, the higher flow discharges from Outfall 006 at the Mingo Landfill correspond to high-flow conditions in Peters creek and vice-versa.

Discussions have continued intermittently over the years between West Penn Power and DEP regarding how best to deal with the discharge at Outfall 006. During much of this time, West Penn Power expected that the limits would be re-calculated based on Peters Creek as the receiving stream. However, the receiving stream (unnamed tributary to Peters Creek) was re-evaluated and the Department concluded that there is a viable aquatic use in the unnamed tributary. This required West Penn Power to re-evaluate the issue. However, West Penn Power concluded that there is no technically feasible treatment technology to remove Boron from the leachate. West Penn proposes to route the discharge from Outfall 006 directly to Peters Creek, where there is suggested to be sufficient assimilative capacity to accept the discharge. West Penn Power did a preliminary assessment of possible WQBELs for boron at Outfall 006 to Peters Creek.

In West Penn Power's preliminary assessment, they were looking at what is a good representation of the discharge flow, as Outfall 006 discharge flow rate is variable and dependent on precipitation. It was determined that when low stream flows occur, discharge flows are correspondingly low. West Penn Power suggests that based on this information, it would be inappropriate to use the long-term average flow rate from Outfall 006 for WQBEL development. A relationship between Outfall 006 discharge flow rate and stream flow exists and West Penn Power feels it should be accounted for when developing WQBELs. West Penn Power suggested that the discharge flow rate is commensurate with Q7-10 stream flow. Peter Creek does not have a stream gage, so the flow of the stream cannot be compared to the outfall discharge flow. To use this relationship, WPP looked at streams near Peters Creek that had flow gages; Sawmill Run was one of these streams. The average discharge flow rate should be calculated from discharge flows measured concurrently with the Q7-10 flow of Sawmill Run. WPP compared the discharge flow from Outfall 006 and the 7-day average flow of Sawmill Run. The Q7-10 of Sawmill Run is 0.28 cfs but WPP decided to use the Sawmill Run 7-day average flow of 3.5 cfs. When the 7-day average flow was 3.5 cfs, the average Outfall 006 flow rate was 0.003 mgd. The value of 3.5 cfs is greater than the Q7-10 flow value for Sawmill Run of 0.28 cfs and, therefore, the Outfall 006 discharge value of 0.003 mgd is presumed to be a higher estimate of Outfall 006 flow during Q7-10 stream flow conditions. Using this flow and the Q7-10 from StreamStats, the boron WQBELs determined by West Penn Power are 33.6 mg/L Monthly Average and 52.4 mg/L Daily Maximum. However, it was determined by the Department that based upon WPP's discharge concentrations, boron would only receive monitoring requirements. In order to maintain eligibility for the granted flow variance during the next permit cycle, a Part C condition is included in the Draft Permit that requires the permittee to collect representative streamflow data for Peters Creek and effluent flow data for Outfall 001. The Draft Permit will also require the permittee to collect instream boron data at Peters Creek.

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 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. | 006 Current Location | Design Flow (MGD) | 0.0871 |
| Latitude | 40º 14' 35" | Longitude | -80º 01' 15" |
| Quad Name | Hackett | Quad Code | 1705 |
| Wastewater Description: | Leachate, Seeps, Springs and Stormwater from Closed Coal Ash Landfill | | |
| Receiving Waters | Unt to Peters Creek | Stream Code | |
| NHD Com ID | 99408954 | RMI | 0.24 |
| Drainage Area | 0.0917 | Yield (cfs/mi$^2$) | 0.0047 |
| $Q_{7-10}$ Flow (cfs) | 0.000435 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 1060 | Slope (ft/ft) | 0.0001 |
| Watershed No. | 19-C | Chapter 93 Class. | TSF |
| Existing Use | | Existing Use Qualifier | |
| Exceptions to Use | | Exceptions to Criteria | |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Cause Unknown, Metals, Pathogens | | |
| Source(s) of Impairment | Abandoned Mine Drainage, Source Unknown, Source Unknown | | |
| TMDL Status | Final | Name | Peters Creek Watershed |
| Nearest Downstream Public Water Supply Intake | PA American Water Co – Pittsburgh | | |
| PWS Waters | Monongahela River | Flow at Intake (cfs) | 1,060 |
| PWS RMI | 4.72 | Distance from Outfall (mi) | 61.35 |

USGS StreamStats Drainage area for the current Outfall 006 location is displayed in Attachment A.

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

| | | | |
|---|---|---|---|
| Outfall No. | 006 Proposed location | Design Flow (MGD) | 0.0871 |
| Latitude | 40º 14' 45.09" | Longitude | -80º 01' 8.30" |
| Quad Name | Hackett | Quad Code | 1705 |
| Wastewater Description: | Leachate, Seeps, Springs and Stormwater from Closed Coal Ash Landfill | | |
| Receiving Waters | Peters Creek | Stream Code | 39425 |
| NHD Com ID | 99408954 | RMI | 14.33 |
| Drainage Area | 7.27 | Yield (cfs/mi$^2$) | 0.0128 |
| $Q_{7-10}$ Flow (cfs) | 0.0927 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 960 | Slope (ft/ft) | 0.0001 |
| Watershed No. | 19-C | Chapter 93 Class. | TSF |
| Existing Use | | Existing Use Qualifier | |
| Exceptions to Use | | Exceptions to Criteria | |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Cause Unknown, Metals, Pathogens | | |
| Source(s) of Impairment | Abandoned Mine Drainage, Source Unknown, Source Unknown | | |
| TMDL Status | Final | Name | Peters Creek Watershed |
| Nearest Downstream Public Water Supply Intake | PA American Water Co – Pittsburgh | | |
| PWS Waters | Monongahela River | Flow at Intake (cfs) | 1,060 |
| PWS RMI | 4.72 | Distance from Outfall (mi) | 61.11 |

USGS StreamStats Drainage area for the proposed Outfall 006 relocation is displayed in Attachment B.

## Development of Effluent Limitations

**Outfall No.** 006 Current Location **Design Flow (MGD)** 0.0871
**Latitude** 40º 14' 35" **Longitude** -80º 01' 15"
**Wastewater Description:** Leachate, Seeps, Springs and Stormwater from Closed Coal Ash Landfill

### Technology-Based Limitations

Federal Effluent Limitation Guidelines (ELGs)

The site is subject to Federal Effluent Limitation Guidelines (ELGs) pursuant to 40 CFR 423.12(b) (11) (Steam Electric Power Generating Point Source Category) and must achieve the limits in Table 1 below. Based on the type of discharge and 40 CFR 423.12(b) (12), the limitations will be expressed as concentration limitation instead of mass-based limitations.

**Table 1. Federal ELGs**

| Parameter | Monthly Avg. (mg/L) | Maximum Daily (mg/L) |
|---|---|---|
| TSS | 30 | 100 |
| Oil and Grease | 15 | 20 |

Total Dissolved Solids Considerations

Outfall 006 is subject to Chapter 95.10 Effluent Standards for total dissolved solids (TDS). The provisions of Chapter 95.10 were adopted on August 20, 2010 and became effective August 21, 2010. Chapter 95.10 of the Department's regulations establishes the effluent standards applicable to new and expanding discharges of TDS. Under the provisions of this regulation, dischargers that are subject to the requirements of 95.10 must be identified; discharges that are exempt from any treatment requirements under this chapter must be identified; the existing mass loadings of TDS that are exempt from the treatment requirements must be identified and quantified; and discharges of new and expanding mass loadings of TDS must be evaluated.

Integral to the implementation of Chapter 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010 are exempt. Generally, no permit actions are required until an NPDES permit is issued, renewed, or amended. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or there is a change in the waste stream. If there are existing mass or production based TDS effluent limits, then these are used as the basis for the existing mass loading.

The discharge from Outfall 006 was authorized, and existed prior to August 21, 2010. Therefore, the discharge is considered to be an existing, authorized mass loading of TDS and is exempt from any treatment requirements.

The maximum mass loading contained in the NPDES permit application for Outfall 006 is 859 $^{lb}/_{day}$ (1,225 $_{mg/L}$). The TDS discharge is less than 2,000 $^{lb}/_{day}$ measured as an average daily discharge, over the course of a calendar year, otherwise known as an annual average daily load. Effluent limitations for TDS based on 95.10 are not proposed.

Regulatory Effluent Standards and Monitoring Requirements

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

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 2.

**Table 2: Regulatory Effluent Standards and Monitoring Requirements for Outfall 006**

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

## Water Quality-Based Limitations

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential and Developing WQBELs

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

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

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. 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 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]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (see Attachment C).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

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

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

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

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 collected on a spreadsheet titled "Toxics Screening Analysis" and is displayed in Attachment C.

PENTOXSD Water Quality Modeling Program

PENTOXSD Version 2.0 for Windows is a single discharge, mass-balance water quality modeling program 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 and discharge flow rate are entered into PENTOXSD to establish Mingo-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. Pollutants are then selected for analysis based on those present or likely to be present in a discharge at levels that may cause, have the reasonable potential to cause, or contribute to excursions above state water quality standards (i.e., a reasonable potential analysis). Discharge concentrations for the selected pollutants are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). PENTOXSD then evaluates each pollutant 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, PENTOXSD recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 006

Due to the location of the site there is no upland flow contribution at the point of discharge. The receiving stream has a $Q_{7\text{-}10}$ of zero. Whenever industrial facilities discharge wastewater to an intermittent or zero-flow stream, the discharges must meet the water quality criteria published in PA Code Chapter 93.8 and PENTOXSD modeling will not be performed. Any pollutants of concern identified in the Toxic Screening Analysis that is recommended for screening in PENTOXSD must meet the water quality criteria. The WQBELs based on the Toxic Screening Analysis are displayed below in Table 3. Some Potable Water Supply parameters (Total Dissolved Solids, Sulfate and Total Phenols) were candidates for PENTOXSD Modeling however they did not receive limits due to the discharge being over 61 miles downstream from the closest Potable Water Supply intake.

**Table 3. WQBELs from Toxics Screening Analysis for Current Outfall 006 Location**

| Parameter | Monthly average | Daily maximum |
|---|---|---|
| Boron, total (mg/L) | 1.6 | 3.2 |
| Mercury, Total (µg/L) | 0.05 | 0.10 |
| Selenium, Total (µg/L) | 5.0 | 10.0 |

The outfall is planned to be relocated, therefore the WQBELs at this location would no longer apply, as there will no longer be a discharge at this location; so, the limits will not be included in Part A of the permit. WPP will still be required to monitor these parameters at this location and achieve the existing effluent limitations, until the outfall is relocated. In the case for boron, there are effluent limits currently imposed at Outfall 006; therefore, those limits will remain in the NPDES Permit until completion of the pipeline project.

Total Maximum Daily Loads

Wastewater discharges from Mingo are located within the Peters Creek Watershed for which the Department has developed a TMDL. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's; Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). The TMDL was developed for segments in the Peters Creek Watershed. These were done to address the impairments noted on the 1996 Pennsylvania Section 303(d) list of impaired waters, required under the Clean Water act, and covers one segment on that list and additional segments on later list/reports. Peters Creek was listed as impaired for metals. All impairments resulted from drainage from abandoned coalmines. The TMDL addresses the three-primary metal associated with abandoned mine drainage (iron, manganese, aluminum) and pH. Stream data is used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity).

One of the major components of a TMDL is the establishment of an instream numeric endpoint, which is used to evaluate the attainment of applicable water quality. An instream numeric endpoint, therefore, represents the water quality goal that is to be achieved by implementing the load reduction specified in the TMDL. The endpoint allows for a comparison between observed instream conditions and conditions that are expected to restore designated uses. The endpoint is based on either narrative or numeric criteria available in water quality standards. Because the pollution sources in the watershed are nonpoint sources, the TMDLs' component makeup will be load allocations (LAs) with waste load allocations (WLAs) for permitted discharges. All allocations will be specified as long-term average daily concentrations. These long-term average concentrations are expected to meet water-quality criteria 99% of the time as required in PA Title 25 Chapter 96.3(c).

The TMDL for Peters Creek developed load allocations to four sampling sites on Peters Creek (PC5, PC4, PC3 and PCs, six sites on unnamed tributaries to Peters Creek (PCTR1-6), one site on Lewis Run (LW1), one site on Lick Run (LR1), and one site on Piney Fork (PF1). Sample data sets were collected in 2007 and 2008. An allowable long-term average in-stream concentration was determined at each sample point for metals and acidity. The analysis is designed to produce an average value that, when met, will be protective of the water-quality criterion for that parameter 99% of the time. An analysis was performed using Monte Carlo simulation to determine the necessary long-term average concentration needed to attain water-quality criteria 99% of the time. The simulation was run assuming the data set was log normally distributed. Using the mean and standard deviation of the data set, 5000 iterations of sampling were completed, and compared against the water-quality criterion for that parameter. For each sampling event a percent reduction was calculated, if necessary, to meet water-quality criteria. A second simulation that multiplied the percent reduction times the sampled value was run to ensure that criteria were met 99% of the time. The mean value from this data set represents the long-term average concentration that needs to be met to achieve water-quality standards.

Outfall 006 discharges to a tributary of Peters Creek upstream of sample point PC5. The TMDL for sampling point PC5 consists of a load allocation to all of the area upstream of this point. The load allocation for this tributary of Peters Creek was computed using water-quality sample data collected at point PC5. The average flow, measured at the sampling point PC5 (3.096 MGD), is used for these computations. Sample data at point PC5 shows pH ranging between 7.25 and 8.17;

pH not will be addressed because water quality standards are being met. Table 4 shows the measured and allowable concentrations and loads at PC5. Table 5 shows the load reductions necessary to meet water quality standards at PC5. Based on the data, Aluminum is the only parameter to have limitations from the TMDL, as the stream has assimilative capacity for all of the other parameters.

**Table 4. PC5 TMDL Waste Allocation**

| Parameters | Measured | | Allowable | |
|---|---|---|---|---|
| | Concentration | Load | Concentration | Load |
| Aluminum | 1.21 | 31.13 | 0.43 | 11.21 |
| Iron | 0.78 | 20.12 | NA | NA |
| Manganese | 0.52 | 13.52 | NA | NA |
| Acidity | -97.50 | -2515.51 | NA | NA |
| Alkalinity | 135.43 | 3496.76 | NA | NA |

**Table 5. PC5 Aluminum Load Reduction Requirement**

| | |
|---|---|
| **Existing Load (lbs/day)** | 31.13 |
| **Allowable Load (lbs/day)** | 11.21 |
| **Load Reduction (lbs/day)** | 19.92 |
| **% Reduction required** | 64% |

The TMDL imposes an allowable concentration more stringent than the water quality criterion for Aluminum. When calculating effluent limits for parameters where there is no available assimilative capacity in the surface water, the numeric value of the most stringent applicable water quality criterion is applied; therefore, the water quality criterion for aluminum will be imposed in order to ensure compliance with the TMDL.

The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL. Accordingly, TMDL aluminum limits are applicable at Outfall 006 and aluminum limits are shown in Table 6. However, a TMDL limitation is considered a water quality based effluent limitation and as discussed above in this Fact Sheet, new WQBELs are subject to a compliance schedule to allow the permittee to get into compliance with the new limitation. This outfall is planned to be relocated during this permit cycle; therefore, the new WQBEL and compliance schedule will not be imposed at the current outfall discharge point.

**Table 6 – TMDL Limits for Outfall 006**

| Parameter | TMDL Limits | | Units |
|---|---|---|---|
| | Average Monthly | Daily Maximum | |
| Aluminum, total | 0.75 | 0.75 | mg/L |

**Anti-Backsliding**

Previous limits from PA002895 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 7.

**Table 7: Current Permit (PA0002895) Limits for Outfall 006**

| Parameter | Daily Minimum (mg/L) | Average Monthly (mg/L) | Maximum Daily (mg/L) | Frequency |
|---|---|---|---|---|
| Flow (MGD) | | Monitor | Monitor | 2/Month |
| Total Suspended Solids (TSS) | | 30.0 | 100.0 | 2/Month |
| Oil & Grease | | 15.0 | 20.0 | 2/Month |
| Iron, Total | | 3.5 | 7.0 | 2/Month |
| Boron | | 10.0 | 20.0 | 2/Month |
| Aluminum | | 2.0 | 4.0 | 2/Month |
| pH (S.U.) | 6.0 | | 9.0 | 2/Month |

**Interim Effluent Limitations**

The interim effluent limitations for the current location of Outfall 006 are displayed in Table 8 below, they are the most stringent values from the above effluent limitation development. Instantaneous maximum limitations are typically imposed to gauge compliance with composite sampling limits using grab samples or for departmental sampling compliance purposes. Since the sampling type imposed at Mingo is grab sampling the instantaneous maximum limitation for oil & grease is not needed and has been removed. These limits will be imposed until the outfall has been relocated, after which, final effluent limitations will take effect.

**Table 8: Interim Effluent Limits for Outfall 006**

| Parameter | Instantaneous Minimum (mg/L) | Average Monthly (mg/L) | Maximum Daily (mg/L) | Instantaneous Maximum (mg/L) | Frequency | Sample Type |
|---|---|---|---|---|---|---|
| Flow (MGD) | | Monitor | Monitor | | 2/Month | Measured |
| Total Suspended Solids (TSS) | | 30.0 | 100.0 | | 2/Month | Grab |
| Oil & Grease | | 15.0 | 20.0 | | 2/Month | Grab |
| Aluminum | | 2.0 | 4.0 | | 2/Month | Grab |
| Iron, Total | | 3.5 | 7.0 | | 2/Month | Grab |
| Boron | | 10.0 | 20.0 | | 2/Month | Grab |
| Mercury, Total | | Monitor | Monitor | | 2/Month | Grab |
| Selenium, Total | | Monitor | Monitor | | 2/Month | Grab |
| pH (S.U.) | 6.0 | | | 9.0 | 2/Month | Grab |

**Development of Effluent Limitations**

**Outfall No.** 006 Proposed Location **Design Flow (MGD)** 0.0871
**Latitude** 40º 14' 45.09" **Longitude** -80º 01' 8.30"
**Wastewater Description:** Leachate, Seeps, Springs and Stormwater from Closed Coal Ash Landfill

**Technology-Based Limitations**

Federal Effluent Limitation Guidelines (ELGs)

The site is subject to Federal Effluent Limitation Guidelines (ELGs) pursuant to 40 CFR 423.12(b) (11) (Steam Electric Power Generating Point Source Category) and must achieve the limits shown in Table 9 below. Based on the type of discharge (stormwater induced) and 40 CFR 423.12(b) (12), the limitations will be expressed as concentration limitation instead of mass-based limitations.

**Table 9. Federal ELGs**

| Parameter | Monthly Avg. (mg/L) | Maximum Daily (mg/L) |
|---|---|---|
| TSS | 30 | 100 |
| Oil and Grease | 15 | 20 |

Total Dissolved Solids Considerations

Outfall 006 is also subject to Chapter 95.10 Effluent Standards for total dissolved solids (TDS). The provisions of Chapter 95.10 were adopted on August 20, 2010 and became effective August 21, 2010. Chapter 95.10 of the Department's regulations establishes the effluent standards applicable to new and expanding discharges of TDS. Under the provisions of this regulation, dischargers that are subject to the requirements of 95.10 must be identified; discharges that are exempt from any treatment requirements under this chapter must be identified; the existing mass loadings of TDS that are exempt from the treatment requirements must be identified and quantified; and discharges of new and expanding mass loadings of TDS must be evaluated.

Integral to the implementation of Chapter 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010 are exempt. Generally, no permit actions are required until an NPDES permit is issued, renewed, or amended. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or there is a change in the waste stream. If there are existing mass or production based TDS effluent limits, then these are used as the basis for the existing mass loading.

The discharge from Outfall 006 was authorized, and existed prior to August 21, 2010. Therefore, the discharge is considered to be an existing, authorized mass loading of TDS and is exempt from any treatment requirements.

The maximum mass loading contained in the NPDES permit application for Outfall 006 is 859 $^{lb}/_{day}$ (1,225 $_{mg/L}$). The TDS discharge is less than 2,000 $^{lb}/_{day}$ measured as an average daily discharge, over the course of a calendar year, otherwise known as an annual average daily load. Effluent limitations for TDS based on 95.10 are not proposed.

Regulatory Effluent Standards and Monitoring Requirements

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

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 10.

**Table 10: Regulatory Effluent Standards and Monitoring Requirements for Outfall 006**

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

**Water Quality-Based Limitations**

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential and Developing WQBELs

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

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

4. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. 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 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]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (see Attachment D).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

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

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

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

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 collected on a spreadsheet titled "Toxics Screening Analysis" and is displayed in Attachment D.

PENTOXSD Water Quality Modeling Program

PENTOXSD Version 2.0 for Windows is a single discharge, mass-balance water quality modeling program 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 and discharge flow rate are entered into PENTOXSD to establish Mingo-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. Pollutants are then selected for analysis based on those present or likely to be present in a discharge at levels that may cause, have the reasonable potential to cause, or contribute to excursions above state water quality standards (i.e., a reasonable potential analysis). Discharge concentrations for the selected pollutants are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). PENTOXSD then evaluates each pollutant 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, PENTOXSD recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 006

**Table 11: PENTOXSD Inputs**

| Parameter | Value |
|---|---|
| River Mile Index (mi.) | 14.33 |
| Discharge Flow (MGD) | 0.003 |
| **Basin/Stream Characteristics** | |
| **Parameter** | **Value** |
| Area in Square Miles ($mi^2$) | 7.27 |
| $Q_{7-10}$ (cfs) | 0.0927 |
| Low-flow yield ($cfs/mi^2$) | 0.0128 |
| Elevation (ft) | 960 |
| Slope (ft/ft) | 0.0001 |

Discharges from Outfall 006 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are used for toxics screening as described above. The PENTOXSD model is run with the discharge and receiving stream characteristics shown in Table 11. The pollutants selected for analysis include those identified as candidates for modeling by the Toxics Screening Analysis spreadsheet (in accordance with Step 2 of the Toxics Screening Analysis procedure discussed above). Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. Some Potable Water Supply parameters (Total Dissolved Solids, Sulfate and Total Phenols) were candidates for PENTOXSD Modeling however they were not run due to the discharge being over 61 miles downstream from the closest Potable Water Supply intake.

The WQBELs calculated using PENTOXSD are compared to the maximum reported effluent concentrations as described in the Toxics Screening Analysis section above to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of the Toxics Screening Analysis, monitoring requirements for Boron is required at Outfall 006, which is displayed in Table 12 below. Output from the PENTOXSD model runs are included in Attachment E.

**Table 12. WQBELs from PENTOXSD and Toxics Screening Analysis for Outfall 006**

| Parameter | Monthly average | Daily maximum |
|---|---|---|
| Boron, total (mg/L) | Monitor | Monitor |

Total Dissolved Solids, Chloride, Bromide, and Sulfate

TDS and its major constituents including chloride, bromide and sulfate have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to the formation of disinfection byproducts at increased levels in public water systems. In addition, the Environmental Quality Board has directed DEP to collect additional data related to sulfate and chloride. Furthermore, EPA has expressed concern related to bromide and the importance of monitoring all point sources for bromide when it may be present.

Based on the concerns identified above and under the authority of 25 Pa. Code § 92a.61, DEP has determined that it should implement increased monitoring in NPDES permits for TDS, chloride, bromide and sulfate. The new/increased monitoring is prompted for discharges that exceed the following thresholds:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lb/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, chloride, bromide and sulfate. WPP reported a TDS concentration of 1,225 mg/L but has a discharge flow of 0.0003 MGD; therefore, monitoring for TDS per 25 PA Code Chapter 92a.61 will not be imposed.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. WPP reported a Bromide concentration of 0.276 mg/L; therefore, monitoring for bromide per 25 PA Code Chapter 92a.61 will not be imposed.

Total Maximum Daily Loads

Wastewater discharges from Mingo are located within the Peters Creek Watershed for which the Department has developed a TMDL. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's; Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can

assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). The TMDL was developed for segments in the Peters Creek Watershed. These were done to address the impairments noted on the 1996 Pennsylvania Section 303(d) list of impaired waters, required under the Clean Water act, and covers one segment on that list and additional segments on later list/reports. Peters Creek was listed as impaired for metals. All impairments resulted from drainage from abandoned coalmines. The TMDL addresses the three-primary metal associated with abandoned mine drainage (iron, manganese, aluminum) and pH. Stream data is used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity).

One of the major components of a TMDL is the establishment of an instream numeric endpoint, which is used to evaluate the attainment of applicable water quality. An instream numeric endpoint, therefore, represents the water quality goal that is to be achieved by implementing the load reduction specified in the TMDL. The endpoint allows for a comparison between observed instream conditions and conditions that are expected to restore designated uses. The endpoint is based on either narrative or numeric criteria available in water quality standards. Because the pollution sources in the watershed are nonpoint sources, the TMDLs' component makeup will be load allocations (LAs) with waste load allocations (WLAs) for permitted discharges. All allocations will be specified as long-term average daily concentrations. These long-term average concentrations are expected to meet water-quality criteria 99% of the time as required in PA Title 25 Chapter 96.3(c).

The TMDL for Peters Creek developed load allocations to four sampling sites on Peters Creek (PC5, PC4, PC3 and PCs, six sites on unnamed tributaries to Peters Creek (PCTR1-6), one site on Lewis Run (LW1), one site on Lick Run (LR1), and one site on Piney Fork (PF1). Sample data sets were collected in 2007 and 2008. An allowable long-term average in-stream concentration was determined at each sample point for metals and acidity. The analysis is designed to produce an average value that, when met, will be protective of the water-quality criterion for that parameter 99% of the time. An analysis was performed using Monte Carlo simulation to determine the necessary long-term average concentration needed to attain water-quality criteria 99% of the time. The simulation was run assuming the data set was log normally distributed. Using the mean and standard deviation of the data set, 5000 iterations of sampling were completed, and compared against the water-quality criterion for that parameter. For each sampling event a percent reduction was calculated, if necessary, to meet water-quality criteria. A second simulation that multiplied the percent reduction times the sampled value was run to ensure that criteria were met 99% of the time. The mean value from this data set represents the long-term average concentration that needs to be met to achieve water-quality standards.

Outfall 006 discharges to Peters Creek, upstream of sample point PC5. The TMDL for sampling point PC5 consists of a load allocation to all of the area upstream of this point. The load allocation for this segment of Peters Creek was computed using water-quality sample data collected at point PC5. The average flow, measured at the sampling point PC5 (3.096 MGD), is used for these computations. Sample data at point PC5 shows pH ranging between 7.25 and 8.17; pH not will be addressed because water quality standards are being met. Table 13 shows the measured and allowable concentrations and loads at PC5. Table 14 shows the load reductions necessary to meet water quality standards at PC5. Based on the data, Aluminum is the only parameter to have limitations from the TMDL, as the stream has assimilative capacity for all of the other parameters.

**Table 13. PC5 TMDL Waste Allocation**

| | Measured | | Allowable | |
|---|---|---|---|---|
| **Parameters** | **Concentration (mg/L)** | **Load (lbs/day)** | **Concentration (mg/L)** | **Load (lbs/day)** |
| Aluminum | 1.21 | 31.13 | 0.43 | 11.21 |
| Iron | 0.78 | 20.12 | NA | NA |
| Manganese | 0.52 | 13.52 | NA | NA |
| Acidity | -97.50 | -2515.51 | NA | NA |
| Alkalinity | 135.43 | 3496.76 | NA | NA |

**Table 14. PC5 Aluminum Load Reduction Requirement**

| | |
|---|---|
| **Existing Load (lbs/day)** | 31.13 |
| **Allowable Load (lbs/day)** | 11.21 |
| **Load Reduction (lbs/day)** | 19.92 |
| **% Reduction required** | 64% |

The TMDL imposes an allowable concentration more stringent than the water quality criterion for Aluminum. When calculating the effluent limits for parameters where there is no available assimilative capacity in the surface water, the numeric value of the most stringent applicable water quality criterion is applied, therefore the water quality criterion for aluminum will be imposed in order to ensure compliance with the TMDL.

The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL. Accordingly, TMDL aluminum limits are proposed for Outfall 006. The proposed aluminum limits are shown in Table 15.

**Table 15: TMDL Limits for Outfall 006**

| Parameter | TMDL Limits | | Units |
|---|---|---|---|
| | Average Monthly | Daily Maximum | |
| Aluminum, total | 0.75 | 0.75 | mg/L |

**Anti-Backsliding**

Previous limits from PA002895 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 16. However, because the outfall changed location, water quality-based limits from the current permit will not be applied, as the discharge will be relocated to a different waterway. The only parameters from the current permit based on water quality are Boron and Aluminum. The current Boron limitation has been removed from the relocated outfall and replaced with monitoring based on the water quality analyses of the new discharge location. The current aluminum limitation has been removed from the relocated outfall but has been replaced with a more stringent limitation because of the TMDL.

**Table 16: Current Permit (PA0002895) Limits for Outfall 006**

| Parameter | Daily Minimum (mg/L) | Average Monthly (mg/L) | Maximum Daily (mg/L) | Frequency |
|---|---|---|---|---|
| Flow (MGD) | | Monitor | Monitor | 2/Month |
| Total Suspended Solids (TSS) | | 30.0 | 100.0 | 2/Month |
| Oil & Grease | | 15.0 | 20.0 | 2/Month |
| Iron, Total | | 3.5 | 7.0 | 2/Month |
| Boron | | 10.0 | 20.0 | 2/Month |
| Aluminum | | 2.0 | 4.0 | 2/Month |
| pH (S.U.) | 6.0 | | 9.0 | 2/Month |

**Final effluent limitations**

The final effluent limitations for Outfall 006 are displayed in Table 17 below. The limitations are the most stringent values from the above effluent limitation development. The instantaneous maximum limitation for oil and grease was removed because the required sample type is grab and not composite sampling. Instantaneous maximum limitations are typically imposed to gauge compliance with composite sampling limits using grab samples or for Departmental sampling compliance purposes. Since the sampling type imposed at Mingo is grab sampling the instantaneous maximum limitation for oil & grease is not needed and has been removed. These limits will be in effect after completion pipeline construction to relocate the Outfall 006 to Peters Creek or within 59 months of the permit effective date, whichever comes first.

**Table 17: Final Effluent Limits for Outfall 006**

| Parameter | Instantaneous Minimum (mg/L) | Average Monthly (mg/L) | Maximum Daily (mg/L) | Instantaneous Maximum (mg/L) | Frequency | Sample Type |
|---|---|---|---|---|---|---|
| Flow (MGD) | | Monitor | Monitor | | 2/Month | Measured |
| Total Suspended Solids (TSS) | | 30.0 | 100.0 | | 2/Month | Grab |
| Oil & Grease | | 15.0 | 20.0 | | 2/Month | Grab |
| Aluminum | | 0.75 | 0.75 | | 2/Month | Grab |
| Iron, Total | | 3.5 | 7.0 | | 2/Month | Grab |
| Boron | | Monitor | Monitor | | 2/Month | Grab |
| pH (S.U.) | 6.0 | | | 9.0 | 2/Month | Grab |

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

## Attachments

Attachment A: USGS Stream Stats Data for Current Outfall 006 Location

Attachment B: USGS Stream Stats Data for Proposed Outfall 006 Location

Attachment C: Toxics Screening Analysis Results for Current Outfall 006 Location

Attachment D: Toxics Screening Analysis Results for Proposed Outfall 006 Location

Attachment E: PENTOXSD Modeling Results for Proposed Outfall 006 Location

Attachment F: Peters Creek Watershed TMDL – Stream Segment PC5 Maps and Load Allocations

Attachment G: Federal Effluent Limitation Guidelines in 40 CFR § 423.12

## Attachment A:

## USGS Stream Stats Data for Current Outfall 006 Location

# Current Outfall 006 Location StreamStats Report

| | |
|---|---|
| **Region ID:** | PA |
| **Workspace ID:** | PA20180615184337779000 |
| **Clicked Point (Latitude, Longitude):** | 40.24313, -80.02105 |
| **Time:** | 2018-06-15 14:43:52 -0400 |


Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 0.0917 | square miles |
| ELEV | Mean Basin Elevation | 1220.9 | feet |

Low-Flow Statistics Parameters [Low Flow Region 4]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 0.0917 | square miles | 2.26 | 1400 |
| ELEV | Mean Basin Elevation | 1220.9 | 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 | 0.00187 | ft^3/s |
| 30 Day 2 Year Low Flow | 0.00404 | ft^3/s |
| 7 Day 10 Year Low Flow | 0.000435 | ft^3/s |
| 30 Day 10 Year Low Flow | 0.00112 | ft^3/s |
| 90 Day 10 Year Low Flow | 0.00258 | ft^3/s |

*Low-Flow Statistics Citations*

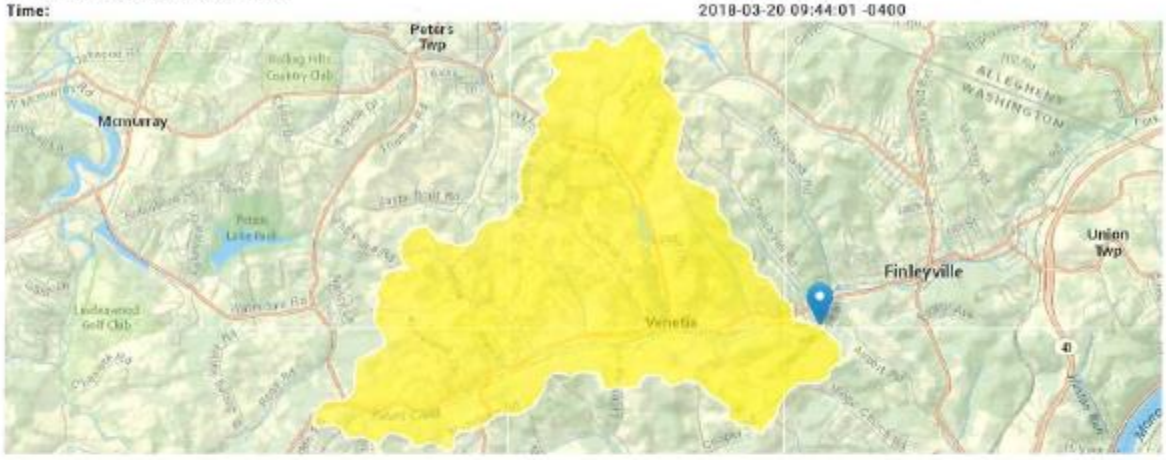
**Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)**

## Attachment B:

## USGS Stream Stats Data for Proposed Outfall 006 Location

# Peters Creek Outfall 006 StreamStats Report

| | |
|---|---|
| **Region ID:** | PA |
| **Workspace ID:** | PA20180320134351996000 |
| **Clicked Point (Latitude, Longitude):** | 40.24630, -80.01894 |
| **Time:** | 2018-03-20 09:44:01 -0400 |




The South Carolina StreamStats application is testing LIDAR-derived data and streams for delineation. This is a beta version and QA/QC is incomplete. It may calculate basin characteristics and flow statistics incorrectly. Please verify the drainage areas and flow stats carefully. Use at your own risk

Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 7.27 | square miles |
| ELEV | Mean Basin Elevation | 1152.1 | feet |

Low-Flow Statistics Parameters (Low Flow Region 4)

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 7.27 | square miles | 2.26 | 1400 |
| ELEV | Mean Basin Elevation | 1152.1 | feet | 1050 | 2580 |

Low-Flow Statistics Flow Report (Low Flow Region 4)

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

| Statistic | Value | Unit | SE | SEp |
|---|---|---|---|---|
| 7 Day 2 Year Low Flow | 0.26 | ft^3/s | 43 | 43 |
| 30 Day 2 Year Low Flow | 0.456 | ft^3/s | 38 | 38 |
| 7 Day 10 Year Low Flow | 0.0927 | ft^3/s | 66 | 66 |
| 30 Day 10 Year Low Flow | 0.17 | ft^3/s | 54 | 54 |
| 90 Day 10 Year Low Flow | 0.314 | ft^3/s | 41 | 41 |

*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/)**

## Attachment C:

## Toxics Screening Analysis Results for Current Outfall 006 Location

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.4

Facility: **Mingo Landfill** NPDES Permit No.: **PA0255343** Outfall: **C. 006**
Analysis Hardness (mg/L): **100** Discharge Flow (MGD): **0.003** Analysis pH (SU): **7**

| Parameter | | Maximum Concentration in Application or DMRs (µg/L) | Most Stringent Criterion (µg/L) | Candidate for PENTOXSD Modeling? | Most Stringent WQBEL (µg/L) | Screening Recommendation |
|---|---|---|---|---|---|---|
| **Pollutant Group 1** | | | | | | |
| Total Dissolved Solids | | 1225000 | 500000 | Yes | | |
| Chloride | < | 2310 | 250000 | No | | |
| Bromide | | 276 | N/A | No | | |
| Sulfate | | 606000 | 250000 | Yes | | |
| Fluoride | | 145 | 2000 | No | | |
| **Pollutant Group 2 – Metals** | | | | | | |
| Total Aluminum | | 57.8 | 750 | No | | |
| Total Antimony | < | 0.9 | 5.6 | No (Value < QL) | | |
| Total Arsenic | | 1 | 10 | No | | |
| Total Barium | | 36.3 | 2400 | No | | |
| Total Beryllium | < | 1 | N/A | No (Value < QL) | | |
| Total Boron | | 13800 | 1600 | Yes | | |
| Total Cadmium | < | 0.2 | 0.271 | No (Value < QL) | | |
| Total Chromium (III) | | 18 | N/A | No | | |
| Hexavalent Chromium | < | 10 | 10.4 | No | | |
| Total Cobalt | < | 1 | 19 | No (Value < QL) | | |
| Total Copper | < | 4 | 9.3 | No (Value < QL) | | |
| Total Cyanide | < | 10 | N/A | No (Value < QL) | | |
| Total Iron | | 207 | 1500 | No | | |
| Dissolved Iron | | 55.8 | 300 | No | | |
| Total Lead | < | 1 | 3.2 | No (Value < QL) | | |
| Total Manganese | | 86.2 | 1000 | No | | |
| Total Mercury | | 0.16 | 0.05 | Yes | | |
| Total Molybdenum | | 138.4 | N/A | No | | |
| Total Nickel | < | 4 | 52.2 | No (Value < QL) | | |
| Total Phenols (Phenolics) | < | 10 | 5 | Yes | | |
| Total Selenium | | 26 | 5.0 | Yes | | |
| Total Silver | < | 0.4 | 3.8 | No (Value < QL) | | |
| Total Thallium | < | 0.9 | 0.24 | No (Value < QL) | | |
| Total Zinc | | 5 | 119.8 | No | | |

## Attachment D:

## Toxics Screening Analysis Results for Proposed Outfall 006 Location

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.4

Facility: **Mingo Landfill** NPDES Permit No.: **PA0255343** Outfall: **P. 006**
Analysis Hardness (mg/L): **100** Discharge Flow (MGD): **0.003** Analysis pH (SU): **7**

| Parameter | | Maximum Concentration in Application or DMRs (µg/L) | Most Stringent Criterion (µg/L) | Candidate for PENTOXSD Modeling? | Most Stringent WQBEL (µg/L) | Screening Recommendation |
|---|---|---|---|---|---|---|
| **Pollutant Group 1** | | | | | | |
| Total Dissolved Solids | | 1225000 | 500000 | Yes | | |
| Chloride | < | 2310 | 250000 | No | | |
| Bromide | | 276 | N/A | No | | |
| Sulfate | | 606000 | 250000 | Yes | | |
| Fluoride | | 145 | 2000 | No | | |
| **Pollutant Group 2 – Metals** | | | | | | |
| Total Aluminum | | 57.8 | 750 | No | | |
| Total Antimony | < | 0.9 | 5.6 | No (Value < QL) | | |
| Total Arsenic | | 1 | 10 | No | | |
| Total Barium | | 36.3 | 2400 | No | | |
| Total Beryllium | < | 1 | N/A | No (Value < QL) | | |
| Total Boron | | 13800 | 1600 | Yes | 33558.63 | Monitor |
| Total Cadmium | < | 0.2 | 0.271 | No (Value < QL) | | |
| Total Chromium (III) | | 18 | N/A | No | | |
| Hexavalent Chromium | < | 10 | 10.4 | No | | |
| Total Cobalt | < | 1 | 19 | No (Value < QL) | | |
| Total Copper | < | 4 | 9.3 | No (Value < QL) | | |
| Total Cyanide | < | 10 | N/A | No (Value < QL) | | |
| Total Iron | | 207 | 1500 | No | | |
| Dissolved Iron | | 55.8 | 300 | No | | |
| Total Lead | < | 1 | 3.2 | No (Value < QL) | | |
| Total Manganese | | 86.2 | 1000 | No | | |
| Total Mercury | | 0.16 | 0.05 | Yes | 1.049 | No Limits/Monitoring |
| Total Molybdenum | | 138.4 | N/A | No | | |
| Total Nickel | < | 4 | 52.2 | No (Value < QL) | | |
| Total Phenols (Phenolics) | < | 10 | 5 | Yes | | |
| Total Selenium | | 26 | 5.0 | Yes | 104.643 | No Limits/Monitoring |
| Total Silver | < | 0.4 | 3.8 | No (Value < QL) | | |
| Total Thallium | < | 0.9 | 0.24 | No (Value < QL) | | |
| Total Zinc | | 5 | 119.8 | No | | |

## Attachment E:

## PENTOXSD Modeling Results for Outfall 006

## PENTOXSD

### Modeling Input Data

| Stream Code | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope | PWS With (mgd) | Apply FC |
|---|---|---|---|---|---|---|
| 39425 | 14.33 | 960.00 | 7.27 | 0.00010 | 0.00 | ☑ |

**Stream Data**

| | LFY | Trib Flow | Stream Flow | WD Ratio | Rch Width | Rch Depth | Rch Velocity | Rch Trav Time | Tributary Hard | Tributary pH | Stream Hard | Stream pH | Analysis Hard | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (cfsm) | (cfs) | (cfs) | | (ft) | (ft) | (fps) | (days) | (mg/L) | | (mg/L) | | (mg/L) | |
| Q7-10 | 0.1 | 0 | 0.0927 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 0 | 0 | 0 | 0 |
| Qh | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 0 | 0 | 0 | 0 |

**Discharge Data**

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | AFC PMF | CFC PMF | THH PMF | CRL PMF | Disc Hard (mg/L) | Disc pH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall 006 | PA0255343 | 0.003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 |

**Parameter Data**

| Parameter Name | Disc Conc (µg/L) | Trib Conc (µg/L) | Disc Daily CV | Disc Hourly CV | Steam Conc (µg/L) | Stream CV | Fate Coef | FOS | Crit Mod | Max Disc Conc (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| BORON | 100000 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| MERCURY | 100000 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| SELENIUM | 100000 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |

| Stream Code | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope | PWS With (mgd) | Apply FC |
|---|---|---|---|---|---|---|
| 39425 | 13.33 | 940.00 | 9.96 | 0.00010 | 0.00 | ☑ |

**Stream Data**

| | LFY | Trib Flow | Stream Flow | WD Ratio | Rch Width | Rch Depth | Rch Velocity | Rch Trav Time | Tributary Hard | Tributary pH | Stream Hard | Stream pH | Analysis Hard | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (cfsm) | (cfs) | (cfs) | | (ft) | (ft) | (fps) | (days) | (mg/L) | | (mg/L) | | (mg/L) | |
| Q7-10 | 0.1 | 0 | 0.136 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 0 | 0 | 0 | 0 |
| Qh | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 0 | 0 | 0 | 0 |

**Discharge Data**

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | AFC PMF | CFC PMF | THH PMF | CRL PMF | Disc Hard (mg/L) | Disc pH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 |

**Parameter Data**

| Parameter Name | Disc Conc (µg/L) | Trib Conc (µg/L) | Disc Daily CV | Disc Hourly CV | Steam Conc (µg/L) | Stream CV | Fate Coef | FOS | Crit Mod | Max Disc Conc (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| BORON | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| MERCURY | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| SELENIUM | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |

## PENTOXSD Analysis Results

### Hydrodynamics

| SWP Basin | Stream Code: | Stream Name: |
|---|---|---|
| 19C | 39425 | PETERS CREEK |

| RMI | Stream Flow (cfs) | PWS With (cfs) | Net Stream Flow (cfs) | Disc Analysis Flow (cfs) | Reach Slope | Depth (ft) | Width (ft) | WD Ratio | Velocity (fps) | Reach Trav Time (days) | CMT (min) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10 Hydrodynamics** | | | | | | | | | | | |
| 14.330 | 0.0927 | 0 | 0.0927 | 0.00464 | 0.0001 | 0.4217 | 8.6686 | 20.554 | 0.0266 | 2.2952 | 34.105 |
| 13.330 | 0.136 | 0 | 0.136 | NA | 0 | 0 | 0 | 0 | 0 | 0 | NA |
| **Qh Hydrodynamics** | | | | | | | | | | | |
| 14.330 | 0.9294 | 0 | 0.9294 | 0.00464 | 0.0001 | 1.1407 | 8.6686 | 7.5996 | 0.0945 | 0.6469 | 8.37 |
| 13.330 | 1.2993 | 0 | 1.2993 | NA | 0 | 0 | 0 | 0 | 0 | 0 | NA |

## PENTOXSD Analysis Results

### Wasteload Allocations

| RMI | Name | Permit Number |
|---|---|---|
| 14.33 | Outfall 006 | PA0255343 |

**AFC**

**Q7-10:** **CCT (min)** 15 **PMF** 0.663 **Analysis pH** 7 **Analysis Hardness** 100

| Parameter | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| MERCURY | 0 | 0 | 0 | 0 | 1.4 | 1.647 | 23.465 |
| | Dissolved WQC. Chemical translator of 0.85 applied. | | | | | | |
| SELENIUM | 0 | 0 | 0 | 0 | NA | NA | NA |
| BORON | 0 | 0 | 0 | 0 | 8100 | 8100 | 115396.2 |

**CFC**

**Q7-10:** **CCT (min)** 34.105 **PMF** 1 **Analysis pH** 7 **Analysis Hardness** 100

| Parameter | Stream Conc. (µg/L) | Stream CV | Trib Conc. (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| MERCURY | 0 | 0 | 0 | 0 | 0.77 | 0.906 | 19 |
| | Dissolved WQC. Chemical translator of 0.85 applied. | | | | | | |
| SELENIUM | 0 | 0 | 0 | 0 | 4.6 | 4.989 | 104.643 |
| | Dissolved WQC. Chemical translator of 0.922 applied. | | | | | | |
| BORON | 0 | 0 | 0 | 0 | 1600 | 1600 | 33558.63 |

**THH**

**Q7-10:** **CCT (min)** 34.105 **PMF** 1 **Analysis pH** NA **Analysis Hardness** NA

| Parameter | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| MERCURY | 0 | 0 | 0 | 0 | 0.05 | 0.05 | 1.049 |
| SELENIUM | 0 | 0 | 0 | 0 | NA | NA | NA |
| BORON | 0 | 0 | 0 | 0 | 3100 | 3100 | 65019.84 |

**CRL**

**Qh:** **CCT (min)** 8.37 **PMF** 1

| Parameter | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| MERCURY | 0 | 0 | 0 | 0 | NA | NA | NA |
| SELENIUM | 0 | 0 | 0 | 0 | NA | NA | NA |

## PENTOXSD Analysis Results

### Wasteload Allocations

| RMI | Name | Permit Number |
|---|---|---|
| 14.33 | Outfall 006 | PA0255343 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | BORON | 0 | 0 | 0 | 0 | NA | NA | NA |

**PENTOXSD Analysis Results**

**Recommended Effluent Limitations**

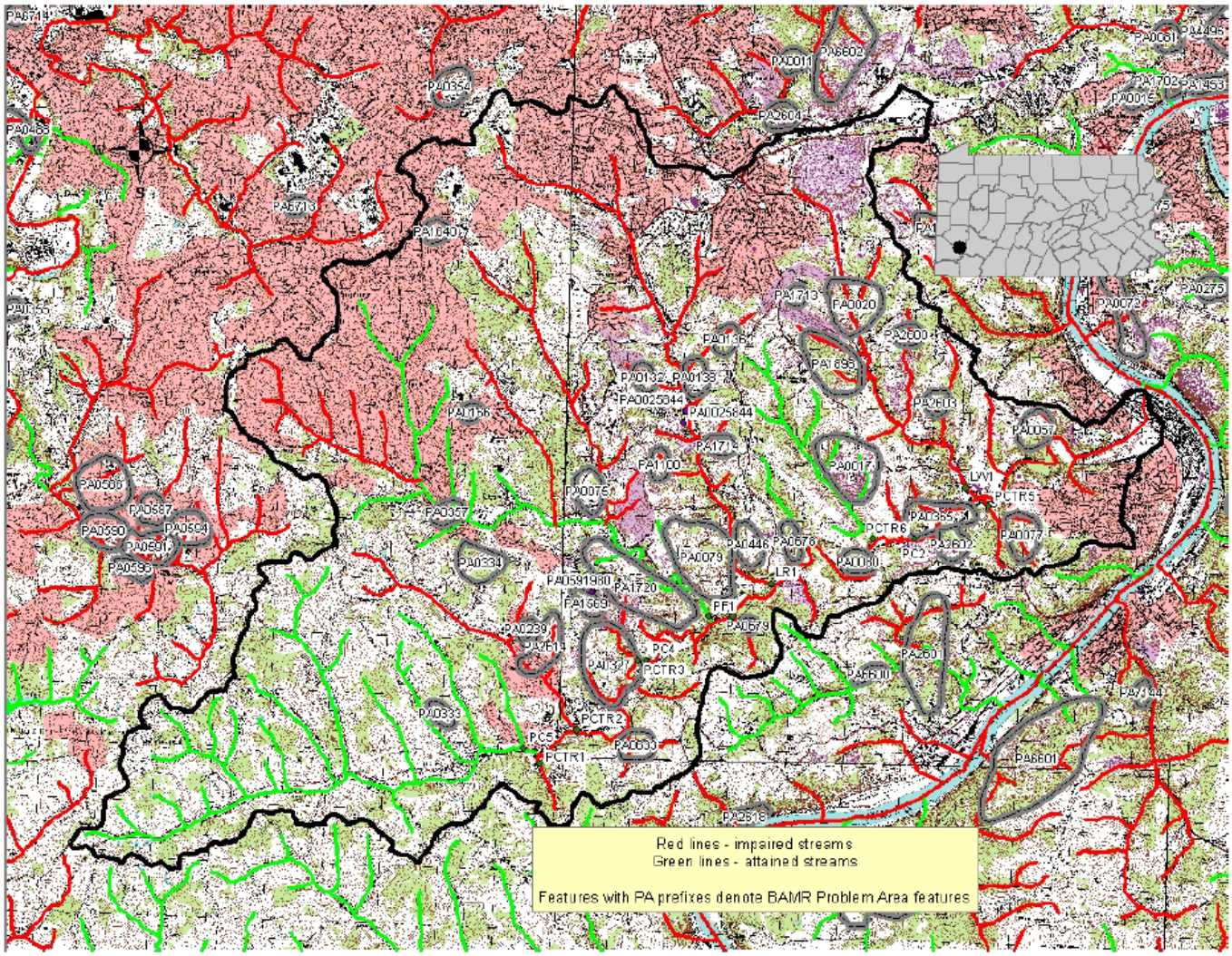
| SWP Basin | Stream Code: | Stream Name: |
|---|---|---|
| 19C | 39425 | PETERS CREEK |

| RMI | Name | Permit Number | Disc Flow (mgd) |
|---|---|---|---|
| 14.33 | Outfall 006 | PA0255343 | 0.0030 |

| Parameter | Effluent Limit (µg/L) | Governing Criterion | Max. Daily Limit (µg/L) | Most Stringent WQBEL (µg/L) | Most Stringent WQBEL Criterion |
|---|---|---|---|---|---|
| BORON | 33558.63 | CFC | 52356.85 | 33558.63 | CFC |
| MERCURY | 1.049 | THH | 1.636 | 1.049 | THH |
| SELENIUM | 104.643 | CFC | 163.26 | 104.643 | CFC |

## Attachment F:

## Peters Creek Watershed TMDL – Stream Segment PC5 Maps and Load Allocations


Red lines - impaired streams
Green lines - attained streams
Features with PA prefixes denote BAMR Problem Area features

*TMDL calculations – PC5 – Peters Creek upstream of bridge in Finleyville*

The TMDL for sampling point PC5 consists of a load allocation to all of the area upstream of this point shown in Attachment A. The load allocation for this segment of Peters Creek was computed using water-quality sample data collected at point PC5. The average flow, measured at the sampling point PC5 (3.096 MGD), is used for these computations.

Sample data at point PC5 shows pH ranging between 7.25 and 8.17; pH not will be addressed because water quality standards are being met. Table D1 shows the measured and allowable concentrations and loads at PC5. Table D2 shows the load reductions necessary to meet water quality standards at PC5.

| Table D1 | | Measured | | Allowable | |
|---|---|---|---|---|---|
| | | Concentration | Load | Concentration | Load |
| | | mg/L | lbs/day | mg/L | lbs/day |
| | Aluminum | 1.21 | 31.13 | 0.43 | 11.21 |
| | Iron | 0.78 | 20.12 | NA | NA |
| | Manganese | 0.52 | 13.52 | NA | NA |
| | Acidity | -97.50 | -2517.51 | NA | NA |
| | Alkalinity | 135.43 | 3496.76 | | |

| Table D2. Allocations PC5 | |
|---|---|
| PC5 | Al (Lbs/day) |
| Existing Load @ PC5 | 31.13 |
| Allowable Load @ PC5 | 11.21 |
| Load Reduction @ PC5 | 19.92 |
| % Reduction required @ PC5 | 64% |

## Attachment G:

## Federal Effluent Limitation Guidelines in 40 CFR § 423.12

**PART 423—STEAM ELECTRIC POWER GENERATING POINT SOURCE CATEGORY**

**§423.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

(a) In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, utilization of facilities, raw materials, manufacturing processes, non-water quality environmental impacts, control and treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES Permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The phrase "other such factors" appearing above may include significant cost differentials. In no event may a discharger's impact on receiving water quality be considered as a factor under this paragraph.

(b) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction by the application of the best practicable control technology currently available (BPT):

(11) The quantity of pollutants discharged in FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, or gasification wastewater shall not exceed the quantity determined by multiplying the flow of the applicable wastewater times the concentration listed in the following table:

| Pollutant or pollutant property | BPT Effluent limitations | |
|---|---|---|
| | Maximum for any 1 day (mg/l) | Average of daily values for 30 consecutive days shall not exceed (mg/l) |
| TSS | 100.0 | 30.0 |
| Oil and grease | 20.0 | 15.0 |

(12) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass-based limitations specified in paragraphs (b)(3) through (b)(7), and (b)(11), of this section. Concentration limitations shall be those concentrations specified in this section.