pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0063894**
Facility Type	**Industrial**	APS ID	**522262**
Major / Minor	**Minor**	Authorization ID	**1421065**

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

Applicant and Facility Information

Applicant Name	**Municipal Authority of the Borough of Minersville**	Facility Name	**Minersville Water Treatment Plant**
Applicant Address	2 East Sunbury Street	Facility Address	Water Dam Road
	Minersville, PA 17954-1719		Minersville, PA 17954
Applicant Contact	Melanie Spittler, Authority Manager	Facility Contact	Melanie Spittler
Applicant Phone	(570) 544-2200	Facility Phone	(570) 544-4462
Client ID	70633	Site ID	503327
SIC Code	4941	Municipality	Cass Township
SIC Description	Trans. & Utilities - Water Supply	County	Schuylkill
Date Application Received	December 19, 2022	EPA Waived?	Yes
Date Application Accepted	December 22, 2022	If No, Reason	-

Purpose of Application: Renewal of NPDES permit to discharge industrial wastewater.

Summary of Review

The applicant is requesting the renewal of their NPDES permit to discharge up to 0.18 MGD of filter backwash wastewater from the Minersville Water Treatment Plant (WTP) to Dyer Run, a Cold-Water Fishery (CWF) designated receiving stream in State Water Plan Basin 3-A (West Branch Schuylkill River). Per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than the designated use. The applicant is the public water supplier.

The stream is impaired for low pH due to Atmospheric Deposition and PCBs due to an unknown source. The stream is also part of the Upper Schuylkill River TMDL for metals associated with Acid Mine Drainage (AMD) and the Schuylkill River PCB TMDL.

The limits for Total Suspended Solids (TSS), Total Residual Chlorine (TRC), Total Aluminum, Total Iron, and Total Manganese are BPT technology-based limits from the “Technology-Based Control Requirements for Water Treatment Plant Wastes” (technical guidance document 362-2183-003). These limits have been carried over from the previous permit.

The same modification for pH has been made as it has been in previous permits. The minimum pH is adjusted to reflect the average background pH in the area. The influent pH reporting has been maintained in the permit. If the intake pH is less than 6.0, the minimum effluent pH limit shall be the intake pH to ensure that the receiving stream will not be significantly impacted.

The quarterly monitoring/reporting of Total Dissolved Solids (TDS) has also been carried over from the previous permit.

Pollutant sampling results submitted with the permit application were entered into the Toxic Management Spreadsheet (TMS). The TMS did not recommend stricter monitoring/reporting limitations.

Approve	Deny	Signatures	Date
X		/s/ Allison S. Zukosky / Project Manager	August 23, 2024
X		/s/ Amy M. Bellanca, P.E. / Acting Engineer Manager	8-26-24

Summary of Review

The Total Residual Chlorine (TRC) Calculation Spreadsheet did not recommend stricter limitations than the previous permit.

The previous NPDES Permit utilized USGS Stream Gage 01468500 - Schuylkill River at Landingville, PA. This stream gage is not extremely close to Outfall 001 and is located on the Schuylkill River, which is fairly larger than Dryer Run. Calculations for the Low Flow Yield (LFY) and Stream Flow were still obtained using the data from USGS Stream Gage 01468500. USGS StreamStats was also used to obtain a Q_{7-10} and calculate a LFY. The default Low Flow Yield (LFY) of 0.1 cfs/mi^2 was also used to calculate a flow. These three different modeling methods were compared. The drainage area at Outfall 001 is small for USGS StreamStats to estimate accurate low flow values. However, the StreamStats calculated data was the median values and therefore was used for WQM 7.0, TMS, and TRC Spreadsheet modeling. The RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats.

The Upper Schuylkill River TMDL is for metals associated with Acid Mine Drainage (AMD). The TMDL addresses the three primary metals associated with acid mine drainage (iron, manganese, aluminum) and pH. The TMDL assigns load allocations to mine drainage discharges. The TMDL has no bearing on this permit since it addresses only AMD discharges. The permit also already contains limitations for Total Aluminum, Total Iron, and Total Manganese.

The Schuylkill River PCB TMDL for PCBs was approved by the EPA on April 2, 2007. Discharge from potable WTPs are not expected to be a source of this contaminant and is not applicable to this discharge point source.

The existing permit expired on December 31, 2022 and the application for renewal was not received until December 19, 2022. An administrative extension letter was issued by the Department via email on December 22, 2022.

A Water Management System Inspection query indicated that on December 30, 2019 a Compliance Evaluation was performed.

There are currently three open violations for this client/facility that may need to be resolved before issuance of the final permit:

1. 01/11/2023 - Violation ID 981376 – Violation Code 92A.75(A) – NPDES - Failure to submit NPDES renewal application at least 180 days prior to expiration or later approved date.

2. 01/11/2023 - Violation ID 981377 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit.

3. 01/11/2023 - Violation ID 981378 – Violation Code 92A.41(A)12B – NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports.

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.	001	Design Flow (MGD)	0.18
Latitude	40º 43' 33.00"	Longitude	-76º 16' 12.36"
Quad Name	Minersville	Quad Code	1335
Wastewater Description:	IW Process Effluent without ELG		

Receiving Waters	Dyer Run (CWF)	Stream Code	2350
NHD Com ID	25982464	RMI	0.53
Drainage Area	4.75 mi^2	Yield (cfs/mi^2)	0.25
Q_{7-10} Flow (cfs)	1.21	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1,071.32	Slope (ft/ft)	-
Watershed No.	3-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final, Final	Name	Schuylkill River PCB TMDL Upper Schuylkill River TMDL

Nearest Downstream Public Water Supply Intake		The facility is the nearest Public Water Supply Intake	
PWS Waters	-	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	-

Compliance History

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024)

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	0.015	0.013	0.011	0.011	0.011	0.014	0.012	0.014	0.013	0.014	0.017	0.015
Flow (MGD) Daily Maximum	0.024	0.019	0.020	0.018	0.015	0.021	0.021	0.052	0.020	0.028	0.028	0.028
pH (S.U.) Effluent Net Minimum	0.01	0.05	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03
pH (S.U.) Influent Minimum	5.12	5.02	5.02	5.08	5.12	5.01	4.88	4.60	4.59	5.10	5.06	5.11
pH (S.U.) Minimum	5.14	5.09	5.15	5.16	5.14	4.92	4.92	5.03	5.00	5.21	5.16	5.19
pH (S.U.) Influent Maximum	5.22	5.19	5.19	5.22	5.26	5.45	5.46	5.28	5.37	5.40	5.19	5.27
pH (S.U.) Maximum	5.39	5.38	5.37	5.41	5.53	5.54	5.54	5.41	5.39	5.48	5.49	5.56
TRC (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TRC (mg/L) Instantaneous Maximum	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TSS (lbs/day) Average Monthly	1.1448	0.840	0.4451	0.802	0.6651	0.46704	0.675	0.5546	0.8457	0.6714	0.9074	0.1425
TSS (lbs/day) Daily Maximum	2.60208	2.059	1.5012	2.047	1.5012	4.3785	1.576	3.4694	2.1684	2.3352	2.5687	0.336
TSS (mg/L) Average Monthly	9.0	7.75	4.80	8.75	7.25	4.0	6.75	4.75	7.80	5.75	6.40	9.5
TSS (mg/L) Daily Maximum	13.0	13.0	9.0	13.0	12.0	25.0	9.0	8.0	13.0	10.0	11.0	12.0
Total Dissolved Solids (mg/L) Average Quarterly	64.0			26.0			46.0			34.0		
Total Aluminum (lbs/day) Average Monthly	0.157626	0.188	0.16311	0.161	0.1729	0.20456	0.172	0.1655	0.1596	0.1751	0.2209	0.0222

Total Aluminum (lbs/day) Daily Maximum	0.60248 16	0.347	0.34528	0.328	0.2427	0.3345	0.327	0.6592	0.3203	0.4904	0.4951	0.049
Total Aluminum (mg/L) Average Monthly	1.26	1.74	1.778	1.757	1.885	1.752	1.72	1.4175	1.472	1.50	1.558	1.48
Total Aluminum (mg/L) Daily Maximum	3.01	2.19	2.07	2.19	1.94	1.91	1.87	1.52	1.92	2.10	2.12	1.75
Total Iron (lbs/day) Average Monthly	0.04535	0.026	0.0147	0.015	0.01284	0.4645	0.026	0.0432	0.06765	0.0438	0.0465	0.00438 8
Total Iron (lbs/day) Daily Maximum	0.13211	0.074	0.0367	0.034	0.02001	1.8423	0.057	0.2819	0.1768	0.1074	0.1284	0.01092
Total Iron (mg/L) Average Monthly	0.3625	0.247	0.16	0.165	0.14	0.236	0.267	0.37	0.624	0.375	0.328	0.2925
Total Iron (mg/L) Daily Maximum	0.66	0.47	0.22	0.230	0.16	0.470	0.33	0.65	1.06	0.46	0.55	0.39
Total Manganese (lbs/day) Average Monthly	0.0084	0.006	0.00495	0.005	0.00489	0.0065	0.005	0.0085	0.00824	0.0076	0.0099	0.00098
Total Manganese (lbs/day) Daily Maximum	0.0180	0.011	0.01001	0.012	0.00751	0.01226	0.010	0.0347	0.0150	0.0164	0.0210	0.00196
Total Manganese (mg/L) Average Monthly	0.0675	0.060	0.054	0.062	0.0533	0.056	0.055	0.0725	0.076	0.065	0.07	0.065
Total Manganese (mg/L) Daily Maximum	0.09	0.070	0.06	0.08	0.06	0.07	0.06	0.08	0.09	0.07	0.09	0.07

Modeling Using USGS StreamStats:

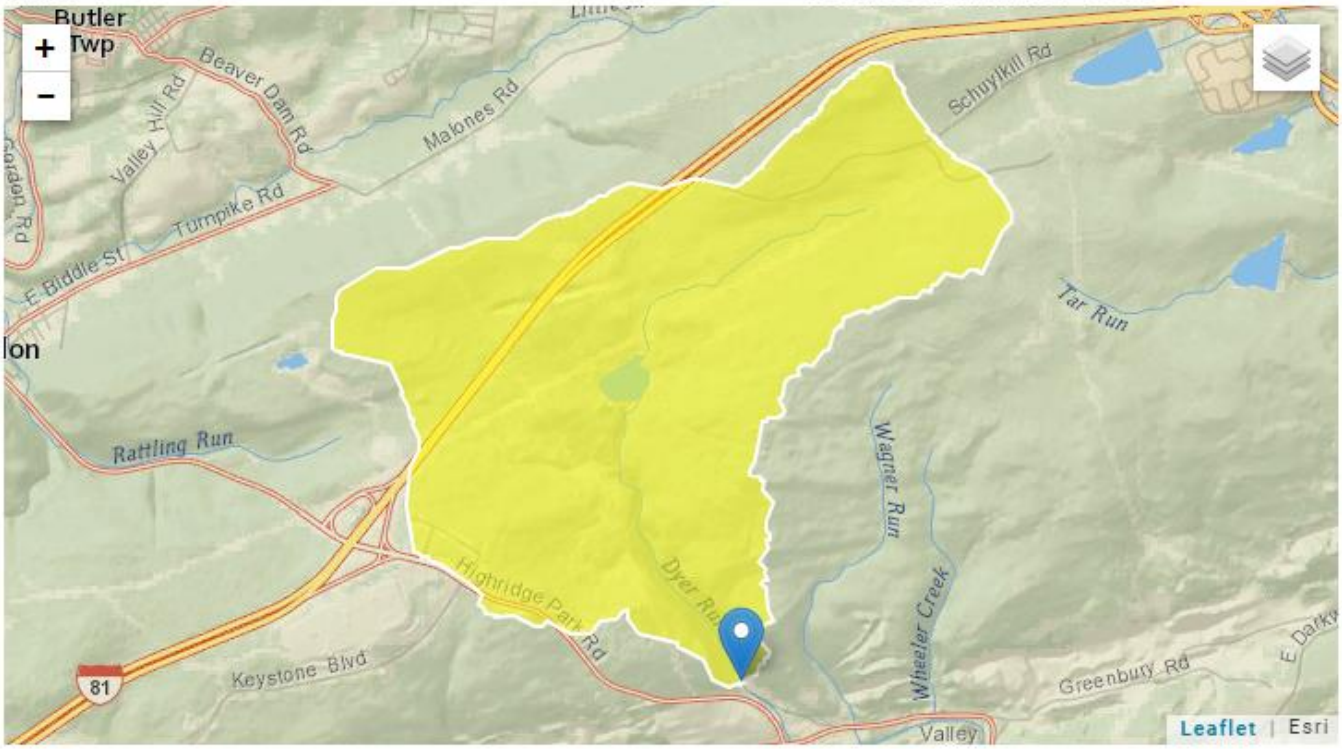
At Outfall to Dryer Run:

RMI	Elevation (ft)	Drainage Area (mi^2)	Q_{7-10} Flow (cfs)
0.53	1,071.32	4.75	1.21

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{1.21\ cfs}{4.75\ mi^2} = \mathbf{0.25}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID: PA
Workspace ID: PA20240822185137024000
Clicked Point (Latitude, Longitude): 40.72567, -76.27005
Time: 2024-08-22 14:52:01 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	4.75	square miles

Statistic	Value	Unit
7 Day 2 Year Low Flow	2.28	ft^3/s
30 Day 2 Year Low Flow	2.82	ft^3/s
7 Day 10 Year Low Flow	1.21	ft^3/s

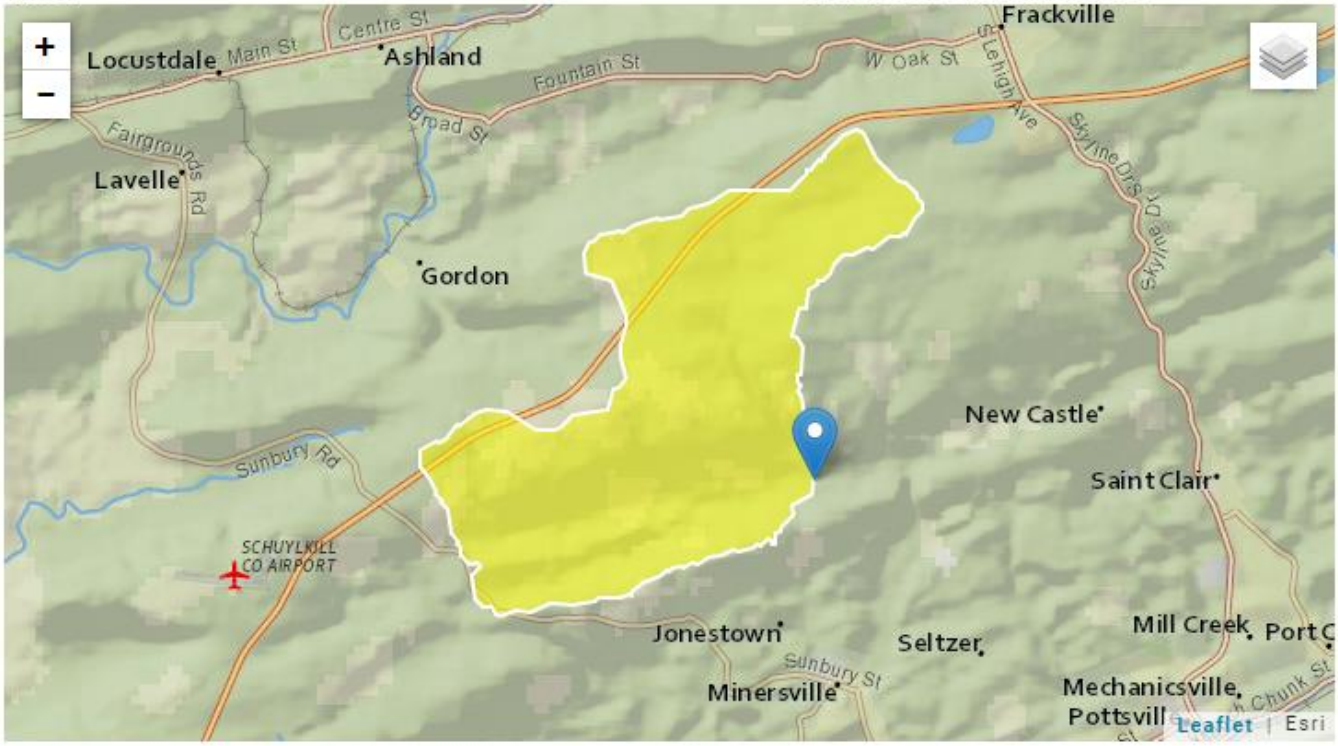
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

At confluence with West Branch Schuylkill River (2329):

RMI	Elevation (ft)	Drainage Area (mi^2)
0.0	939.5	10.4

StreamStats Report

Region ID:	PA
Workspace ID:	PA20240822191518256000
Clicked Point (Latitude, Longitude):	40.71970, -76.26516
Time:	2024-08-22 15:15:43 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	10.4	square miles

Modeling Using state-wide Low-Flow Yield (LFY) of 0.1 cfs/mi2:

$$\frac{0.1\ ft^3/sec}{mi^2} \times 4.75\ mi^2 = \frac{\mathbf{0.475\ ft^3}}{\mathbf{sec}}$$

Modeling Using USGS Stream Gage 1468500 – Schuylkill River at Landingville, PA:

Name	Value
USGS Station Number	01468500
Station Name	Schuylkill River at Landingville, Pa.
Station Type	Gaging Station, continuous record
Latitude	40.62926
Longitude	-76.12466
NWIS Latitude	40.6292577
NWIS Longitude	-76.1246622
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	09/30/1947 - 08/21/2024

Drainage Area	133	square miles

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
1 Day 10 Year Low Flow	40.8	cubic feet per second	✓	40		49	Statistic Date Range 4/1/1948 - 3/31/2008
7 Day 2 Year Low Flow	70.6	cubic feet per second	✓	40		49	Statistic Date Range 4/1/1948 - 3/31/2008
7 Day 10 Year Low Flow	44.5	cubic feet per second	✓	40		49	Statistic Date Range 4/1/1948 - 3/31/2008

$$\boldsymbol{LFY} = \frac{Q_{7-10}}{Stream\ Gage\ Drainage\ Area} \times \frac{44.5\ cfs}{133\ mi^2} = \mathbf{0.334}$$

$$\boldsymbol{Stream\ Flow} = Outfall\ 001\ Drainage\ Area \times LFY = 4.75\ mi^2 \times 0.334 = \mathbf{1.59\ cfs}$$

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

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

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.405	1.3.2.iii	WLA cfc = 1.362
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.524	5.1d	LTA_cfc = 0.792

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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

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