pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

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

Application Type	**Renewal**	Application No.	**PA0248070**
Facility Type	**Industrial**	APS ID	**571639**
Major / Minor	**Minor**	Authorization ID	**1197882**

Applicant and Facility Information

Applicant Name	**Mifflintown Borough Municipal Authority Juniata County**	Facility Name	**Mifflintown Water System**
Applicant Address	PO Box 36	Facility Address	259 Water Company Road
	Mifflintown, PA 17059-0036		Mifflintown, PA 17059
Applicant Contact	Michael Robinson	Facility Contact	Michael Robinson
Applicant Phone	(717) 436-2342	Facility Phone	(717) 436-2342
Client ID	40966	Site ID	450552
SIC Code	4941	Municipality	Milford Township
SIC Description	Trans. & Utilities - Water Supply	County	Juniata
Date Application Received	August 15, 2017	EPA Waived?	Yes
Date Application Accepted	January 10, 2018	If No, Reason	

Purpose of Application .

Summary of Review

This protection report has been developed for the renewal of the NPDES permit for the existing drinking water industrial wastewater treatment facility for the Mifflintown Borough Municipal Authority. The NPDES permit application indicates that the facility has one outfall; Outfall 001 has a design flow of 0.085 MGD. Outfall 001 discharges waters originating from the WTP backwash that have been treated and decanted from the existing backwash lagoons.

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.

Approve	Deny	Signatures	Date
		Aaron Baar / Permits Section	November 13, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Program Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.085
Latitude	40Âº 35' 30.36"	Longitude	-77Âº 25' 58.61"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Dry Swale to Juniata River	Stream Code	11414
NHD Com ID	66204831	RMI	37.3
Drainage Area	2790 mi^2	Yield (cfs/mi^2)	0.1125
Q_{7-10} Flow (cfs)	314	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	424.23	Slope (ft/ft)	
Watershed No.	12-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, SILTATION, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, GRAZING IN RIPARIAN OR SHORELINE ZONES		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Newport Borough		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: N/A

Treatment Facility Summary				
Treatment Facility Name: Mifflintown WTP				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial				0.085
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.085				

The treatment facility processes raw water sourced from Clearview Reservoir and the Juniata River in order to provide potable water for use. The treatment process includes pre-treatment with soda ash, hypochlorite and del-PAC followed by flocculation, clarification and filtering. Sludge from the filtration process and backwash tank are sent to backwash lagoons for settlement. Settled sludge is pumped to drying beds periodically for disposal in a landfill. Treated effluent is discharged to a dry swale that drains back to the Juniata River. Department biologists have determined that the point of first use is the Juniata River, so all analysis in this report pertains to the Juniata River.

All chemicals utilized are on the Department's approved list.

Compliance History	
Summary of DMRs:	See attached spreadsheet.
Summary of Inspections:	Since the last NPDES permit renewal, there are records in the Department's File Room that the facility has been inspected five times. The notes from the inspections are as follows: August 19, 2013: The Department's inspector, Pat Bowen, performed a routine inspection of the facility. The plant was found to be operating correctly and it was well maintained. June 27, 2014: The Department's inspector, Pat Bowen, performed a routine inspection of the facility. The plant was found to be operating correctly and it was well maintained. April 16, 2015: The Department's inspector, Pat Bowen, performed a routine inspection of the facility. Except for a September 2014 manganese violation. the plant was found to be operating correctly and it was well maintained. April 27, 2016: The Department's inspector, Pat Bowen, performed a routine inspection of the facility. The plant was found to be operating correctly and it was well maintained. March 9, 2017: The Department's inspector, Pat Bowen, performed a routine inspection of the facility. The plant was found to be operating correctly and it was well maintained.
Other Comments:	Recent DMRs and the inspection reports indicate that the effluent has consistently met permit limits.

Compliance History

DMR Data for Outfall 001 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.1259	0.128	0.129	0.093	0.129	0.065	0.069	0.067	0.048	0.05	0.046	0.051
Flow (MGD) Daily Maximum	0.272	0.27	0.269	0.262	0.265	0.261	0.257	0.259	0.243	0.23	0.243	0.264
pH (S.U.) Minimum	6.58	6.28	6.57	6.25	6.17	6.37	6.35	6.24	6.41	6.2	6.24	6.21
pH (S.U.) Maximum	6.91	7.14	6.96	6.96	6.54	6.69	6.66	6.71	6.54	6.68	6.79	7.7
TRC (mg/L) Average Monthly	0.12	0.11	0.13	0.13	0.12	0.13	0.14	0.12	0.13	0.12	0.12	0.13
TRC (mg/L) Instantaneous Maximum	0.15	0.14	0.14	0.14	0.14	0.15	0.19	0.14	0.14	0.13	0.13	0.21
TSS (lbs/day) Average Monthly	< 5	< 5	< 4	< 5	< 4	< 8	< 8	< 11	< 9	< 8	< 8	< 10
TSS (lbs/day) Daily Maximum	< 6	< 6	< 5	< 5	< 4	< 9	< 8	13	< 10	10	< 8	< 11
TSS (mg/L) Average Monthly	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 4.0	< 4.0	< 6.0	< 5.0	< 5.0	< 5.0	< 5.0
TSS (mg/L) Daily Maximum	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 4	< 4	8	< 5	5	5	< 5
Total Nitrogen (mg/L) Annual Average										< 1.51		
Total Nitrogen (lbs) Total Annual										215		
Total Phosphorus (mg/L) Annual Average										< 0.10		
Total Phosphorus (lbs) Total Annual										14.2		
Total Aluminum (lbs/day) Average Monthly	< 0.2	0.5	< 0.2	0.5	0.2	0.4	0.4	0.3	0.5	0.5	0.7	0.4
Total Aluminum (lbs/day) Daily Maximum	0.2	0.5	0.2	0.5	0.2	0.5	0.6	0.4	0.6	0.7	0.9	0.5

Total Aluminum (mg/L) Average Monthly	< 0.1	0.25	< 0.11	0.21	0.12	0.18	0.22	0.19	0.27	0.30	0.43	0.20
Total Aluminum (mg/L) Daily Maximum	< 0.104	0.288	0.117	0.256	0.136	0.23	0.29	0.22	0.287	0.351	0.555	0.228
Total Iron (lbs/day) Average Monthly	0.06	0.1	0.04	0.09	< 0.03	< 0.1	< 0.1	< 0.1	< 0.09	< 0.09	< 0.1	< 0.1
Total Iron (lbs/day) Daily Maximum	0.08	0.1	0.05	0.1	< 0.04	< 0.2	< 0.1	< 0.02	< 0.1	0.1	0.2	< 0.1
Total Iron (mg/L) Average Monthly	0.03	0.05	0.02	0.04	< 0.02	< 0.07	< 0.07	< 0.7	< 0.05	< 0.05	< 0.07	< 0.05
Total Iron (mg/L) Daily Maximum	0.0369	0.0692	0.0246	0.0531	< 0.02	< 0.07	< 0.07	< 0.7	< 0.05	0.0578	0.0932	< 0.05
Total Manganese (lbs/day) Average Monthly	2	0.6	0.3	0.4	0.1	0.1	0.2	0.2	0.1	0.1	0.4	0.3
Total Manganese (lbs/day) Daily Maximum	2	0.6	0.4	0.4	0.2	0.2	0.3	0.2	0.2	0.1	0.6	0.3
Total Manganese (mg/L) Average Monthly	0.82	0.29	0.18	0.17	0.09	0.06	0.10	0.10	0.07	0.08	0.23	0.16
Total Manganese (mg/L) Daily Maximum	1.02	0.322	0.215	0.206	0.0925	0.075	0.14	0.151	0.0884	0.0829	0.349	0.189

Existing Effluent Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
TSS	Report	Report	XXX	30	60	75	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Aluminum	Report	Report	XXX	4.0	8.0	9	2/month	8-Hr Composite
Total Iron	Report	Report	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .085
Latitude 40º 35' 46.40" **Longitude** -77º 26' 5.30"
Wastewater Description: IW Process Effluent without ELG

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Technology-based (BAT) effluent limits for water treatment plant wastewater discharges are presented in the Department's Guidance document entitled, "Technology Based Controls for Discharges from Water Treatment Plants" as follows:

Parameter	Monthly Avg mg/l	Daily Max. mg/l
Suspended Solids	30	60
Aluminum	4	8
Iron	2	4
Manganese	1	2
TRC	0.5	1.0
pH	6 - 9 S.U at all times	

Water Quality-Based Limitations

Stream Flow:

StreamStats was used to determine data for the stream flows for the water quality analysis. According to StreamStats, the discharge point of the dry swale into the Juniata River has a Q_{7-10} of 314 cfs and a drainage area of 2790 mi^2, which results in a Q_{7-10} low flow yield of 0.1125 cfs/mi^2.

Toxics

A reasonable potential (RP) analysis was done for the Group 1 and Group 2 pollutants using the sampling results provided with the application; Total Copper was flagged for further analysis. PENTOXSD was used to calculate a WQBEL for Copper at a pH of 7.7 and a discharge hardness of 19.3 mg/L. The attached PENTOXSD output (attached) indicates that no additional monitoring or limits are necessary at this time.

Additional Considerations

Effluent Limitations Evaluation:

The attached TRC Excel spreadsheet calculator, which uses the equations and calculations from guidance document 391-2000-015, indicates that existing TRC limits are sufficient to be protective of water quality.

It is recommended that all existing effluent limitations remain in effect. Recent DMRs and inspection reports indicate that the facility has been in compliance with existing limits since October 2014.

Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d LISTED STREAMS:

The discharge from this facility is to a dry swale to the Juniata River; the Juniata River was included on the EPA Approved 303d list for impaired waters. Juniata River is in Category 5 for water bodies, with an unknown source of pollution (pH) interfering with the designated use for aquatic life. No TMDL has been developed for section of waterway the existing outfalls discharge into.

Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

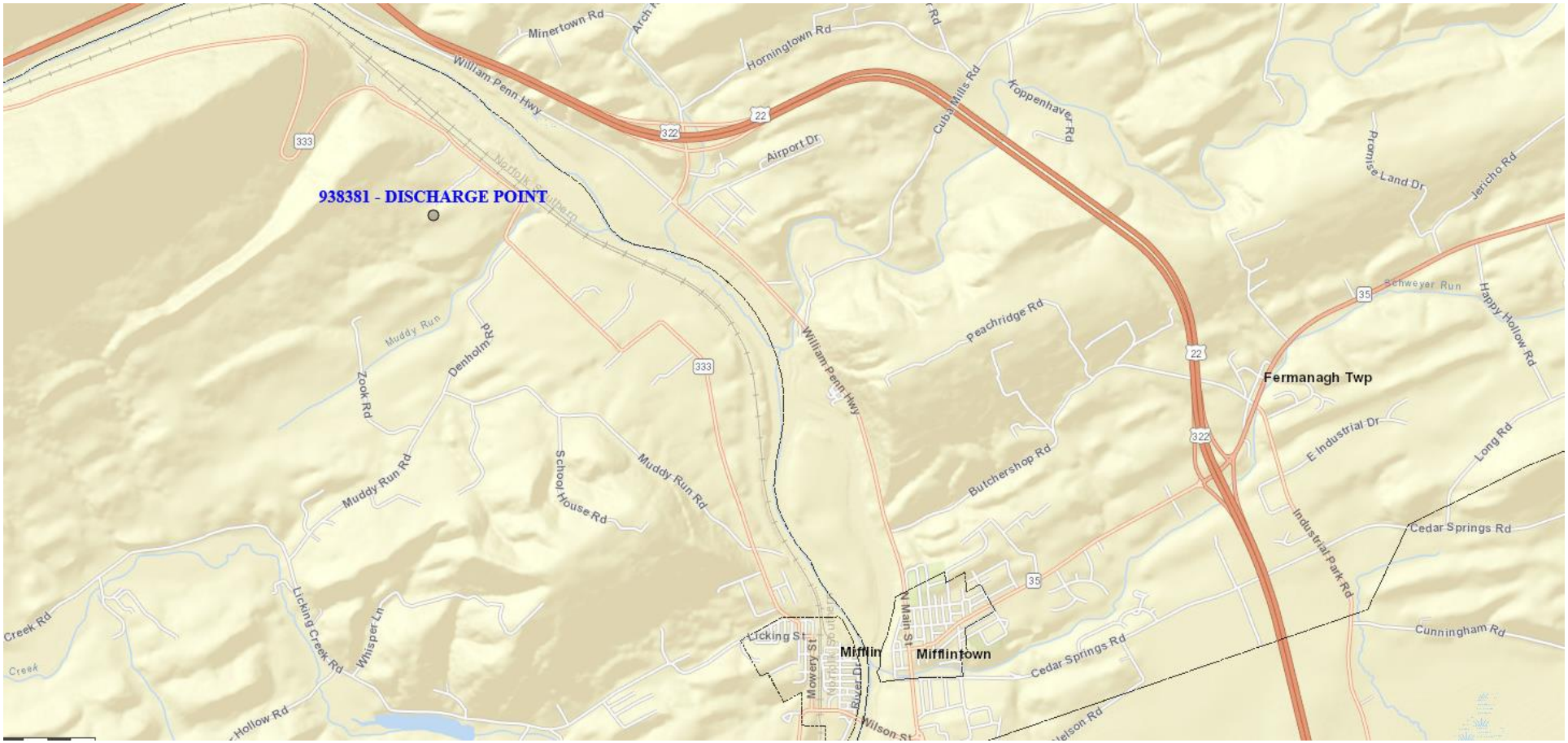
Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
TSS	Report	Report	XXX	30	60	75	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Aluminum	Report	Report	XXX	4.0	8.0	9	2/month	8-Hr Composite
Total Iron	Report	Report	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001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Minertown Rd
William Penn Hwy
Horningtown Rd
Airport Dr
Cuba Mills Rd
Troppenhaver Rd
Prairie Land Dr
Jericho Rd
Schweyer Run
Happy Hollow Rd
Peachridge Rd
Fermanagh Twp
E Industrial Dr
Long Rd
Butchershop Rd
Industrial Park Rd
Cedar Springs Rd
Cunningham Rd
Muddy Run
Zook Rd
Denholm Rd
Muddy Run Rd
School House Rd
Licking Creek Rd
Whisper Ln
Creek Rd
Licking St
Mowery St
Mifflin
N Main St
Mifflintown
River Dr
Wilson St
333
322
22
35

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