pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0206075**
Facility Type	**Industrial**	APS ID	**992706**
Major / Minor	**Minor**	Authorization ID	**1272402**

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

Applicant and Facility Information

Applicant Name	**Fate Ventures LLC**	Facility Name	**Howard Treatment Facility**
Applicant Address	587 Hollywood Road, P.O. Box 3317	Facility Address	2130 Campbells Mill Road
	Houma, LA 70361		Blairsville, PA 15717-8725
Applicant Contact	Don Henry	Facility Contact	Michael A. Bucheit
Applicant Phone		Facility Phone	(724) 771-4275
Client ID	348396	Site ID	611104
SIC Code	1389	Municipality	Burrell Township
SIC Description	Mining - Oil And Gas Field Services, Nec	County	Indiana
Date Application Received	March 20, 2019	EPA Waived?	No
Date Application Accepted	April 9, 2019	If No, Reason	Receives O&G Wastewater

Purpose of Application: Renewal and transfer of a NPDES Permit for an existing discharge of treated industrial waste.

Summary of Review

This is an existing treatment facility for the treatment of water generated by dewatering coal seams from which methane gas is extracted from 75 coalbed methane gas wells. This is also known as coal bed methane extraction. Many wells produce water from this activity in a given area and that water, known as coalbed methane connate water ("connate"), is conveyed via a pipe to a treatment facility.

This permit is being transferred from Keyrock Energy LLC to Fate Ventures LLC as part of this permit renewal. WQM Permit No. 3292203 will be transferred concurrently with final issuance of the NPDES Permit renewal. eDMR transfer paperwork has been submitted and is awaiting processing.

There are currently no open violations listed in EFACTS for this permittee (11/09/2020).

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
X		Adam J. Pesek, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.07
Latitude	40º 28' 13"	Longitude	-79º 13' 49"
Quad Name	Bolivar	Quad Code	1512
Wastewater Description:	Coalbed methane production water		

Receiving Waters	Blacklick Creek	Stream Code	43979
NHD Com ID	123715217	RMI	6.1
Drainage Area	396.1	Yield (cfs/mi^2)	0.1385
Q_{7-10} Flow (cfs)	54.86	Q_{7-10} Basis	USGS #03042000 ('52-'05)
Elevation (ft)	960	Slope (ft/ft)	0.002
Watershed No.	18-D	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final 1/29/2010	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Background/Ambient Data		Data Source
pH (SU)	7.33	7/24/17 Watershed Monitoring sample on Blacklick Creek Campbells Mill Road Bridge
Temperature (°F)		
Hardness (mg/L)	100	Default
Others: Manganese (mg/l)	0.239	7/24/17 Watershed Monitoring sample on Blacklick Creek Campbells Mill Road Bridge
Total Iron (mg/l)	0.327	

Nearest Downstream Public Water Supply Intake		Buffalo Township Municipal Authority – Freeport	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	29.4	Distance from Outfall (mi)	51

Changes Since Last Permit Issuance: Annual methane production wastewater volume declined approximately 61.12% between 2015 and 2017. The permittee predicts that the volume of produced water will decline even further in the next couple years as the coal seams are dewatered.

Other Comments:

Treatment Facility Summary				
Treatment Facility Name: Howard Treatment Facility				
WQM Permit No.	**Issuance Date**			
3292203 T-1	4/17/1994			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Primary	Settling	None	0
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.48				Landfill

Changes Since Last Permit Issuance:

Other Comments: Connate enters the facility via several collection pipelines. It passes through two lined settling basins in series where it is treated using setting, metals, oxidation and passive aeration. A minimum of two feet of freeboard is maintained. After passing through the second settling basin the water discharges to Blacklick Creek via outfall 001. Stormwater is diverted around the ponds to the greatest extent possible. The ponds are the only infrastructure at the facility so there are no other outfalls associated with the facility.

Compliance History

DMR Data for Outfall 001 (from December 1, 2018 to November 30, 2019)

Parameter	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18
Flow (MGD) Average Monthly	0.05	0.048	0.050	0.05	0.04	0.047	0.045	0.039	0.036	0.03	0.04	0.04
Flow (MGD) Daily Maximum	0.05	0.057	0.055	0.05	0.05	0.06	0.06	0.04	0.043	0.04	0.04	0.04
pH (S.U.) Minimum	7.27	7.44	7.6	7.57	7.39	7.07	7.44	7.38	7.48	7.48	7.49	7.75
pH (S.U.) Maximum	7.8	7.8	7.78	7.72	7.8	7.51	7.94	7.88	7.8	7.65	7.77	7.88
TSS (mg/L) Average Monthly	50.5	19.5	15	23.25	19	12.5	15	15.25	8.5	11	18.75	18
TSS (mg/L) Daily Maximum	84	23	22	43	25	16	24	18	12	14	31	34
Total Dissolved Solids (lbs/day) Average Monthly	1801	2748	2810	2554	1811	1814	2987	2031	1492.19	1499	2121	1541
Total Dissolved Solids (lbs/day) Daily Maximum	1943	3365	3265	2852	2372	2331	4073	2115	1864.82	2074	2335	1597
Total Dissolved Solids (mg/L) Average Monthly	4320	6890	6740	6125	5430	4630	7960	6245	4970	5995	6360	4620
Total Dissolved Solids (mg/L) Daily Maximum	4660	7080	7120	6840	5690	4660	8140	6340	5200	6220	7000	4790
Oil and Grease (mg/L) Average Monthly	5	3.8	5	5	5	5	5	5.03	5.12	5	5	5
Oil and Grease (mg/L) Daily Maximum	5	5.21	5.1	5	5	5	5	5.1	5.49	5	5	5
Total Acidity (mg/L) Average Monthly	-204	NULL96	NULL93	NULL85. 75	NULL24. 76	-75.4	-68.8	-96.2	-79.5	-96.8	NULL42. 73	-83.8
Total Acidity (mg/L) Daily Maximum	NULL83	NULL88	NULL55	NULL52	-36.8	58.8	-58.7	-75.7	-60.5	-59.7	-67.9	-73.2
Total Alkalinity (mg/L) Effluent Net Minimum	359	376	353	202.75	230.76	170.5	177	195.7	185.5	206.8	274.73	133
Total Alkalinity (mg/L) Minimum	155	180	160	17	106	95.1	94.9	99.5	106	110	132	133

Total Alkalinity (mg/L) Average Monthly	174	193	167	121	110	118.8	108	120.9	124.25	148	203	135
Total Alkalinity (mg/L) Daily Maximum	204	204	178	164	120	133	117	141	138	253	282	146
Total Aluminum (mg/L) Average Monthly	0.10	0.10	0.10	0.100	0.10	0.10	0.100	0.100	0.100	0.10	0.10	0.077
Total Aluminum (mg/L) Daily Maximum	0.10	0.10	0.10	0.100	0.10	0.10	0.100	0.100	0.100	0.10	0.10	0.100
Total Iron (mg/L) Average Monthly	0.93	0.451	0.19	2.17	0.82	0.249	0.231	0.200	0.209	0.246	1.64	0.333
Total Iron (mg/L) Daily Maximum	2.09	0.544	0.20	2.68	2.98	0.287	0.325	0.200	0.236	0.334	2.67	0.682
Total Manganese (mg/L) Average Monthly	0.55	0.532	0.332	1.31	0.99	0.073	0.050	0.050	0.05	0.061	0.22	0.092
Total Manganese (mg/L) Daily Maximum	1.27	0.729	0.10	4.52	4.70	0.098	0.050	0.050	0.05	0.096	0.314	0.177
Sulfate (lbs/day) Average Monthly	359	284	155.5	126	216	222	7	25.4	35.21	41	36	58
Sulfate (lbs/day) Daily Maximum	446	378	266.5	249	277	288	10	28.4	44.11	56	40	61
Sulfate (mg/L) Average Monthly	862	710.5	373	304.35	649.5	568	19.2	78.1	98.2	163.5	107.25	175
Sulfate (mg/L) Daily Maximum	1070	796	581	599	665	576	20.0	85.2	123	168	120	184
Chloride (lbs/day) Average Monthly	961	1353	1323.97	1282	797	819	1345	1115	866.19	798	854	668
Chloride (lbs/day) Daily Maximum	1092	1621	1495.36	1376	1004	1065	1841	1187	1075.9	1080	890	940
Chloride (mg/L) Average Monthly	2305	3380	3175	3075	2390	2090	19.2	3430	2885	3190	2560	2005
Chloride (mg/L) Daily Maximum	2620	3410	3260	3300	2410	2130	20.0	3560	3000	3240	2670	2820
Bromide (lbs/day) Average Monthly	7.94	26	18.84	6.44	8	9.72	30.38	18.52	15.32	13.9	11	18
Bromide (lbs/day) Daily Maximum	11	33	21.19	12.46	13	24	41.43	22.51	22.74	19.88	18	19
Bromide (mg/L) Average Monthly	19.05	63.9	45.2	15.45	25.45	24.8	80.95	56.95	51.05	55.6	33.25	54.4
Bromide (mg/L) Daily Maximum	26.9	69.6	46.2	29.9	31.2	46.7	82.8	67.5	63.4	59.6	54.8	57.9

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.07
Latitude 40º 28' 13.07" **Longitude** -79º 13' 49"
Wastewater Description: Coalbed methane production water.

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Oil & Grease	15.0	Average Monthly	-	95.2(2)(ii)
Oil & Grease	30.0	IMAX	-	95.2(2)(ii)

The production water is subject to the provisions in the oil & gas wastewater permitting manual ("OGPM").

The OGPM stipulates technology based effluent limitations as least as stringent as the following:

Parameter	Minimum	Average Monthly	Instantaneous Maximum
Total Suspended Solids (mg/L)	-	30	60
Oil and Grease (mg/L)	-	15	30
Iron, Total (mg/L)	-	3.5	7.0
Acidity (mg/L)	-	Less than Alkalinity.	
pH (s.u.)	6	-	9

Table 1: Technology based effluent limitations from the Oil & Gas Wastewater Permitting Manual

Additionally, the OGPM stipulates that the treatment facilities must incorporate the following:

- Flow equalization to ensure optimum treatment efficiency of the facilities and minimization of water quality impacts.
- Gravity separation and surface skimming, or equivalent technology, for oil and grease removal.
- Chemical addition for pH control and metals removal, if necessary (a pH range of 8.0-8.5 is desirable).
- Aeration, or equivalent technology, for reducing volatile petroleum hydrocarbons and oxidation for metals removal.
- Settling (retention) or filtration for removal of solids, including oxidized metals.

This facility is also subject to the effluent standards for Total Dissolved Solids (TDS) set forth in PA Code Chapter 95.10. This facility is not considered a new or expanding mass load as it was an authorized discharge prior to August 21, 2010. In the previous permit application the average and maximum discharge flows were reported in Module 3 of the permit application to be 0.16 and 0.48 MGD, respectively. Likewise, the average and maximum concentration of TDS were reported on module 4 of the permit application. Using this data an average and maximum TDS loading were calculated and the calculations are attached. This is the authorized loading. It will continue to be included as a special condition in the permit. If Howard discharges over this loading it will be considered an expanding load and must be reevaluated under Chapter 95.10. The average and maximum loadings are shown in table 2, below.

Parameter	Average Daily	Maximum Daily
Total Dissolved Solids (lb/day)	5,428	20,016

Table 2: Effluent standards from 25 PA Code Chapter 95.10.

Comments: While this facility does collect and treat connate from multiple wells it is not a centralized waste treatment facility subject to the effluent limit guideline ("ELG") 40 CFR 437. The applicability section of the ELG, 40 CFR 437.1(b), states, "This part does not apply to the following discharges of wastewater from a CWT facility: … (3) Wastewater from the treatment of wastes received from off-site via conduit (e.g., pipelines, channels, ditches, trenches, etc.) from the facility that generates the wastes unless the resulting wastewaters are commingled with other wastewaters subject to this provision." In this case the connate is being generated at the well and then delivered via a conduit (pipelines) to the treatment facility where it is processed and discharged.

Outfall 001 is subject to 40 CFR 435 the oil and gas extraction point source discharge ELG. 40 CFR 435 does not specify effluent limitations but stipulates that discharge of oil and gas production fluids from wells to surface waters of the commonwealth is prohibited unless the wastewaters are removed to an "off-site" treatment facility. Off-site is defined as a central wastewater collection and treatment facility associated with a multiple well operation. Therefore, the connate from individual coal bed methane wells is conveyed to a central wastewater treatment facility. Only coal bed methane production wastewater is accepted; it is not comingled with any other wastes.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment A) determined the following parameters were candidates for limitations: antimony, arsenic, boron, cadmium, cobalt, copper, lead, manganese, osmotic pressure, selenium, silver, strontium, thallium, total iron, total dissolved solids, chloride, bromide, sulfate, and phenolics

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
N/A			

Comments: No water quality-based limits were deemed necessary after water quality modeling. The toxic screening analysis spreadsheet recommended monitoring for total dissolved solids, chloride, bromide, and sulfate. The spreadsheet recommended this based on 25 Pa Code Chapter 95.10 guidance which is explained in more detail below.

TDS and its major constituents including sulfate, chloride, and bromide 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 formation of disinfection byproducts at increased levels in public water systems. In addition, as a consequence of actions associated with Triennial Review 13, the Environmental Quality Board has directed DEP to collect additional data related to sulfate, chloride, and 1,4-dioxane Based on these concerns and under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for TDS, sulfate, chloride, bromide, and 1,4-dioxane.

This monitoring initiative applies to all programs within DEP that have been delegated the responsibilities of implementing the NPDES program. The increased monitoring applies to all point source discharges, except that DEP may determine that certain sources are too small to warrant routine monitoring. Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, monitoring is required for TDS, sulfate, chloride, and bromide. Therefore, since Howard discharges 4,067 mg/L of TDS as a monthly average with a design discharge rate of 0.48 MGD, monitoring requirements for TDS, sulfate, chloride and bromide will be imposed shown in table 4, below.1,4-dioxane is not a pollutant of concern.

Howard is within the watershed area covered by the Kiskiminetas-Conemaugh watershed TMDL, approved as final by EPA in 2010. This TMDL addresses certain impairments of water quality standards associated with elevated instream concentrations of iron, aluminum, and manganese. A pH impairment is addressed through a surrogate relationship with these metals. This TMDL establishes wasteload allocations for these metals for point sources, and load allocations for these metals for nonpoint sources in the watershed. DEP must assure that any effluent limitations assigned to point sources are consistent with the assumptions and requirements of any available wasteload allocation for the discharge pursuant to 40 CFR 130.7 (i.e., a final TMDL). Howard was designated a wasteload allocation in the TMDL.

The allocated concentrations for Howard are the most stringent applicable water quality criteria (Fe: 1.5 mg/L, Al: 0.75 mg/L, Mn: 1.0 mg/L). Effluent limitations for all continuous discharges other than POTWs must be expressed as both average monthly and maximum daily effluent limits. Accordingly, the appropriate average monthly and maximum daily effluent limits for iron, aluminum, and manganese have been established based on whether the underlying water quality

criteria are designed to protect against chronic exposures or acute exposures per DEP policy. The applicable effluent limitations are shown in table 3, below.

.

Parameter	Average Monthly (lb/day)	Daily Maximum (lb/day)	Average Monthly (mg/L)	Daily Maximum (mg/L)
TDS	Report	Report	Report	Report
Chloride	Report	Report	Report	Report
Sulfate	Report	Report	Report	Report
Bromide	Report	Report	Report	Report
Aluminum, total	-	-	0.75	0.75
Iron, total	-	-	1.5	3.0
Manganese, total	-	-	1.0	2.0

Table 3: Effluent limitations based on the Kiskiminetas-Conemaugh watershed TMDL and monitoring requirements per DEP Chapter 95.10 policy.

Best Professional Judgment (BPJ) Limitations

Comments: The Department's Guidance Document entitled "Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS) – 25 Pa. Code Chapter 95.10" recommends that facilities that discharge treated natural gas wastewater which is not treated to the pollutant concentrations found in Chapter 95.10 (b)(3)(iii) should have monitor and report requirements for radium 226/228 (combined, gross alpha activity, and uranium and develop a radiation protection Action Plan. The Toxic Screening Analysis Spreadsheet did not find any of these parameters to be parameters of concern, and therefore the Department does not suggest monitoring for these parameters be placed in the proposed renewed permit. In addition, the need to develop a radiation protection Action Plan is not deemed necessary at this time due to there being no radiological pollutants of concern/monitoring in the proposed renewed permit.

Anti-Backsliding

N/A

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	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/week	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	1/week	Grab
Total Dissolved Solids	Report Annl Avg	XXX	XXX	XXX	XXX	XXX	1/year	Calculation
Total Dissolved Solids	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	Grab
Oil and Grease	XXX	XXX	XXX	15.0	XXX	30.0	1/week	Grab
Total Acidity	XXX	XXX	XXX	Report	XXX	XXX	1/week	Grab
Total Alkalinity Effluent Net	XXX	XXX	0	XXX	XXX	XXX	1/week	Calculation
Total Alkalinity	XXX	XXX	XXX	Report	XXX	XXX	1/week	Grab
Total Aluminum	XXX	XXX	XXX	0.75	0.75 Daily Max	XXX	1/week	Grab
Total Iron	XXX	XXX	XXX	1.5	3.0 Daily Max	XXX	1/week	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0 Daily Max	XXX	1/week	Grab
Sulfate	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Chloride	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab

Outfall 001, Continued (from 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	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Bromide	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab

Compliance Sampling Location: Outfall 001 (prior to mixing with any other waters).

Other Comments:

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment **A**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **A**)
☒	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: New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, SOP No. BPNPSM-PMT-001
☒	SOP: Establishing Effluent Limitations for Individual Industrial Permits, SOP No. BCW-PMT-032
☒	Other: Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS) -- 25 *Pa. Code* §95.10, ,385-2100-002, 11/12/11.
☒	Other: Oil and Gas Wastewater Permitting Manual, 550-2100-002, 10/30/01.

ATTACHMENT A

20200113074812439
.pdf

Figure 1 - Toxic Screening Analysis

20200113074830473
.pdf

Figure 2 - PENTOXSD Modeling

20200113074843220
.pdf

Figure 3 - PWS Evaluation

20200113074856306
.pdf

Figure 4 - Discharge pH