pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0023451**
Facility Type	**Municipal**	APS ID	**981041**
Major / Minor	**Minor**	Authorization ID	**1252153**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mount Jewett Borough Regional Sewer Authority**	Facility Name	**Mt Jewett WWTP**
Applicant Address	PO Box 680, 1 Center Street	Facility Address	1 Kinzua Street
	Mount Jewett, PA 16740		Mount Jewett, PA 16740
Applicant Contact	Diana Rankin, Borough Secretary	Facility Contact	John Hayduk, WWTP Operator
Applicant Phone	(814) 975-3035	Facility Phone	(814) 778-9954
Client ID	203531	Site ID	264330
Ch 94 Load Status	Not Overloaded	Municipality	Mount Jewett Borough
Connection Status	No Limitations	County	McKean County
Date Application Received	November 1, 2018	EPA Waived?	Yes
Date Application Accepted	November 14, 2018	If No, Reason	-
Purpose of Application	Renewal of an existing NPDES Permit for an existing discharge of treated sanitary wastewater from a municipal sewer system.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.
A Part II Water Quality Management permit is not required at this time.
The applicant should be able to continue to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into sewers
B. Right of way
C. Solids handling
D. Effluent Chlorine Optimization and Minimization
E. Limited Assimilative Capacity/Dilution

SPECIAL CONDITIONS:

II. Solids Management

There are no open violations in efacts associated with the subject Client ID (203531) as of 9/18/2019.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley, 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)	0.5
Latitude	41º 43' 53.0"	Longitude	-78º 39' 1.0"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Kinzua Creek (CWF)	Stream Code	56522
NHD Com ID	112376991	RMI	23.38 (first perennial point)
Drainage Area	27.5	Yield (cfs/mi^2)	0.1 (default)
Q_{7-10} Flow (cfs)	2.75	Q_{7-10} Basis	calculated
Elevation (ft)	1680	Slope (ft/ft)	0.002622
Watershed No.	16-B	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. - Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	128.0

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.5 MGD of treated sewage from an existing Publicly Owned Treatment Works (POTW) in Mount Jewett Borough, McKean County.

Permitted treatment (WQM Permit no. 4292405) consists of: A 4,217,264 gallon aerated lagoon, a second 14,391,574 gallon aerated lagoon, and a 6,932,194 gallon third lagoon in series, three intermittent 14,400

square foot (120' X 120') rapid sand infiltration basins, and chlorine disinfection.

Facility Area: See the topographical map (Attachment 1) and the aerial map (Attachment 2)

1. Streamflow: Kinzua Creek @ first perennial point:

Drainage Area:	27.5	sq. mi.	(USGS StreamStats)
Yieldrate:	0.1	cfsm	(default)
% of stream allocated:	100%	Basis:	No nearby discharges
Q_{7-10}:	2.75	cfs	

2. Wasteflow: Outfall 001

Maximum discharge: 0.5 MGD = 0.77 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a Municipal STP (lagoons)

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow) due to the receiving stream being dry/intermittent. However, since this is an existing discharge, the more stringent treatment requirements cannot be achieved, and the receiving stream is not impaired by the discharge, the standards in DEP guidance (391-2000-014) will not be applied. Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Total Residual Chlorine. NH_3-N, $CBOD_5$, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides can be evaluated using PentoxSD at the nearest downstream potable water supply (PWS). Since there is significant dilution available, no modeling was performed for this facility.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as a daily maximum.

Basis: Application of Chapter 92a47 technology-based limits.

c. Fecal Coliform

05/01 - 09/30:	200/100ml	(monthly average geometric mean)
	1,000/100ml	(instantaneous maximum)
10/01 - 04/30:	2,000/100ml	(monthly average geometric mean)
	10,000/100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. Phosphorus

☐ Limit necessary due to:

☐ Discharge to lake, pond, or impoundment
☐ Discharge to stream

☒ Limit not necessary

Basis: Chapter 96.5 does not apply. However, a Total Phosphorus and a Total Nitrogen monitoring requirement will be retained as recommended by the SOP to provide data for review during the next renewal application to ensure the discharge is not high in nutrients.

e. NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides

Nearest Downstream potable water supply (PWS): Aqua Pennsylvania, Inc. - Emlenton

Distance downstream from the point of discharge: 128.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

f. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 6.9 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background NH_3-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH_3-N Summer limits: 11.9 mg/l (monthly average)
23.8 mg/l (instantaneous maximum)

Calculated NH_3-N Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 3). The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. The previous NPDES Permit limits will be retained since the previous limits are being attained.

g. $CBOD_5$

Median discharge pH to be used: 6.9 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature:	25°C	(default value used in the absence of data)
Median stream pH to be used:	7.0	Standard Units (S.U.)
		Basis: default value used in the absence of data
Stream Temperature:	20˚C	(default value used for CWF modeling)
Background $CBOD_5$ concentration:	2.0	mg/l
		Basis: Default value
$CBOD_5$ Summer limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)
$CBOD_5$ Winter limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the above summer limits (see Attachment 3), which are the same as the previous NPDES Permit and will be retained. Since the summer limits are technology-based, the winter limits will also be technology-based.

h. Dissolved Oxygen (DO)

Discussion: The Dissolved Oxygen technology-based minimum of 6.0 mg/l will be retained since the previous DO minimum is being attained. The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

i. Total Residual Chlorine (TRC)

☐ No limit necessary
☒ TRC limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: Technology-based limits for chlorine disinfection based on the first point of aquatic life being the Kinzua Creek (see Attachment 4). The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

j. Influent Total Suspended Solids and BOD_5

Monitoring for these two parameters will be retained as recommended in the SOP for POTWs, as authorized under Chapter 92a.61.

k. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

4. Additional Information:

The Mt Jewett WWTP receives 91.5% of its flow from the Mount Jewett Borough, 3.5% from the Hamlin Township, and the remaining 5.0% from the Sergeant Township. Mount Jewett Borough is 99.9% separate sewers, and the Hamlin and Sergeant Townships are 100% separate sewer systems.

5. Attachment List:

Attachment 1 - Topographical Map of the Facility Area
Attachment 2 - Aerial Image of the Facility Area
Attachment 3 - WQM7 printouts
Attachment 4 - TRC_Calc Spreadsheet

If viewing this electronically, please refer to the following PDF to view the above Attachments:

Adobe Acrobat Document

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.131	0.405	0.395	0.324	0.282	0.392	0.354	0.347	0.421	0.420	0.292	0.206
Flow (MGD) Daily Maximum	0.242	0.591	0.700	0.574	0.590	0.714	0.522	0.613	0.652	0.640	0.696	0.661
pH (S.U.) Minimum	6.81	6.9	6.70	6.7	6.4	6.82	6.88	6.8	6.73	6.74	6.78	6.8
pH (S.U.) Maximum	7.04	7.37	7.07	7.27	7.10	6.99	7.07	6.99	7.14	7.11	7.12	7.18
DO (mg/L) Minimum	6.0	6.11	7.34	9.99	12.73	14.65	12.8	12.7	10.35	8.14	7.49	7.6
TRC (mg/L) Average Monthly	0.111	0.082	0.125	0.127	0.169	0.14	0.14	0.10	0.095	0.12	0.148	0.153
CBOD5 (lbs/day) Average Monthly	0.731	5.659	3.424	9.493	10.173	17.896	5.481	4.033	5.144	6.764	1.165	0.754
CBOD5 (lbs/day) Weekly Average	2.301	8.723	5.195	18.408	22.782	54.626	9.820	1.255	6.658	3.135	1.891	1.388
CBOD5 (mg/L) Average Monthly	0.662	1.592	0.847	3.400	3.045	4.14	1.81	1.255	1.55	4.176	0.530	0.712
CBOD5 (mg/L) Weekly Average	2.0	2.0	0.970	5.02	6.03	9.59	2.64	1.960	1.91	0.850	0.810	0.960
BOD5 (mg/L) Raw Sewage Influent Average Monthly	92.22	42.5	34.3175	32.88	21.75	42.3	36.62	52.775	46.1	55.32	99	126.95
TSS (lbs/day) Average Monthly	2.780	9.628	9.929	16.776	15.466	18.019	7.945	8.309	8.277	8.515	5.206	3.356
TSS (lbs/day) Weekly Average	4.357	11.909	14.595	31.174	27.063	20.506	9.821	12.890	8.757	10.258	7.005	7.506
TSS (mg/L) Average Monthly	2.50	2.80	2.5	5.978	5.05	2.775	2.7	2.575	< 2.5	< 2.5	2.5	2.875
TSS (mg/L) Raw Sewage Influent Average Monthly	93.2	43.8	34.175	29.8	20.675	22.5	33.7	44.5	45.5	160.8	165.5	126
TSS (mg/L) Weekly Average	2.50	3.20	2.5	8.400	9	3.6	3.2	2.8	< 2.5	< 2.5	2.5	4
Fecal Coliform (CFU/100 ml) Geometric Mean	1.0	1	1	2.710	1.0	4.1	< 1.0	1.0	1.0	1.326	27.280	12.4
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1.0	1	1	30.008	1.0	1.775	1.0	1.0	1.0	1.62	3.375	1.525

Total Nitrogen (mg/L) Average Monthly	2.692	3.805	4.367	5.674	4.912	6.0	5.464	3.105	4.352	3.452	5.197	3.17
Ammonia (lbs/day) Average Monthly	3.462	1.626	3.975	6.756	5.756	4.747	3.065	1.922	0.925	2.724	0.804	0.236
Ammonia (mg/L) Average Monthly	0.223	0.419	0.968	2.326	1.877	1.533	1.078	0.634	0.269	0.816	0.395	0.207
Total Phosphorus (mg/L) Average Monthly	0.764	0.565	0.615	0.576	0.517	0.475	0.475	0.435	0.465	1.100	0.802	0.880

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for Total Residual Chlorine (TRC) are technology based on Chapter 92a.48. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for influent BOD5 and TSS is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. Monitoring for Total Nitrogen and Total Phosphorus is based on Chapter 92a.61.

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	104.0	167.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	125.0	188.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	18.8	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	6.3	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection.