pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	Renewal	Application No.	**PA0102369**
Facility Type	Non-Municipal	APS ID	**936814**
Major / Minor	Minor	Authorization ID	**1175554**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Rainbow Valley MHP**	Facility Name	**Rainbow Valley MHP**
Applicant Address	400 Lord Road	Facility Address	11682 Route 97 North
	Fairview, PA 16415-1526		Waterford, PA 16441
Applicant Contact	Jack R. Foht	Facility Contact	J. Brian Foht
Title	owner	Title	President
Applicant Phone	(814) 474-1102	Facility Phone	(814) 474-1102
E mail		E mail	jbrianfoht2@gmail.com
Client ID	43742	Site ID	258566
Municipality	Waterford Township	County	Erie
Ch 94 Load Status	Not Overloaded	Connection Status	No Limitations
SIC Code	**6515**	SIC Code	4952
SIC Description	**Fin, Ins & Real Est - MH Site Oper**	SIC Description	Trans. & Utilities - Sewerage Systems
Application Received	March 28, 2017	EPA Waived?	Yes
Application Accepted	April 11, 2017	If No, Reason	

Application Purpose: NPDES permit renewal.

Summary of Review

The facility is currently in compliance.

DO, pH and TRC monitoring has been increased from weekly to daily, the minimum daily DO has been increased from 3-mg/l to 4-mg/L and winter ammonia, total nitrogen, and total phosphorus monitoring has been added.

The self-monitoring reports indicate no problems with the proposed changes.

Approve	Deny	Signatures	Date
X		William H. Mentzer, P.E. Environmental Engineering Specialist	February 27, 2020
X		Justin C. Dickey, P.E. Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.05
Latitude DP	41º 57' 49.95"	Longitude DP	-79º 59' 32.92"
Latitude NHD	41º 57' 49.90"	Longitude NHD	-79º 59' 32.64"
Quad Name	Waterford	Quad Code	0306
Wastewater:	Mobile home park domestic wastes		

Receiving Waters	Unnamed Tributary to LeBoeuf Creek	Stream Code	53523
NHD Com ID	127355143	RMI	0.51
Drainage Area	0.78	Yield (cfs/mi^2)	0
Q_{7-10} Flow (cfs)	0	Q_{7-10} Basis	Dry stream
Elevation (ft)	1218.53	Slope (ft/ft)	0.01269
Watershed No.	16-A	Chapter 93 Class.	TSF
Existing Use	**statewide**	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments	Perennial stream at confluence with LeBoeuf Creek RMI 8.67; drainage 41.1-square-mile Elevation 1204.93-feet		

Low Flow Basis	French Creek near Union City		Station Number	03021520	RMI		
	Low Flow (cfs)	17.407	Drainage (sq-mi)	211	Yield (cfs/sq-mi)	0.0825	
Comments	An alternative low flow basis is Walnut Creek based on a 1944-57 correlation.						

Assessment Status	Attaining Use(s)
Cause(s) of Impairment	
Source(s) of Impairment	
TMDL Status	Name

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°C)		
Hardness (mg/L)		
CBOD5 (mg/L)	2.0	default
Ammonia as N (mg/L):	0.1	default
Other		

Nearest Downstream Public Water Supply Intake	Cambridge Springs Borough		
PWS Waters	French Creek	Flow at Intake (cfs)	NA
PWS RMI	50.28	Distance from Outfall (mi)	18.85

Changes Since Last Permit Issuance: none

Other Comments: none

Treatment Facility Summary				
Treatment Facility Name: Rainbow Valley M H P				
WQM Permit No.	**Issuance Date**			
2585401	May 3, 1985	May 3, 1985		
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Hypochlorite	0.05
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.05	120	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: none

Other Comments:
1 operator present
Comminution followed by parallel extended aeration and clarification and common disinfection
No industrial users reported
No outside waste sources reported
No sludge removal reported

			Influent				Effluent			
	month	**year**	**mean MGD**	**mean PPD**	**max**	**#**	**min mg/L**	**mean mg/L**	**max mg/L**	**#**
Annual Average Design			**0.0500**							
Hydraulic Design			**0.0500**							
Organic Load										
Annual Average		**2016**	**0.0220**							
		2015	**0.0267**							
		2014	**0.0244**							
High Monthly Average	**May**	**2016**	**0.0389**							
pH							**7.15**		**7.72**	**208**
TRC								**0.235**	**0.67**	**104**
Fecal Coliform								**42.95**	**2400**	**48**
CBOD5								**4.35**	**8.0**	**48**
TSS								**7.72**	**13.75**	**48**
Ammonia								**0.965**	**2.19**	**24**
Nitrogen								**24**	**24**	**1**
Phosphorus								**2.19**	**2.19**	**1**

Compliance History

DMR Data for Outfall 001 (from March 1, 2016 to February 28, 2017)

Parameter	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16	JUL-16	JUN-16	MAY-16	APR-16	MAR-16
Flow (MGD) Ave Monthly	0.0298	0.0276	0.0277	0.0214	0.0246	0.0253	0.0291	0.2310	0.0308	0.03089	0.030896	0.0308
pH (S.U.) Minimum	7.48	7.31	7.29	7.21	7.16	7.41	7.48	7.44	7.52	7.54	7.54	7.51
pH (S.U.) Maximum	7.66	7.56	7.36	7.33	7.57	7.62	7.62	7.61	7.61	7.74	7.68	7.66
DO (mg/L) Minimum	8.46	7.59	8.42	7.69	7.92	6.48	5.66	5.06	6.22	7.16	7.01	6.56
TRC (mg/L) Ave Monthly	0.36	0.30	0.27	0.29	0.35	0.32	0.20	0.16	0.19	0.22	0.33	0.19
TRC (mg/L) Instant Max	0.48	0.42	0.36	0.39	0.44	0.46	0.31	0.19	0.23	0.31	0.46	0.27
CBOD5 (mg/L) Average Monthly	< 4	4.2	4	4.0	< 4	4.0	4.0	4	4	4	4	4.0
TSS (mg/L) Ave Monthly	11.25	18.1	5	5.0	< 5	5.0	5.0	5	6.50	6	11	7.50
Fecal Coliform (#/100 ml) Geometric Mean	< 1	< 1	1.4	1	2	1.0	12	1	1	1	1.0	1
Fecal Coliform (#100 ml) Instant Maximum	< 1	< 1	2	1	3	1.0	142	1	1	1	1.0	1
Ammonia (mg/L) Average Monthly					0.94	0.62	0.30	1.35	2.04	0.45		

Data for Outfall 001 (from January 1, 2019 to December 31, 2019)

Parameter	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19
Flow (MGD) Ave Monthly	0.0206	0.01824	0.018	0.01952	0.01884	0.0195	0.0322	0.0244	0.0226	0.0224	0.02367	0.02185
pH (S.U.) Minimum	7.44	7.46	7.48	7.42	7.42	7.34	7.62	7.41	7.54	7.50	7.60	7.50
pH (S.U.) Maximum	7.56	7.64	7.66	7.55	7.52	7.62	7.66	7.72	7.78	7.76	7.66	7.62
DO (mg/L) Minimum	7.34	6.64	7.60	7.06	7.40	7.29	7.96	8.66	8.80	7.21	7.10	6.92
TRC (mg/L) Ave Monthly	0.26	0.26	0.258	0.25	0.28	0.28	0.29	0.26	0.34	0.29	0.20	0.268
TRC (mg/L) Instant Max	0.34	0.46	0.34	0.31	0.36	0.30	0.34	0.33	0.62	0.34	0.28	0.36
CBOD5 (mg/L) Average Monthly	8.1	10.85	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	4.25	< 4.0	< 4.0	< 4.0
TSS (mg/L) Ave Monthly	18	< 5.0	< 5.0	5.75	< 5.0	5.50	< 5.0	5.0	6.0	6.0	7.25	9.25
Fecal Coliform (#/100 ml) Geometric Mean	3.16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	48.98	48.9	< 1.0	< 1.0	< 1.0
Fecal Coliform (#/100 ml) Instant Maximum	10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	2400	2400	< 1.0	< 1.0	< 1.0
Ammonia (mg/L) Average Monthly			0.685	0.575	0.815	1.51	0.52	3.48				

Compliance History

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .05
Latitude 41º 57' 49.95" **Longitude** -79º 59' 32.92"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
DO	4.9-mg/L	Daily minimum		BPJ

Comments: none

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files submitted w/WQPR):

Parameter		Limit (mg/l)			SBC	Model		
		min	mean	max		min	mean	max
Dissolved Oxygen		4.0			NA	4.0		
Ammonia-Nitrogen	5/1 – 10/31		15	30	NA		15	30
TRC			0.5	1.2			0.5	1.6

Comments: determined through WQM7 modeling.

Additional Considerations

Modelling using the Walnut Creek partial record gauge station with 1944-1957 data correlated to Sugar Creek at Sugarcreek and a 25% reserve provides a 0.0223-cfs/square mile basin yield and ammonia limitations similar to the existing established requirements.

Modelling using low flows based on French Creek near Union City provides higher basin yields. Lowest basin yield is 9.6-cfs or 0.0455-cfs/square mile for the period 1911 through 1972. The current yield is 14.407 cfs or 0.0825-cfs/square mile. The winter ammonia requirements predate 1996 and remain in effect as the facility has shown compliance with this requirement. Also the submitted self-monitoring reports show compliance with the existing TRC daily maximum limitation so that no change to the TRC daily maximum is necessary or proposed.

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	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	XXX	XXX	XXX	20.0	XXX	40.0	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	15.0	XXX	30.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

Compliance Sampling Location: At Outfall 001 after disinfection

Other Comments: Total nitrogen monitoring is new. Total phosphorus is from the existing NPDES permit.