pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0035289**
Facility Type	**Non-Municipal**	APS ID	**849834**
Major / Minor	**Minor**	Authorization ID	**1271895**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Spagnolo Properties, LP**	Facility Name	**Glen Lake Estates MHP**
Applicant Address	601 Columbia Court	Facility Address	1037 Barkeyville Road
	Mars, PA 16046		Grove City, PA 16127
Applicant Contact	John Spagnolo	Facility Contact	John Spagnolo
Applicant Phone	724-426-1965	Facility Phone	724-426-1965
Client ID	314053	Site ID	244055
Ch 94 Load Status	Not Overloaded	Municipality	Pine Township
Connection Status	No Limitations	County	Mercer County
Date Application Received	May 3, 2019	EPA Waived?	Yes
Date Application Accepted	May 3, 2019	If No, Reason	-

Purpose of Application: Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater from a MHP.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A WQM Permit is not required at this time.

The Permittee should be able 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. Public Sewerage Availability
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management

Permitted treatment consists of: (WQM Permit no. 4398409) A 4,000 gallon aerated flow equalization tank with two grinder pumps, a 19,750 gallon aeration tank, alum addition for phosphorus removal, a 2,334 gallon clarifier with an inverted pyramidal hopper bottom, two 1,615 gallon dosing tanks that dose two intermittent 900 square foot (30' x 30') surface sand filters, liquid chlorine disinfection with a 292 gallon contact chamber, and 2,500 gallon aerated sludge holding tank.

There are 3 open violations in efacts associated with the subject Client ID (314053) as of 12/10/2019 (see attached).

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)	0.0145
Latitude	41° 10’ 55.00”	Longitude	-80° 02’ 01.00”
Quad Name	-	Quad Code	-
Wastewater Description:	treated sanitary wastewater		
Receiving Waters	Unnamed Tributary to the Wolf Creek (CWF)	Stream Code	N/A
NHD Com ID	126219179	RMI	N/A
Drainage Area	1.21	Yield (cfs/mi^2)	0.1 (assumed)
Q_{7-10} Flow (cfs)	0.121	Q_{7-10} Basis	calculated
Elevation (ft)	1260	Slope (ft/ft)	0.001456
Watershed No.	20-C	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	Pennsylvania American Water Company - Ellwood City		
PWS Waters	Slippery Rock Creek	Flow at Intake (cfs)	53.1
PWS RMI	0.1	Distance from Outfall (mi)	27.0

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 0.0145 MGD of treated sewage from a non-municipal STP in Pine Township, Mercer County.

Treatment permitted under WQM Permit 4398409 consists of: A 4,000 gallon aerated flow equalization tank with two grinder pumps, a 19,750 gallon aeration tank, alum addition for phosphorus removal, a 2,334 gallon clarifier with an inverted pyramidal hopper bottom, two 1,615 gallon dosing tanks that dose two intermittent 900 square foot (30’ x 30’) surface sand filters, liquid chlorine disinfection with a 292 gallon contact chamber, and 2,500 gallon aerated sludge holding tank.

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

1. Streamflow: Unnamed Tributary to the Wolf Creek @ Outfall 001:

Drainage Area:	1.21	sq. mi.	(USGS StreamStats)
Yieldrate:	0.1	cfsm	(Default Value)
Q_{7-10}:	0.121	cfs	(Calculated)

% of stream allocated: 100% Basis: No nearby discharges

2. Wasteflow:

Maximum discharge: 0.0145 MGD = 0.0224 cfs

Runoff flow period: 24 hours Basis: Runoff flow with flow equalization

There is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). In accordance with the SOP, since this is an existing discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be implemented in this NPDES Permit.

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 is set 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

Basis: N/A

☒ Limit not necessary

Basis: Chapter 96.5 does not apply. However, monitoring for Total Phosphorus will be added in accordance with the SOP, based on Chapter 92a.61.

e. Total Nitrogen

Monitoring for Total Nitrogen will be added in accordance with the SOP, based on Chapter 92a.61.

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

Nearest Downstream potable water supply (PWS): Pennsylvania American Water Company - Ellwood City

Distance downstream from the point of discharge: 27.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used:	7.3	Standard Units (S.U.)
		Basis: eDMR data
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:	15.0	mg/l (monthly average)
	30.0	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 water quality-based limits above (see Attachment 4). The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. However, since the Permittee is not having any trouble meeting 10 mg/l, the previous limit will be retained with this renewal.

h. $CBOD_5$

Median discharge pH to be used:	7.3	Standard Units (S.U.)
		Basis: eDMR data
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 calculated summer limits above (see Attachment 4), which are the same as the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the summer limits and the winter limits are the same, the limits for $CBOD_5$ will be set year-round as in the previous NPDES Permit.

i. Dissolved Oxygen (DO)

- ☒ 4.0 mg/l - minimum desired in effluent to protect all aquatic life
- ☐ 5.0 mg/l - desired in effluent for CWF, WWF, or TSF
- ☐ 6.0 mg/l - minimum required due to discharge falling under guidance document 391-2000-014
- ☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 4) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency is set 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). The previous Dissolved Oxygen minimum was calculated as 4.0 mg/l, but was left at the previous minimum of 3.0 mg/l based on comments received.

j. Total Residual Chlorine (TRC)

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

Basis: The TRC limits above are technology-based using the TRC_Calc Spreadsheet (see Attachment 3). The measurement frequency is set 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). The instantaneous maximum of 1.2 mg/l that was set in previous renewals will be retained since it is being met.

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. Attachment List:

Attachment 1 - Topographical Map of the Facility Area

Attachment 2 - Aerial Map of the STP

Attachment 3 - TRC_Calc Spreadsheet

Attachment 4 - WQ Modeling Printouts

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 November 1, 2018 to October 31, 2019)

Parameter	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18
Flow (MGD) Average Monthly	0.002	0.001	0.001	0.001	0.003	0.002	0.001	0.003	0.002	0.002	0.009	0.0065
Flow (MGD) Daily Maximum	0.002	0.001	0.001	0.001	0.005	0.002	0.001	0.004	0.002	0.002	0.010	0.0074
pH (S.U.) Minimum	7.2	7.1	7.40	7.16	7.39	7.72	7.39	7.27	7.21	7.0	7.17	7.4
pH (S.U.) Maximum	7.3	7.2	7.61	7.32	7.62	8.19	7.79	7.61	7.34	7.4	7.37	7.5
DO (mg/L) Minimum	4.96	4.0	7.19	8.07	8.02	7.59	6.31	3.86	5.73	4.35	4.09	4.2
TRC (mg/L) Average Monthly	0.24	0.15	0.10	0.14	0.05	0.04	0.05	0.06	0.36	0.40	0.44	0.6
TRC (mg/L) Instantaneous Maximum	0.31	0.19	0.12	0.18	0.08	0.10	0.11	0.11	0.59	0.52	0.52	0.7
CBOD5 (mg/L) Average Monthly	2.2	2.4	3.7	5.5	2.2	11.2	3.2	6.0	25	2.4	6.2	4
TSS (mg/L) Average Monthly	3.0	3.0	6.0	7.5	4.5	6.0	4.5	15.0	30.5	8.5	6.5	18
Fecal Coliform (CFU/100 ml) Geometric Mean	1	1	1	1	1	1	1	1	1	1	1	< 21
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1	1	1	1	1	1	1	1	1	1	1	41
Ammonia (mg/L) Average Monthly	0.51	0.25	1.68	2.83	0.51	2.23	2.63	2.27	12.17	0.22	2.16	< 0.18

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	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	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	10000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection.

Flow is monitor only based on 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limits 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. 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.