pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**New**	Application No.	**PA0276294**
Facility Type	**Non-Municipal**	APS ID	**1008556**
Major / Minor	**Minor**	Authorization ID	**1300330**

Applicant and Facility Information

Applicant Name	**LT Realty, Inc.**	Facility Name	**Bethany Village Senior Living STP**
Applicant Address	150 Noble Lane	Facility Address	150 Noble Lane
	Bethany, PA 18431		Bethany, PA 18431
Applicant Contact	Laurie Alabovitz	Facility Contact	Thomas Beahan
Applicant Phone	(570) 251-3463	Facility Phone	(570) 251-3463
Client ID	354335	Site ID	825385
Ch 94 Load Status	N/A	Municipality	Dyberry Township
Connection Status	N/A	County	Wayne
Date Application Received	December 26, 2019	EPA Waived?	Yes
Date Application Accepted	December 26, 2019	If No, Reason	-

Purpose of Application: New NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting a new NPDES permit for discharge of 0.0065 MGD of treated sewage to an unnamed tributary to Dyberry Creek (eMap stream code 5990), a HQ-CWF/MF receiving stream in state water plan basin 01-B (Lackawaxen River) to serve the Bethany Village Senior Living Center. As per the Department's current existing use list, the receiving stream does not have an exising use classification that is more protective than its designated use. The receiving stream is not listed on PA Fish & Boat Commission's current list of stream sections supporting naturally reproducing populations of trout. WQM permit 6419402 was issued to the applicant on April 20, 2020 to construct the wastewater treatment plant (WWTP) associated with this discharge permit.

Bethany Village is an assisted living facility located on 19.5 acres in Dyberry Township and Bethany Borough, Wayne County. Common ownership of adjacent lands of LT Realty comprise an additional 45.5 acres. The facility is licensed by PA Department of Welfare for 70 beds (70 residents) and there were 52 permanent residents on the premises as of January 28, 2016. The existing sewage disposal method was an on-lot sand mound that was experiencing overloading problems. Water usage readings from daily flow monitoring indicated that average daily flow is 3,284 gpd and peak daily flow is 4,827 gpd (based on 52 residents).

Since the watershed is classified as High Quality (HQ), Section 93.4c. Implementation of Antidegradation Requirements of DEP's Chapter 93 Water Quality Standards is required. 93.4c.(b)(1)(i)(A) states: "A person proposing a new, additional or increased discharge to High Quality or Exceptional Value Waters shall evaluate nondischarge alternatives to the proposed discharge and use an alternative that is environmentally sound and cost-effective when compared with the cost of the proposed discharge. If a nondischarge alternative is not environmentally sound and cost-effective, a new, additional or increased discharge shall use the best available combination of cost-effective treatment, land disposal, pollution prevention and wastewater reuse technologies." A nondischarge alternative was determined to be not environmentally sound and cost-effective.

Approve	Deny	Signatures	Date
X		*Brian Burden* Brian Burden, E.I.T. / Project Manager	April 30, 2020
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	April 30, 2020

Summary of Review

Section 93.4c.(b)(1)(i)(B) states: "A person proposing a new, additional or increased discharge to High Quality or Exceptional Value Waters, who has demonstrated that no environmentally sound and cost-effective nondischarge alternative exists under clause (A), shall demonstrate that the discharge will maintain and protect the existing quality of receiving surface waters, except as provided in subparagraph (iii)."

As per subparagraph (iii): "The Department may allow a reduction of water quality in a High Quality Water if it finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the Commonwealth's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. A reduction in water quality will not be allowed under this subparagraph unless the discharger demonstrates that the High Quality Water will support applicable existing and designated water uses (other than the high quality and exceptional value uses) in § 93.3, Table 1 (relating to protected water uses)." It was determined that subparagraph (iii) applies to this scenario.

On March 25, 2016, DEP responded to the applicant's Preliminary Effluent Limitations (PEL) request for four discharge scenarios. The 0.0065 MGD limitations with Social or Economic Justification from DEP's PEL letter (attached) will be included in this permit. The discharge shall meet the Antidegradation Best Available Combination of Technologies (ABACT) limitations found in Appendix B of DEP's Water Quality Antidegradation Implementation Guidance (for WWTPs between 2,000 gpd and 50,000 gpd).

The Dissolved Oxygen ABACT requirement of 6.0 mg/L minimum was obtained from the Department's draft Permitting Guidance on developing effluent limitations for proposed dischargers to HQ or EV Waters (revised 9/17/2004).

Water Quality modeling assumed the point of first aquatic use to be at the point of discharge. The drainage area at the point of discharge in the unnamed tributary to Dyberry Creek was found to be 0.87 mi^2 using USGS's StreamStats interactive map delineation feature. Note that although the proposed outfall coordinates in the permit application differ from the coordinates provided in the PEL request by 1 second in both the latitude and longitude, the same drainage area was found when delineating. Stream gage 01429500 (Dyberry Creek near Honesdale, PA) is very close to the proposed discharge location. Using the last 25 years of gage data, the Low Flow Yield (LFY) was determined to be 0.067 cfs/mi^2 (Q_{7-10} = 4.35 cfs, Drainage Area = 64.6 mi^2), which provides a Q_{7-10} at discharge value of 0.058 cfs. Although this gage is close to the discharge location, it is located on a separate stream segment. Topographic maps and aerial photography show both similarities and differences in the upstream characteristics of both drainage basins. These assumptions are more conservative than stream flow estimated using the default LFY of 0.1 cfs/mi^2.

WQM 7.0 was run to determine if any water quality-based effluent limitations are necessary for $CBOD_5$, Ammonia-Nitrogen (NH_3-N) or Dissolved Oxygen. As shown on the attached results from the model, the water quality-based limitations for $CBOD_5$ and NH_3-N are not more stringent than those required by ABACT. Note that the standard 2x multipliers apply for IMAX limitations for each parameter with monthly average limitations.

Although the new WWTP will utilize ultraviolet radiation for disinfection, a Total Residual Chlorine (TRC) IMAX limitation of 0.02 mg/L is included in the permit in the event the permittee uses chlorine for cleaning purposes or for backup disinfection (see Part C.I.E.). The limitation is set at the Department's target quantitation limit (QL) for TRC, found in the permit application instructions document (doc. no. 3800-PM-BCW0342a, Rev. 6/2019).

Regarding potential thermal impacts to the cold-water receiving stream, the applicant's consultant offered the following explanation during the WQM permit review: "The existing septic facility has multiple in-ground septic tanks buried underground. Effluent is allowed to achieve ambient ground temperature (approximate 1-day detention time). The S.T.P. is an 11-foot deep tank with open grating. The effluent will be surrounded by steel tank at the background ground temperature. Duplex dose pump is a 9-foot deep wet-well and the Tertiary filter is enclosed in a building to prevent rapid temperature swings. The thermal impacts are mitigated because the effluent will be near the background baseflow groundwater temperature at the discharge point." Monthly in-stream temperature increase monitoring/reporting is included in the permit. The need for monitoring/limitations in subsequent permit terms will be determined with the data collected this term.

Had the facility not received SEJ approval for the stream discharge, limitations would have been included in the NPDES permit for Nitrate-Nitrite as N, Total Phosphorus, Total Dissolved Solids, Total Copper, Total Lead and Total Zinc. Monthly monitoring/reporting requirements for these parameters are included in this permit. Monthly monitoring/reporting

Summary of Review

requirements are also included in the permit for Total Nitrogen. To calculate Total Nitrogen, monthly monitoring/reporting is included for Total Kjeldahl Nitrogen.

The monitoring frequencies for all parameters with effluent limitations conform with the monitoring frequencies recommended in Table 6-3 of the Department's Technical Guidance for the Development and Specification of Effluent Limitations (doc. no. 362-0400-001).

Part C.I.G. is included in the permit requiring the permittee to develop SOPs related to the frequency of septic tank pumping and septic tank filter inspecting/cleaning. The permittee is required to inspect the existing septic tank on a semiannual basis (at least) for the first 2 years of permit coverage.

There are no open violations for the client that would warrant withholding the issuance of the permit. EPA waiver is in effect.


PEL WQ Protection Report.pdf


PEL Letter.pdf


Watershed Information.pdf


WQM Modeling.pdf

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0065
Latitude	41º 36' 32"	Longitude	-75º 16' 36"
Quad Name	Honesdale	Quad Code	0643
Wastewater Description:	Sewage Effluent		

Receiving Waters	Tributary 5990 of Dyberry Creek (HQ-CWF/MF)	Stream Code	5990
NHD Com ID	25925676	RMI	0.11
Drainage Area	0.87 mi^2	Yield (cfs/mi^2)	0.067
Q_{7-10} Flow (cfs)	0.058	Q_{7-10} Basis	Gage 01429500
Elevation (ft)	1188	Slope (ft/ft)	0.029
Watershed No.	1-B	Chapter 93 Class.	HQ-CWF, MF
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		Easton Area Water System	
PWS Waters	Delaware River	Flow at Intake (cfs)	1105
PWS RMI	109.8	Distance from Outfall (mi)	~125

Treatment Facility Summary

Treatment Facility Name: Bethany Village Senior Living STP

WQM Permit No.	Issuance Date
6419402	April 20, 2020

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Air / Pressure Filter	Ultraviolet radiation	0.0065

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0065	17.35	-	Sludge holding tank	Hauled (assumed)

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0065
Latitude 41º 36' 32" **Longitude** -75º 16' 36"
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
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)
	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)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

ABACT Limitations

The following ABACT limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	State Guidance
$CBOD_5$ (5/1 – 10/31)	10.0	Average Monthly	391-0300-002
	20.0	IMAX	
$CBOD_5$ (11/1 – 4/30)	20.0	Average Monthly	
	40.0	IMAX	
Total Suspended Solids	10.0	Average Monthly	391-0300-002
	20.0	Average Weekly	
NH_3-N (5/1 – 10/31)	3.0	Average Monthly	391-0300-002
	6.0	IMAX	
NH_3-N (11/1 – 4/30)	9.0	Average Monthly	
	18.0	IMAX	
Dissolved Oxygen	6.0	Minimum	Draft Permitting Guidance on Developing Effluent Limitations for Proposed Dischargers to HQ or EV Waters (revised 9/17/2004).

Best Professional Judgment (BPJ) Limitations

Parameter	Limit (mg/l)	SBC	Guidance/Basis
Total Residual Chlorine	0.02	IMAX	BPJ