pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0096164**
Facility Type	**Non-Municipal**	APS ID	**1012249**
Major / Minor	**Minor**	Authorization ID	**1306970**

Applicant and Facility Information

Applicant Name	**Guiher Thomas**	Facility Name	**Living Treasures II STP**
Applicant Address	PO Box 346	Facility Address	Route 711
	Donegal, PA 15628-0346		Donegal, PA 15628
Applicant Contact	Frank Krizner	Facility Contact	Nicole Weiers
Applicant Phone	724-454-6994	Facility Phone	724-672-4800
Client ID	95764	Site ID	251030
Ch 94 Load Status	Not Overloaded	Municipality	Donegal Township
Connection Status	No Limitations	County	Westmoreland
Date Application Received	February 28, 2020	EPA Waived?	Yes
Date Application Accepted	February 28, 2020	If No, Reason	

Purpose of Application: Renew NPDES Permit.

Summary of Review

The permittee has applied for a renewal of NPDES Permit No. PA0096164. The application was received by the PA Department of Environmental Protection (DEP) on February 28, 2020. NPDES Permit No. PA0096164 was previously issued on August 28, 2015. That permit expires on August 31, 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		David R. Ponchione / Project Manager /s/	March 10, 2020
x		Donald J. Leone, P.E. / Environmental Engineer Manager /s/	March 11, 2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.014
Latitude	40º 5' 14"	Longitude	-79º 20' 50"
Quad Name	Seven Springs	Quad Code	1811
Wastewater Description:	Sewage Effluent		
Receiving Waters	Indian Creek (HQ-CWF)	Stream Code	38235
NHD Com ID	69914993	RMI	20.7
Drainage Area	22.4	Yield (cfs/mi^2)	0.02538
Q_{7-10} Flow (cfs)	0.568	Q_{7-10} Basis	StreamStats (enclosed)
Elevation (ft)	1498.0	Slope (ft/ft)	0.00499
Watershed No.	19-E	Chapter 93 Class.	HQ-CWF
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Attaining Use(s)		

Changes Since Last Permit Issuance: Yield and Q7-10 Flow

Treatment Facility Summary

Treatment Facility Name: Living Treasures II STP

WQM Permit No.	Issuance Date
6574416	October 11, 1974

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration	No Disinfection	0.0026

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.014	40.85	Not Overloaded	Sludge Holding Tank	Hauled Off-site

Changes Since Last Permit Issuance: None

The STP consists of a comminutor, two aeration tanks, a clarifier, a dosing tank, two sand filters, a chlorinator, a chlorine contact tank, and a sludge holding tank.

Compliance History

DMR Data for Outfall 001 (from February 1, 2019 to January 31, 2020)

Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	0.0015	0.0026	0.0001	0.0002	0.00003	0.0004	0.0008	0.0001	0.0003	0.001	0.0001	0.000085
pH (S.U.) Minimum	7.3	7.2	6.9	6.7	6.8	6.6	6.5	6.8	6.8	6.9	7.2	7.0
pH (S.U.) Maximum	7.5	7.9	7.6	6.8	6.9	6.7	6.9	6.92	7.0	7.4	7.4	7.5
DO (mg/L) Minimum	7.3	6.8	6.4	6.1	6.1	6.1	6.3	6.0	6.0	6.1	8.0	8.3
TRC (mg/L) Average Monthly	0.22	0.30	0.30	0.32	0.5	0.36	0.2	0.24	0.3	0.32	0.34	0.15
TRC (mg/L) Instantaneous Maximum	0.3	0.36	0.36	0.41	0.5	0.41	0.7	0.4	0.4	0.42	0.39	0.19
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2
CBOD5 (mg/L) Instantaneous Maximum	2	4	2	2	< 2	< 2	2	< 2	2	< 2	2	< 2
TSS (mg/L) Average Monthly	< 2	< 2.5	< 3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
TSS (mg/L) Instantaneous Maximum	< 2	3	4	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1.76	< 1.4	2.9	1.41	< 1	< 1	7.5	79	3.41	5	< 1	3
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	3.1	2	4.1	2	< 1	1	8.6	1489	11.6	9	1	11
Total Nitrogen (mg/L) Daily Maximum		21.2										
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.16	< 0.1	< 0.1	< 0.10	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	0.21	< 0.1	< 0.1	< 0.10	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (mg/L) Daily Maximum		3.28										

Compliance History

Effluent Violations for Outfall 001, from: March 1, 2019 To: January 31, 2020

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	06/30/19	IMAX	1489	CFU/100 ml	1000	CFU/100 ml

Summary of Inspections: A compliance check was completed on March 10, 2020 and is attached. The permittee is in compliance and permit issuance is recommended.

Other Comments: The most recent inspection was conducted on November 6, 2019. The discharge was clear with no odors. A copy of the inspection report is attached.

The above flow data reveals flows are much lower than the plant's design capacity of 0.014 mgd. Page 2 of the NPDES application shows the annual average flow for year 2019 is only 400 gpd. The annual average flows for years 2018 and 2017 are 3,400 gpd and 2,500 gpd respectively.

This writer spoke with Mr. Matthew Dumbauld on March 9, 2020. Mr. Dumbauld is the co-owner/manager at the Living Treasures zoo/hotel. This writer questioned why flows in year 2019 were so much lower than previous years and if this was expected to be the new norm. I learned that they fired their former operator and hired CME Management approximately 1 ½ years ago. It is possible instantaneous flow rates are reported when samples are collected which do not reflect actual flow volumes over the entire day/month. Also, Mr. Dumbauld confirmed that 2019 was a slow year, the slowest in the past six years but visitor numbers prior to year 2019 are expected in the future. Water use records are available, but they use public and on-site well water and only public water usage is available. The hotel has 89 beds which are fully occupied on some weekends with an estimated 170 people staying at the hotel. Per Title 25, Chapter 73, hotels can be expected to generate 100 gpd per room. This would equate to 89 rooms x 100 gpd/room = 8,900 gpd. Four weekends and thus a total of 8 days per month computes to an average monthly flow of approximately 2,373 gpd assuming no flow is generated during the weekdays or from daily visitors that do not spend the night(s).

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.014
Latitude 40º 5' 14.00" **Longitude** -79º 20' 50.00"
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)
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)

Comments: The above effluent limitations are consistent with the previous NPDES permit except for the Total Residual Chlorine parameter (TRC).

The Average Monthly and Instantaneous Maximum (TRC) effluent limitations imposed in the previous NPDES permit are 1.4 mg/l and 3.3 mg/l, respectively. Those values were considered BAT limitations per the SWRO's TRC Implementation for Sewage Facilities Planning Section Interim Guidance, dated June 20, 1995 for an existing minor facility having a design flow <= 0.1 mgd permitted before July 1995. An average monthly limitation of 0.5 mg/l for TRC is now a regulatory standard under §§92a.47(a)(8) and 92a.48(b). Review of the Discharge Monitoring Reports reveal the plant consistently achieves the proposed average monthly limit of 0.5 mg/l therefore that limit will be imposed without a schedule.

The TRC_CALC model was run to make certain water quality-based limits are not necessary. The modeling results confirm that the proposed BAT limits are appropriate.

High Quality Stream Comments:

The original effluent limits imposed on the Living Treasures II STP are consistent with implementation plan standards used at that time. It appears they have been historically rolled over each time the NPDES permit was renewed.

DEP published the "Water Quality Anti-Degradation Implementation Guidance" on November 29, 2003. Anti-Degradation Best Available Combination of Technologies (ABACT) limits for STP's rated for design flows 2,000 gpd to 50,000 gpd are as follows:

CBOD5 (May 1 – Oct 31)	10 mg//
CBOD5 (Nov 1 – Apr 30)	20 mg/l
TSS	10 mg/l
Ammonia-Nitrogen (May 1 – Oct 31)	3.0 mg/l
Ammonia-Nitrogen (Nov 1 – Apr 30)	9.0 mg/l

For comparison purposes, the existing average monthly $CBOD_5$ effluent limit (10 mg/l) is more stringent during the period November 1 - April 30. Also, the plant currently has a Dissolved Oxygen (DO) limit of 5.0 mg/l and there is no ABACT limit for this parameter. These limitations will not be relaxed or removed because doing so would violate anti-backsliding regulations.

The plants existing TSS average monthly limit of 25 mg/l however; is less stringent. The TSS limit is not required to be changed to 10 mg/l because the treatment plant was constructed prior to the receiving stream being designated a high-quality cold-water fishery. High quality stream designations did not exist prior to 1979. The sewage treatment plant that was originally approved in 1974 is the same plant that exists today. A sand filter provides tertiary treatment. TSS effluent concentrations are consistently reported less than 5 mg/l, below the ABACT limit of 10 mg/l.

The Ammonia Nitrogen limits are the same.

WQM7.0 Analysis:

The Mountain Pines STP is located a short distance downstream from the Living Treasures II STP. NPDES Permit PA0034614, issued on February 6, 2020 authorizes discharge from the Mountain Pines STP. A water quality modeling analysis was performed for the Mountain Pines STP in January 2020 using WQM 7.0 which included the Living Treasures STP, Clifford Pritts STP (PA0098345) and Pleasant View MHP STP (PA00967333) because each plant discharges in the Indian Creek watershed. That modeling replaces the previous multiple discharge analyses done in 1997 for these four STP's. The 1997 evaluation was performed using the WQAM63 model which is now obsolete. Although the WQAM63 and WQM7.0 models compute the same effluent results if all input values are the same, the re-evaluation was necessary because more conservative stream flow data is now available and because the Mountain Pines STP now discharges directly to Indian Creek instead of a tributary to Indian Creek. The modeling was performed using discharge flows equal to each plant's design capacity. The basis for the low flow yield to develop the new Q_{7-10} flow is from StreamStats and is 0.02538 cfs/mi^2. The yield used in the 1997 analysis, based on PA Bulletin 12 gaging station No. 03082100 directly on Indian Creek, is 0.0406 cfs/mi^2. Although the resulting Q_{7-10} flow provides less dilution, there is enough assimilative capacity in the receiving stream to prevent any waste load allocations among the four plants. The water quality modeling output files are attached.

Monitoring Frequency Considerations

Permittee's are expected to monitor pH, DO and Total Residual Chlorine (TRC) daily to be consistent with current policy and Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations. Daily monitoring provides minimum assurance the facility is being operated properly. This is of particular importance because the receiving stream is considered a special protection stream. It appears the Department mistakenly overlooked placing daily monitoring requirements in the previous permit because policy was in place at that time to do so, nor was the permittee informed to plan accordingly for 1/day monitoring for this renewal cycle.

This renewal permit contains the daily monitoring requirements but is structured to give them until January 1, 2022 to implement. This should provide ample time to make the necessary arrangements and allows the monitoring to be done this renewal cycle. Although flows are well below the design capacity of the plant, the plant is not a small flow treatment facility and requires an operator to run the plant. Plant upsets can occur for an activated sludge plant if not properly operated. Proper attention to the plant is of concern because reported flows are much less than the capacity of the plant and operation may become difficult because it is oversized and likely receives surge flows (on weekends). As mentioned above, discharge is to special protection waters and daily monitoring for the pH, DO, and TRC parameters will provide additional assurance the facility is being operated properly.

DEP has in the past if circumstances warranted reduced sampling frequencies below 1/day if flows are consistently below 2,000 gpd for a minor treatment facility. That is because treatment facilities designed for a flow at or below 2,000 gpd are considered small flow treatment facilities which are exempt from daily sampling. Although a plant may not be designed as a SFTF, discharge flow volumes may represent those of a SFTF. However, as explained on page 4 of this fact sheet, flows consistently below 2,000 gpd are not guaranteed. Even during the slow year of 2019, the average monthly reported flow for December is 2,600 gpd. There are surely flows even greater than 2,600 gpd that offset low flow days in order to compute an average of 2,600 gpd. And once again, daily monitoring will help ensure the special protection stream is adequately protected.

An explanation why increased monitoring is imposed is explained to the permittee in the draft cover letter.

Modifications made to be consistent with current DEP policy:

- Effluent limitations for pH and DO are to be reported as "Instantaneous Minimum" in lieu of "Minimum".
- The units for Fecal Coliform are now "No./100 ml" in lieu of "CFU/100 ml".

Additional Considerations:

- A once per year Monitor and Report requirement for Total N and Total P was incorporated into the previous permit as per Chapter 92.a.61 and will be continued.
- Mass loading limits and influent monitoring are not applicable for non-publicly owned treatment works.
- The design flow of the sewage treatment plant is less than 0.1 mgd. For this reason, the permittee is not required to report influent and effluent concentrations for various parameters as listed in the NPDES application. Total Dissolved Solids and its major constituents are therefore not a concern at this time.

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 December 30, 2021.

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		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	2/month	Grab
Total Residual Chlorine (TRC)	XXX	XXX	0.5 Avg Mo	XXX	XXX	1.6	4/month	Grab

Compliance Sampling Location: Outfall 001

Other Comments: Existing sampling procedures are authorized to be used until January 1, 2022.

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: January 1, 2022 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		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	0.5 Avg Mo	XXX	XXX	1.6	1/day	Grab

Compliance Sampling Location: Outfall 001

Other Comments: Beginning January 1, 2022 the plant will be required to be manned on a daily basis, including weekends or have automated sampling equipment.

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)	0.014	XXX	XXX	XXX	XXX	XXX	2/month	Measured
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	10.0	XXX	25.0	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
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	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

PA0096164 Pol Rep