

Application Type Renewal
Facility Type Non-Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0060186
APS ID 613253
Authorization ID 1186397

Applicant and Facility Information

Applicant Name	<u>Elk Meadows Homeowners Association Inc.</u>	Facility Name	<u>Elk Meadows Association STP</u>
Applicant Address	<u>160 Lake Drive</u> <u>Union Dale, PA 18470-7294</u>	Facility Address	<u>Lake Drive</u> <u>Uniondale, PA 18470</u>
Applicant Contact	<u>Daniel Bauwens</u>	Facility Contact	<u>Markey Thomas</u>
Applicant Phone	<u>(610) 331-2882</u>	Facility Phone	<u>(570) 689-5660</u>
Client ID	<u>160091</u>	Site ID	<u>743804</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Herrick Township</u>
Connection Status	<u>!</u>	County	<u>Susquehanna</u>
Date Application Received	<u>June 8, 2017</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>June 16, 2017</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of NPDES Permit</u>		

Summary of Review

This is a **0.023** MGD Nonmunicipal STP discharging to UNT to East Branch Tunkhannock Township (HQ-CWF Existing Use; Designated Class A Wild Trout; Stream Code# 29081).

Background:

- Annual Average Daily Flows were 0.010 (2016), 0.010 (2015), and 0.012 (2014). Highest 2016 monthly average flow was 0.027 MGD (April).
- **Applicant indicated the STP does not have a 911 site address or other street number.**

Part C Special Conditions:

- **Part C.I.A, B, C and D:** Existing Standard conditions (Stormwater prohibition, Necessary property rights; Residuals Management, **Planning**)
- **Part C.I.E:** Existing Dry stream condition.
- **Part C.I.F:** **New standard chlorine minimization condition**
- **Part C.I.G:** Existing Changes in Stream/Discharge condition
- **Part C.II:** **New Standard solids management conditions**

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*,

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	August 6, 2019
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Summary of Review

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)	.023
Latitude	41° 44' 29.28"	Longitude	-75° 31' 57.15"
Quad Name	Clifford	Quad Code	0541 (2.21.1)
Wastewater Description: Sewage Effluent			
Receiving Waters	Unnamed Tributary of East Branch Tunkhannock Creek	Stream Code	29081
NHD Com ID	66395311	RMI	-
Drainage Area	0.15 square mile	Yield (cfs/mi ²)	0.0350
Q ₇₋₁₀ Flow (cfs)	0.00525 CFS (~3,393 GPD)	Q ₇₋₁₀ Basis	LFY Method below confluence with East Branch
Elevation (ft)	~1815 Feet	Slope (ft/ft)	-
Watershed No.	4-F	Chapter 93 Class.	CWF, MF
Existing Use	HQ-CWF (HIGH QUALITY-COLD WATER FISHES)	Existing Use Qualifier	Designated Class A Wild Trout
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
<u>Background/Ambient Data:</u> None available		<u>Data Source:</u> None available	
pH (SU)	-		-
Temperature (°F)	-		-
Hardness (mg/L)	-		-
Other:	-		-
<u>Nearest Downstream Public Water Supply Intake</u>		PA AMER WATER CO NESBITT DIV, ID# 101800-001 (West Pittston, Luzerne County) per E-maps.	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	>10 miles

Changes Since Last Permit Issuance: None known.

Other Comments:

- Dry Stream Discharge is at Headwater to UNT (i.e. little to no dilution at Outfall location). This is a 6.77:1 effluent-dominated stream at low flow conditions (i.e. the stream is the discharge at the outfall location and reason there is a perennial stream at this location). In comparison, the DRBC classifies any stream with less than 0.1 CFS (~0.0646 MGD) flow as an intermittent stream. Original permitting assumed first point of use by aquatic life at downstream pond (~0.43 miles downstream of discharge point).
- 8/1/2019 DEP Biologist E-mail (Tim Daley) indicated 7/25/2019 site visit confirmed that the stream was dry at the discharge and upstream. He indicated there was not reason to change the Point of First Use from previous permitting (small downstream pond).

- Downstream East Branch to Tunkhannock Creek (HQ-CWF; Designated Class A Wild Trout; Stream Code# 29081) is designated as a Natural Trout Reproduction stream (confluence about 1.16 miles downstream of outfall discharge point).
- DEP has evaluated information indicating that the existing use of the receiving waters is different than the designated use under 25 Pa. Code § 93.9. In developing the draft NPDES permit, DEP is proposing to protect the existing use of the receiving waters. Following DEP's notice of the receipt of the application and the draft permit in the Pennsylvania Bulletin, DEP will accept written comments during the public comment period regarding DEP's tentative determination to protect the existing use. DEP will make a final determination on existing use protection for the receiving waters as part of the final permit action.

Treatment Facility Summary				
Treatment Facility Name: Elk Meadows Assoc STP				
WQM Permit No.	Issuance Date	Scope		
5879403	-	Sewer collection system		
5883404	9/12/1983	Upgrade to 0.023 MGD capacity STP. Permit explicitly voided 8/29/1979 WQM Part II ID# 5879402 (0.015 MGD STP never built).		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended aeration with sand filter	Chlorine	0.023
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.023	25	Not Overloaded	None	Disposal

Changes Since Last Permit Issuance: None known

Other Comments:

Application STP Description: Comminutor then main aeration then clarifier to post-aeration, plate settling to sand filters to disinfection. Aeration is provided by two roots blowers that are connected to times and activating relay. Application indicated provisions for bypassing exist, but have not been used and with no plans for use.

Sludge was disposed at Wyoming Valley Sewer Authority in May 2018. No disposal since up to June 2019 DMR submittal.

Compliance History

DMR Data for Outfall 001 (from June 1, 2018 to May 31, 2019)

Parameter	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18
Flow (MGD) Average Monthly	0.015	0.020	0.004	0.013	0.017	0.021	0.027	0.020	0.018	0.017	0.011	0.005
Flow (MGD) Daily Maximum	0.038	0.031	0.008	0.026	0.034	0.039	0.038	0.038	0.034	0.050	0.040	0.010
pH (S.U.) Minimum	6.8	6.8	6.9	7.0	6.9	7.0	6.8	6.7	6.9	6.9	6.8	6.9
pH (S.U.) Maximum	6.9	7.0	7.2	7.1	7.2	7.4	7.1	7.0	7.0	7.2	7.0	7.1
DO (mg/L) Minimum	7.0	8.4	9.8	9.0	8.2	8.7	8.0	7.2	7.1	7.4	7.4	7.9
TRC (mg/L) Average Monthly	0.3	0.2	0.3	0.3	< 0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
TRC (mg/L) Instantaneous Maximum	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
CBOD5 (mg/L) Average Monthly	3.0	< 3.0	30.0	12.0	< 3.0	< 3.0	< 3.0	5.0	< 3.0	< 3.0	< 3.0	< 3.0
TSS (mg/L) Average Monthly	3.0	8.0	16.0	10.0	4.0	12.0	14.0	< 4.0	< 4.0	< 4.0	< 3.0	9.3
Fecal Coliform (CFU/100 ml) Geometric Mean	< 61	4	> 348	> 600	250	132	224	480	11	< 30	< 48	< 4
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	930	< 4	8800	> 600	250	132	224	480	11	224	570	< 4
Ammonia (mg/L) Average Monthly	< 1.0	3.6	21.0	7.1	< 1.0	< 1.0	< 1.0	2.4	< 1.0	< 1.0	< 1.0	< 1.0

DMR Data for Outfall 001 (from June 1, 2016 to May 31, 2017)

Parameter	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16	JUL-16	JUN-16
Flow (MGD) Average Monthly	0.016	0.023	0.019	0.016	0.017	0.013	0.007	< 0.006	0.003	0.008	0.004	0.004
Flow (MGD) Daily Maximum	0.034	0.037	0.040	0.028	0.023	0.018	0.022	< 0.015	0.005	0.021	0.005	< 0.006
pH (S.U.) Minimum	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.9	6.6	6.7	6.8	6.8
pH (S.U.) Maximum	7.2	6.9	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.1	7.1	< 7.5
DO (mg/L) Minimum	8.1	9.2	9.1	8.9	8.1	7.7	7.6	7.5	7.0	7.0	7.0	8.6
TRC (mg/L) Average Monthly	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	< 0.3	0.3
TRC (mg/L) Instantaneous Maximum	0.5	0.3	0.4	0.4	0.4	0.7	0.5	0.4	0.3	0.4	0.5	0.4
CBOD5 (mg/L) Average Monthly	9.0	9.0	5.0	< 3.0	3.0	< 3.0	< 3.0	< 3.0	8.0	13.0	< 3.0	3.0
TSS (mg/L) Average Monthly	16.0	20.0	5.0	< 4.0	< 4.0	7.0	9.0	< 5.0	< 4.0	15.0	< 4.0	4.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 157	1960	1920	20	46	108	29	96	4	116	< 4	136
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 157	1960	1920	20	45	108	29	96	4	312	< 4	136
Ammonia (mg/L) Average Monthly	1.8	1.4	2.9	3.0	8.2	2.8	1.2	< 1.0	2.7	< 1.0	< 1.7	1.4

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2018 To: June 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit	Units
CBOD5	03/31/19	Avg Mo	30.0*	mg/L	25.0	mg/L
Ammonia	03/31/19	Avg Mo	21.0*	mg/L	12.0	mg/L
Fecal Coliform	6/30/19	IMAX	1270**	CFU/100 ml	1000	CFU/100 ml

*blamed on "extreme temperatures" per Facilities Screen. Spiking of fecal coliforms also.

**blamed on equipment malfunction.

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT	
					DESC	INSPECTOR ID
ELK MEADOWS HOMEOWNERS ASSOC STP	WPCNP	2507771	06/13/2016	Compliance Evaluation	No Violations Noted	00512922

Other Comments:

Timely renewal application, therefore NPDES permit is administratively extended.

Sludge was disposed at Wyoming Valley Sewer Authority in May 2018. No disposal since up to June 2019 DMR submittal.

8/6/2019 WMS Query Open Violations by Permit Number: One open Safe Drinking Water Program violation:

CLIENT	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION
ELK MEADOWS HOMEOWNERS ASSN INC	Safe Drinking Water	2580042	2816669	836646	12/18/2018	FAILURE OF AN OWNER TO SUBMIT ANNUAL OPERATOR CERTIFICATION SYSTEM FEE

Development of Effluent Limitations

Outfall No. 001 Design Flow (MGD) .023
 Latitude 41° 44' 28.55" Longitude -75° 31' 56.69"
 Wastewater Description: Sewage Effluent

Permit Limits and Monitoring: Changes bolded (CHECK)

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	Report Lbs/d 25.0 Report 50.0	Monthly Average Monthly Average Daily Max IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. Application data indicated max of 9.0 mg/l and average of 8.3 mg/l (3 samples). See also EDMR data. See Compliance section for violation.
TSS	Report Lbs/d 30.0 Report 60.0	Monthly Average Monthly Average Daily Max IMAX	Existing Technology limit (Chapter 92a.47). Application data indicated max of 15.0 mg/l and average of 11.3 mg/l (number of samples not identified). See also EDMR data.
pH	6.0 – 9.0 SU	Inst. Min - IMAX	Existing Technology limit (Chapter 92a.47) Application data was 6.6 – 7.5 SU (3 samples). See also EDMR data.
Dissolved Oxygen (DO)	7.0	Inst. Minimum	Existing permit limit based on water quality modeling and normal treated sewage DO concentration. No Application data. See also EDMR data.
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) Application data of max of 250/100 ml and average of 176/100 ml (3 samples). See EDMR data. See Compliance section for violation.
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above.
Total Residual Chlorine	0.30 0.70	Monthly Average IMAX	Existing TRC Limits are more protective than Chapter 92a.48 TBEL. Significant digit added. Dry Stream conditions means updated water quality modeling is not required. Application data was max 0.7 mg/l and average of 0.6 mg/l (3 samples). See EDMR data.
Ammonia-Nitrogen (May 1 - Oct 31)	Report Lbs/d 4.0 Report 8.0	Monthly Average Monthly Average Daily Max IMAX	Existing Ammonia-N limits. Application data was max 8.1 mg/l and average of 4.9 mg/l (3 samples). See EDMR data. See Compliance section for violation.
Ammonia-Nitrogen (Nov 1 - Apr 30)	Report Lbs/d 12.0 Report 24.0	Monthly Average Monthly Average Daily Max IMAX	See above.

Total Phosphorus	Report Lbs/d Report Report	Annual Average Annual Average Daily Max	Annual nutrient monitoring (Chapter 92a.61). Application data was 1.4 mg/l (1 sample).
Total Nitrogen (Nitrate-Nitrite-N + TKN measured in same sample)	Report Lbs/d Report Report	Annual Average Annual Average Daily Max	Annual nutrient monitoring (Chapter 92a.61). Application data was 4.14 mg/l (1 sample).

Comments:

- Outfall No. 001 Sampling Point: Chlorine Contact Tank discharge.
- Monitoring Frequencies: Updated to standard 1/day and 2/month frequencies. Annual monitoring for nutrients. Units updated for grab sampling (Instantaneous Minimum) and #/100 ml for fecal coliforms.
- Additional Reporting: Mass loadings and daily max reporting added. No additional sampling required.
- Water Quality Modeling: Existing permit limits are adequately protective.
 - Dry Reach (Outfall to small downstream pond point of first use): Modeled with 0.001 LFY and existing permit limits to determine CBOD5, DO, and Ammonia-N subreach concentrations at point of first use (Wet Reach). Subreach results were 3.29 mg/l CBOD5, 0.45 mg/l Ammonia-N, and 7.54 mg/l DO.
 - Wet Reach (pond to confluence with larger stream): Used Subreach concentrations as inputs. Model Output showed above Subreach Input values are adequately protective as recommended limits.
 - Due to dry stream discharge, TRC water quality modeling was not needed as there is no direct discharge to a stream during low flow conditions. Existing TRC permit limits and Chlorine minimization condition will help protect life during high flow/wet weather conditions when intermittent flows might occur closer to Outfall.
- **Antidegradation: No additional degradation is expected in the absence of any new or increased or additional stream loading. Stream was classified HQ after facility came into existence (based on 2006 Basin determination), i.e. existing NPDES permitted facility loading is grandfathered. Water quality modeling indicated existing permit limits are adequately protective.**

Dry Reach

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name		
04F	29081	Trib 29081 to E Br Tunkhannock Cr		
<u>RM</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>
1.310	0.023	24.979		7.000
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>
1.939	0.314	6.167		0.059
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>
24.90	1.498	1.35		1.027
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>
7.005	31.034	Owens		6
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
1.074	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.107	20.34	1.20	6.26
	0.215	16.62	1.08	6.60
	0.322	13.57	0.97	6.91
	0.430	11.09	0.87	7.17
	0.537	9.06	0.78	7.38
	0.644	7.40	0.69	7.54
	0.752	6.04	0.62	7.54
	0.859	4.94	0.56	7.54
	0.967	4.03	0.50	7.54
	1.074	3.29	0.45	7.54

← existing permit limit assumed at discharge.

← wet reach inflow

Wet Reach
 (Subreach inputs)

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
04F		29081		Trib 29081 to E Br Tunkhannock Cr			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.280	Elk M Assn	PA0060186	0.023	CBOD5	3.29		
				NH3-N	0.45	0.9	
				Dissolved Oxygen			7.54

limits = sub reach input
 from dry reach modeling