pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0239551** |
| Facility Type | **Non-Municipal** | APS ID | **1071799** |
| Major / Minor | **Minor** | Authorization ID | **1411065** |

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Erin & Michael Cuprinka** | Facility Name | **Cuprinkas Highlands Camp** |
| Applicant Address | 1665 Big Bend Road | Facility Address | 263 Big Bend Road |
| | Emlenton, PA 16373-7403 | | Emlenton, PA 16373-7001 |
| Applicant Contact | Erin Cuprinka | Facility Contact | |
| Applicant Phone | (814) 657-4285 | Facility Phone | |
| Applicant W Mail | erincuprinka@hotmail.com | Facility E Mail | |
| Client ID | 363749 | Site ID | 261683 |
| Municipality | Scrubgrass Township | County | Venango |
| Ch 94 Load Status | **N/A** | Connection Status | **Not built** |
| Date Application Received | September 20, 2022 | EPA Waived? | Yes |
| Date Application Accepted | September 28, 2022 | If No, Reason | |

Purpose of Application: NPDES treated sewage discharge permit renewal.

## Summary of Review

Facility is not built with no known violations or need for sludge removal.

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 | | *William H. Mentzer*<br>William H. Mentzer, P.E.<br>Environmental Engineering Specialist | September 28, 2022 |
| X | | vacant<br>Environmental Engineer Manager | Okay to Draft<br>11/16/2022 |

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.015 |
| Latitude | 41º 11' 42.60" | Longitude | -79º 46' 44.90" |
| Latitude | 41º 11' 42.28" | Longitude | -79º 46' 45.38" |
| Quad Name | Eau Claire | Quad Code | 0907 |
| Wastewater: | Treated campground domestic wastes. | | |

| | | | |
|---|---|---|---|
| Receiving Waters | Little Scrubgrass Creek | Stream Code | 51196 |
| NHD Com ID | 100479737 | Node RMI | 0.27 (RMI 2.58) |
| Drainage Area | 22.0 | Yield (cfs/mi$^2$) | 0.051 |
| $Q_{7-10}$ Flow (cfs) | 1.13 | $Q_{7-10}$ Basis | Sandy & E Sandy Creeks |
| Elevation (ft) | 1103.22 | Slope (ft/ft) | 0.01623 |
| Watershed No. | 16-G | Chapter 93 Class. | CWF |
| Existing Use | Statewide | Existing Use Qualifier | none |
| Exceptions to Use | none | Exceptions to Criteria | none |
| Comments | Discharge is 0.27 miles above an unnamed tributary | | |

| | | | |
|---|---|---|---|
| Assessment Status | Impaired | | |
| Impairment Cause | Metals | | |
| Impairment Source | Abandoned Mine Drainage | | |
| TMDL Status | Final 5/15/2007 | Name | Little Scrubgrass |
| Comment | TMDL Metal monitoring for Al, Fe, and Mn should be added | | |

| Background/Ambient Data | | Data Source |
|---|---|---|
| pH (SU) | 7.5 | default |
| Temperature (°C) | 20 | default |
| Hardness (mg/L) | 100 | default |
| Total Aluminum (PPD): | 5 | TMDL near mouth |
| Total Iron (PPD) | 37.9 | TMDL near mouth |
| Total Manganese (PPD) | 132.6 | TMDL near mouth |

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | | Emlenton Water Cmpany | |
| PWS Waters | Allegheny River | Flow at Intake (cfs) | 1250 cfs upstream |
| PWS RMI | 90.57 | Distance from Outfall (mi) | 19.87 |

Changes Since Last Permit Issuance: none

Other Comments:

Low flow is the mean of the USGS stations at Van and Sheakleyville
The Allegheny River has a 1250-cfs minimum regulated stream flow upstream in Franklin, Pa.
TMDL background concentrations are not clearly stated and hardness does not seem to have been reviewed. Aluminum and Iron do not appear to require reduction while the manganese should be reduced to 47.7-PPD for basin TMDL WLA compliance.

**Treatment Facility Summary**

**Treatment Facility Name:** Westminster Highlands Camp

| WQM Permit No. | Issuance Date |
|---|---|
| 6195401 | 9 June 2005 |
| | |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | secondary | Septic tank sand filter | hypochlorite | 0.01 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.015 | 19.0 | proposed | Anaerobic digestion | other |

Changes Since Last Permit Issuance: none

The water quality management permit is dated 9 June 2005, revised on 3 August 2005, and issued on 19 September 2005 for 14-septic tanks, common dosing tank, two alternating (40 by 130 foot) 5 200 square foot sand filter beds comprising a (80 by 130 foot) 10 400 square foot intermittent sand filter and chlorination with a 345 gallon contact tank. The design load is 19 PPD, 0.010-MGD mean flow, and 0.015-MGD hydraulic flow.

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** .015
**Latitude** 41º 11' 42.60" **Longitude** -79º 46' 44.90"
**Wastewater Description:** Treated campground domestic wastes.

### 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) |

Comments: None

### Water Quality-Based Limitations

Sufficient dilution is present for secondary sewage treatment.

Backsliding s not appropriate

## Input Data WQM 7.0

| SWP Basin | Stream Code | Stream Name | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope (ft/ft) | PWS Withdrawal (mgd) | Apply FC |
|---|---|---|---|---|---|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK | **2.580** | 1103.22 | 22.00 | 0.00000 | 0.00 | ☑ |

### Stream Data

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10** | 0.051 | 0.00 | 0.00 | 0.000 | 0.000 | 0.0 | 0.00 | 0.00 | 20.00 | 7.00 | 0.00 | 0.00 |
| **Q1-10** | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| **Q30-10** | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

### Discharge Data

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| Cuprinkas HC | PA0239551 | 0.0150 | 0.0150 | 0.0150 | 0.000 | 25.00 | 7.00 |

### Parameter Data

| Parameter Name | Disc Conc (mg/L) | Trib Conc (mg/L) | Stream Conc (mg/L) | Fate Coef (1/days) |
|---|---|---|---|---|
| CBOD5 | 25.00 | 2.00 | 0.00 | 1.50 |
| Dissolved Oxygen | 4.00 | 8.24 | 0.00 | 0.00 |
| NH3-N | 25.00 | 0.10 | 0.00 | 0.70 |

## Input Data WQM 7.0

| SWP Basin | Stream Code | Stream Name | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope (ft/ft) | PWS Withdrawal (mgd) | Apply FC |
|---|---|---|---|---|---|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK | **0.000** | 872.64 | 258.00 | 0.00000 | 0.00 | ☑ |

### Stream Data

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10** | 0.051 | 0.00 | 0.00 | 0.000 | 0.000 | 0.0 | 0.00 | 0.00 | 20.00 | 7.00 | 0.00 | 0.00 |
| **Q1-10** | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| **Q30-10** | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

### Discharge Data

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| | | 0.0000 | 0.0000 | 0.0000 | 0.000 | 25.00 | 7.00 |

### Parameter Data

| Parameter Name | Disc Conc (mg/L) | Trib Conc (mg/L) | Stream Conc (mg/L) | Fate Coef (1/days) |
|---|---|---|---|---|
| CBOD5 | 25.00 | 2.00 | 0.00 | 1.50 |
| Dissolved Oxygen | 3.00 | 8.24 | 0.00 | 0.00 |
| NH3-N | 25.00 | 0.00 | 0.00 | 0.70 |

# WQM 7.0 Hydrodynamic Outputs

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK |

| RMI | Stream Flow (cfs) | PWS With (cfs) | Net Stream Flow (cfs) | Disc Analysis Flow (cfs) | Reach Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Reach Trav Time (days) | Analysis Temp (°C) | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10 Flow** | | | | | | | | | | | | |
| 2.580 | 1.12 | 0.00 | 1.12 | .0232 | 0.01693 | .555 | 16.23 | 29.24 | 0.13 | 1.241 | 20.10 | 7.00 |
| **Q1-10 Flow** | | | | | | | | | | | | |
| 2.580 | 0.72 | 0.00 | 0.72 | .0232 | 0.01693 | NA | NA | NA | 0.10 | 1.583 | 20.16 | 7.00 |
| **Q30-10 Flow** | | | | | | | | | | | | |
| 2.580 | 1.53 | 0.00 | 1.53 | .0232 | 0.01693 | NA | NA | NA | 0.15 | 1.048 | 20.07 | 7.00 |

# WQM 7.0 Modeling Specifications

| | | | |
|---|---|---|---|
| Parameters | Both | Use Inputted Q1-10 and Q30-10 Flows | ☑ |
| WLA Method | EMPR | Use Inputted W/D Ratio | ☐ |
| Q1-10/Q7-10 Ratio | 0.64 | Use Inputted Reach Travel Times | ☐ |
| Q30-10/Q7-10 Ratio | 1.36 | Temperature Adjust Kr | ☑ |
| D.O. Saturation | 95.00% | Use Balanced Technology | ☑ |
| D.O. Goal | 6 | | |

# WQM 7.0 Wasteload Allocations

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK |

## NH3-N Acute Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 2.580 | Cuprinkas HC | 16.54 | 50 | 16.54 | 50 | 0 | 0 |

## NH3-N Chronic Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 2.580 | Cuprinkas HC | 1.88 | 25 | 1.88 | 25 | 0 | 0 |

## Dissolved Oxygen Allocations

| RMI | Discharge Name | CBOD5 | | NH3-N | | Dissolved Oxygen | | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple (mg/L) | | |
| 2.58 | Cuprinkas HC | 25 | 25 | 25 | 25 | 4 | 4 | 0 | 0 |

# WQM 7.0 D.O.Simulation

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK |

| RMI | Total Discharge Flow (mgd) | Analysis Temperature (°C) | Analysis pH |
|---|---|---|---|
| 2.580 | 0.015 | 20.101 | 7.000 |
| **Reach Width (ft)** | **Reach Depth (ft)** | **Reach WDRatio** | **Reach Velocity (fps)** |
| 16.234 | 0.555 | 29.240 | 0.127 |
| **Reach CBOD5 (mg/L)** | **Reach Kc (1/days)** | **Reach NH3-N (mg/L)** | **Reach Kn (1/days)** |
| 2.47 | 0.153 | 0.60 | 0.705 |
| **Reach DO (mg/L)** | **Reach Kr (1/days)** | **Kr Equation** | **Reach DO Goal (mg/L)** |
| 8.157 | 20.485 | Tsivoglou | 6 |
| **Reach Travel Time (days)** | | | |
| 1.241 | | | |

**Subreach Results**

| TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L) |
|---|---|---|---|
| 0.124 | 2.42 | 0.55 | 8.24 |
| 0.248 | 2.37 | 0.51 | 8.24 |
| 0.372 | 2.33 | 0.46 | 8.24 |
| 0.496 | 2.28 | 0.43 | 8.24 |
| 0.620 | 2.24 | 0.39 | 8.24 |
| 0.745 | 2.20 | 0.36 | 8.24 |
| 0.869 | 2.16 | 0.33 | 8.24 |
| 0.993 | 2.12 | 0.30 | 8.24 |
| 1.117 | 2.08 | 0.27 | 8.24 |
| 1.241 | 2.04 | 0.25 | 8.24 |

# WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51196 | LITTLE SCRUBGRASS CREEK |

| 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) |
|---|---|---|---|---|---|---|---|
| 2.580 | Cuprinkas HC | PA0239551 | 0.015 | CBOD5 | 25 | | |
| | | | | NH3-N | 25 | 50 | |
| | | | | Dissolved Oxygen | | | 4 |

| 1A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 2 | **TRC EVALUATION** | | | | | |
| 3 | **Input appropriate values in B4:B8 and E4:E7** | | | | | |
| 4 | 1.13 | **= Q stream (cfs)** | | **0.5** | **= CV Daily** | |
| 5 | 0.015 | **= Q discharge (MGD)** | | **0.5** | **= CV Hourly** | |
| 6 | 30 | **= no. samples** | | **1** | **= AFC_Partial Mix Factor** | |
| 7 | 0.3 | **= Chlorine Demand of Stream** | | **1** | **= CFC_Partial Mix Factor** | |
| 8 | | **= Chlorine Demand of Discharge** | | **15** | **= AFC_Criteria Compliance Time (min)** | |
| 9 | **0.5** | **= BAT/BPJ Value** | | **720** | **= CFC_Criteria Compliance Time (min)** | |
| | 0 | **= % Factor of Safety (FOS)** | | | **=Decay Coefficient (K)** | |
| 10 | Source | Reference | AFC Calculations | | Reference | CFC Calculations |
| 11 | TRC | **1.3.2.iii** | WLA afc = 15.553 | | **1.3.2.iii** | WLA cfc = 15.156 |
| 12 | PENTOXSD TRG | **5.1a** | LTAMULT afc = 0.373 | | **5.1c** | LTAMULT cfc = 0.581 |
| 13 | PENTOXSD TRG | **5.1b** | LTA_afc= 5.795 | | **5.1d** | LTA_cfc = 8.811 |
| 14 | | | | | | |
| 15 | Source | | Effluent Limit Calculations | | | |
| 16 | PENTOXSD TRG | **5.1f** | AML MULT = 1.231 | | | |
| 17 | PENTOXSD TRG | **5.1g** | AVG MON LIMIT (mg/l) = 0.500 | | BAT/BPJ | |
| 18 | | | INST MAX LIMIT (mg/l) = 1.635 | | | |

| | |
|---|---|
| WLA afc | **(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)** |
| LTAMULT afc | EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5) |
| LTA_afc | wla_afc*LTAMULT_afc |
| **WLA_cfc** | **(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc) )...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)** |
| LTAMULT_cfc | EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5) |
| **LTA_cfc** | wla_cfc*LTAMULT_cfc |
| AML MULT | EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1)) |
| AVG MON LIMIT | MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT) |
| INST MAX LIMIT | **1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)** |

**(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....**
**....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)**

Chlorine Required = Chlorine Demand + Chlorine Residual

**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 Inst Min | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 4.0 Daily Min | XXX | XXX | XXX | 1/day | Grab |
| TRC | XXX | XXX | XXX | 0.5 | XXX | 1.6 | 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 |
| E. Coli | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | 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 | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Ammonia | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Total Phosphorus | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Total Aluminum | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Total Iron | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Total Manganese | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |

Compliance Sampling Location: Outfall 001 after disinfection