pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHEAST REGIONAL OFFICE
CLEAN WATER PROGRAM

NPDES PERMIT 2nd FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0061662**
Facility Type	**Non-Municipal**	APS ID	**633140**
Major / Minor	**Minor**	Authorization ID	**1062452**

Applicant and Facility Information

Applicant Name	**Arrowhead Sewer Co. Inc.**	Facility Name	**Arrowhead Sewer**
Applicant Address	961 Arrowhead Drive	Facility Address	2236 Lehigh Drive
	Pocono Lake, PA 18347-7856		Pocono Lake, PA 18347
Applicant Contact	Eric Usbeck	Facility Contact	Joseph Rehm
Applicant Phone	(570) 643-8126	Facility Phone	(570) 643-8126
Client ID	148524	Site ID	544319
Ch 94 Load Status		Municipality	Coolbaugh Township
Connection Status		County	Monroe
Date Application Received	March 3, 2020	EPA Waived?	Yes
Date Application Accepted	March 10, 2020	If No, Reason	
Purpose of Application	RENEWAL OF EXISTING NPDES PERMIT.		

Summary of Review

This second fact sheet is prepared after comments were received from the applicant requesting additional toxic resampling for copper, lead and zinc. 10 samples were resubmitted with the average value of Copper (0.023 mg/l), Lead (0.0002 mg/l), and Zinc 0.051 mg/l). The modelling results indicate no limits. Monitoring for copper and zinc will continue. This modification will require a second draft and public notification.

The applicant is requesting the renewal of their NPDES permit to discharge up to 0.525 MGD of treated sewage into Lehigh River (HQ-CWF), located in State Water Plan watershed 2-A which is classified for High Quality Waters - Cold Water Fishes, aquatic life, water supply and recreation in the Upper Lehigh watershed. As per the Department's current existing use list, the receiving stream has an EV (Exceptional Value) existing use classification that is more protective than the designated use. The discharge is not expected to affect public water supplies.

The CBOD5 (11/1 to 4/30), TSS, TRC, and pH limits were technology based. The CBOD5 (5/1 to 10/31), NH3N, fecal coliform, Phosphorus, and dissolved oxygen (DO) limits were water quality based. Quarterly monitoring for TDS, Total Copper and Total Zinc will continue. The applicant uses UV with chlorine as a backup. The present TRC limits will be retained and reported daily only when utilized.

The WMS Report query “Water Management System Inspections” was run. On 08/04/2020 an Administrative/File Review was done with No Violations noted.

The WMS “Open Violations by Client Report" was run and there is one open violation on 06/11/2020 for 92A.47(C) NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO).

The Existing Permit expires on August 31, 2020 and the renewal was submitted March 3, 2020.

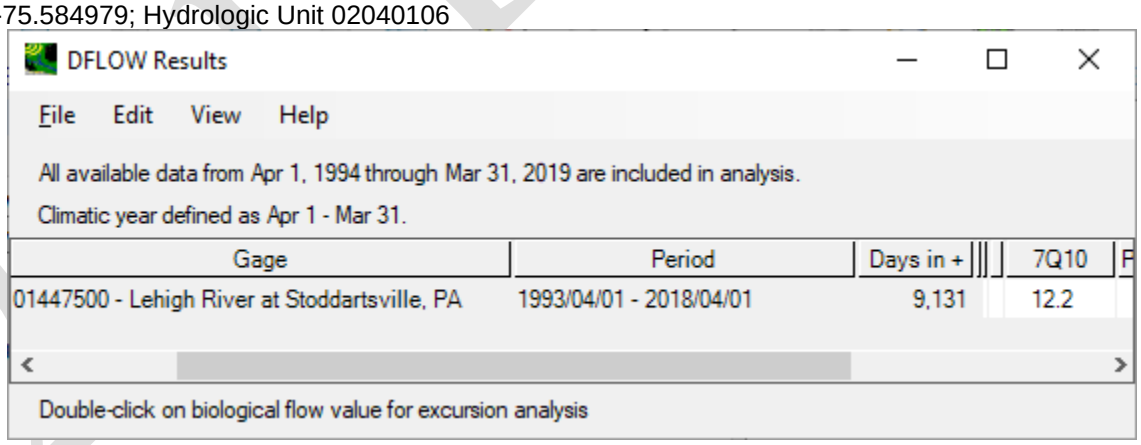
Approve	Deny	Signatures	Date
X		Bernard J. Feist Bernard Feist, P.E. / Environmental Engineer	October 1, 2020
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	10-6-20

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.525
Latitude	41° 10’ 31”	Longitude	75° 35’ 06”
Quad Name	Thornhurst	Quad Code	0941
Wastewater Description:	Sewage Effluent , no industrial influent		
	a		
Receiving Waters	Lehigh River	Stream Code	3335
NHD Com ID	26278807	RMI	91.7
Drainage Area	56.6	Yield (cfs/mi^2)	0.133
Q_{7-10} Flow (cfs)	7.5 (cfs)	Q_{7-10} Basis	DFlow USGS Gage 01447500
Elevation (ft)	1509	Slope (ft/ft)	0.002
Watershed No.	2-A	Chapter 93 Class.	HQ-CWF
Existing Use	EV (Exceptional Value)	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
TMDL Status	Final, 07/07/2009	Name	Lehigh River TMDL*
Nearest Downstream Public Water Supply Intake	Hazelton City		
PWS Waters		Flow at Intake (cfs)	
PWS RMI	183.66 – 62.7	Distance from Outfall (mi)	28 miles

* The Lehigh River TMDL is AMD related. As per the TMDL “ All necessary reductions are assigned to non-point sources.” This sewage treatment facility receives no industrial influent.

Al, Fe, Mn (AMD metals)	No limit needed. Not previously monitored, facility not given WLAs in TMDL, no commercial wastewater sources, and a small POTW is not expected to be a significant source of AMD metals.

41.175246 -75.584979; Hydrologic Unit 02040106



STATION.--01447500 LEHIGH RIVER AT STODDARTSVILLE, PA
LOCATION.--Lat 41`07'49", long 75`37'33", Monroe County, Hydrologic Unit 02040106, on left bank 75 ft upstream from bridge on State Highway 115, at Stoddartsville, 1.9 mi upstream from Tobyhanna Creek, and 4.0 mi southwest of Thornhurst. DRAINAGE AREA.--91.7 square miles.

Q_{7-10} LowFlowYield (cfs/mi^2)= LFY = 12.2/91.7 = 0.133
Dilution of Stream : Effluent = 4.85/ 0.525 = **9.2 : 1**

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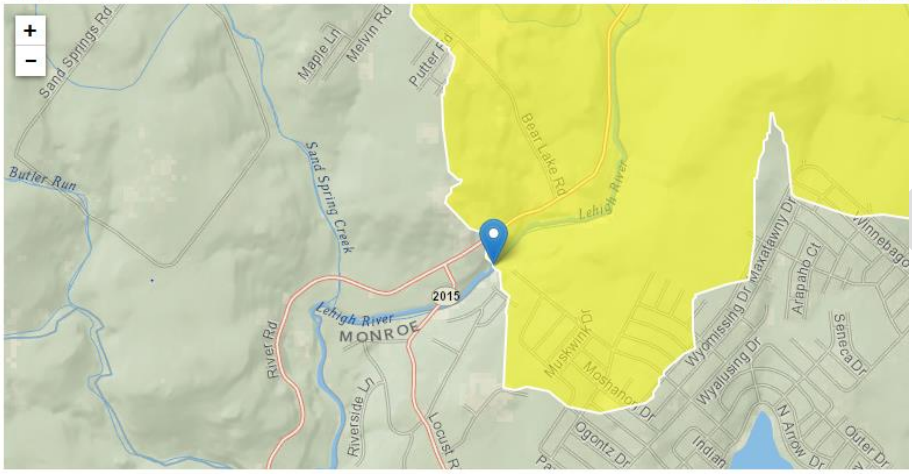
Time: 2020-03-12 12:46:53



Low-Flow Statistics Parameters[100 Percent (56.6 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	56.6	square miles

Outfall 001 @ RMI 91.7 and 1509 ft
$Q_{7\text{-}10}$ Flow (cfs) = 56.6 mi^2 * 0.133 cfs/mi^2 = 7.5 cfs

Clicked Point (Latitude, Longitude): 41.17247, -75.59765
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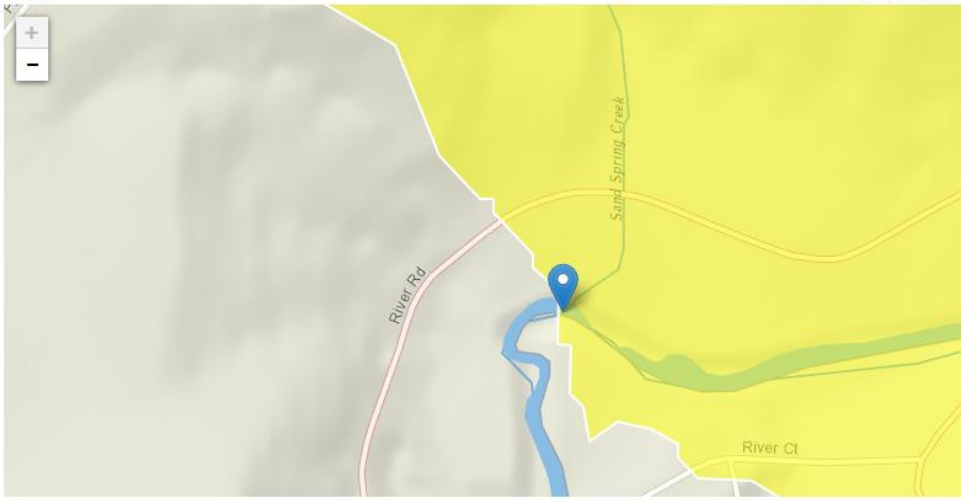

Low-Flow Statistics Parameters[100 Percent (60 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	60	square miles

Trib Sandy Springs @ RMI 90.8 and 1501 ft

Treatment Facility Summary				
Treatment Facility Name: Arrowhead Sewer Co. Inc.				
WQM Permit No.	**Issuance Date**			
4507402	05/07/2007			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary with Ammonia and Phosphorous	(4) Biologically Engineered Single Sludge Treatment*	UV- Chlorination Backup	0.525
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.525	800	not overloaded	Activated Sludge	Hazelton WTP

* The site utilizes four (4) “Upflow Sludge Blanket Filtration” (USBF) Units

Other Comments: The TRC limits will continue daily when utilized. Operations requested the following verbiage be added to Part C of the Permit –
“As UV is the permittee source of disinfection, chlorine should be used for disinfection only when the UV unit is offline for maintenance or repair. Chlorine should NOT be used in addition to UV simply because flows increase and push solids from the treatment units, increasing turbidity and decreasing the effectiveness of the UV system.”

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.525
Latitude 41° 10’ 31.00” **Longitude** 75° 35’ 6.00”
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
$CBOD_5$	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:

Water Quality-Based Limitations

A “Reasonable Potential Analysis” determined the following parameters were candidates for limitations:

TRC EVALUATION			Enter Facility Name in E3		
Input appropriate values in B4:B8 and E4:E7			Arrowhead		
7.5	= Q stream (cfs)		0.5	= CV Daily	
0.525	= Q discharge (MGD)		0.5	= CV Hourly	
4	= no. samples		1	= AFC_Partial Mix Factor	
0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
0	= Chlorine Demand of Discha		15	= AFC_Criteria Compliance Time (min)	
0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
0	= % Factor of Safety (FOS)			=Decay Coefficient (K)	
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 2.965		1.3.2.iii	WLA cfc = 2.883
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.105		5.1d	LTA_cfc = 1.676
Source		Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT = 1.720			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
		INST MAX LIMIT (mg/l) = 1.170			

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3335	LEHIGH RIVER

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)
91.700	Arrowhead	PA0061662	0.525	CBOD5	20		
				NH3-N	3	6	
				Dissolved Oxygen			5

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

CLEAR FORM

Facility: Arrowhead
NPDES Permit No.: PA0021555
Outfall: 001
Analysis Hardness (mg/L): 100
Discharge Flow (MGD): 0.525
Analysis pH (SU): 7
Stream Flow, Q_{7-10} (cfs): 7.5

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		632000	500000	Yes	na	#VALUE!
	Chloride		106000	250000	No	na	#VALUE!
	Bromide		100	N/A	No	na	#VALUE!
	Sulfate		56900	250000	No	na	#VALUE!
Group 2	Total Aluminum			750			
	Total Antimony			5.6			
	Total Arsenic			10			
	Total Barium			2400			
	Total Beryllium			N/A			
	Total Boron			1600			
	Total Cadmium			0.271			
	Total Chromium			N/A			
	Hexavalent Chromium			10.4			
	Total Cobalt			19			
	Total Copper		23	9.3	Yes	55.216	Monitor
	Free Available Cyanide			5.2			
	Total Cyanide			N/A			
	Dissolved Iron			300			
	Total Iron			1500			
	Total Lead		0.1	3.2	No	32.5	
	Total Manganese			1000			
	Total Mercury			0.05			
	Total Nickel			52.2			
	Total Phenols (Phenolics)			5			
	Total Selenium			5.0			
	Total Silver			3.8			
	Total Thallium			0.24			
	Total Zinc		51	119.8	No	472.6	
	Total Molybdenum			N/A			

From the 1987 Francis E. Walter Reservoir Report

DATE: APRIL 17,1987

SUMMARY OF DISCHARGER TO FRANCIS E. WALTER RESOVIOR

NO.	NAME OF DISCHARGER	LOCATION	PERMIT#	EXPIRATION DATE	NPDES FLOW (MGD)	EXISTING FLOW (MGD)	STP CAPACITY (MGD)	STP "P" (MG/L)	2½ Day Detention PRESENT LIMITS
6	Arrowhead Public	Coolbaugh Twp Monroe Co	0061662		0.525	0.060	0.050	5.0	CBOD5 = 20/40(S) TSS =30/60 CBOD5 = 25/50(W) P = 1/2 NH3-N = 3/6 (S) DO=5 NH3-N = 9/18(W) F.COL=200/2000
7	Proposal	Bear Cr							

Attachments


2003-010-2.pdf


Walter Resovior.pdf


Arrowhead Pentox.pdf


Arrowhead%20b%20Toxics%20Screenin


PA0061662%20First %20Fact%20Sheet.d


ASC - NPDES Sampling Data 9.30.

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	0.104	0.102	0.091	0.074	0.058	0.094	0.116	0.100	0.142	0.164	0.131	0.102
Flow (MGD) Daily Maximum	0.270	0.248	0.526	0.203	0.146	0.147	0.211	0.226	0.365	0.611	0.405	0.232
pH (S.U.) Minimum	6.5	6.4	6.2	6.4	6.2	6.0	6.3	6.2	6.3	6.2	6.3	6.6
pH (S.U.) Maximum	7.5	7.0	7.6	7.4	7.5	7.3	7.4	7.3	7.7	7.0	7.2	7.3
DO (mg/L) Minimum	10.1	8.9	8.5	8.3	7.9	8.1	7.4	8.2	7.1	6.6	6.9	8.5
TRC (mg/L) Average Monthly	0.1	0.05	0.03	0.1	0.1	0.06	0.05	0.04	0.04	0.1	0.1	0.1
CBOD5 (lbs/day) Average Monthly	2	2	2	1	1	2	2	3	3	8	6	3
CBOD5 (mg/L) Average Monthly	2.9	2.3	2.4	2.3	2.4	2.3	2.0	3.3	2.0	4.0	4.0	3.1
BOD5 (lbs/day) Influent Average Monthly	25	48	45	65	150	130	128	86	42.0	134	71	50
BOD5 (mg/L) Influent Average Monthly	77.0	111.0	100.0	120	271.0	167.0	124.0	96	42.0	76.0	76.0	70.0
TSS (lbs/day) Average Monthly	8	17	19	4	4	5	5	6	10	14	10	7
TSS (lbs/day) Influent Average Monthly	19	30	45	38	50	90	127	75	35	72	48.0	29
TSS (mg/L) Average Monthly	12.0	20.0	14.0	9.0	10.0	6.0	5.0	6.0	7.0	11.0	9.0	9.0
TSS (mg/L) Influent Average Monthly	54.0	66.0	61.0	72	104.0	114.0	119.0	86	31.0	78.0	49.0	40.0
Total Dissolved Solids (mg/L) Average Quarterly		309			611			447.0			236	
Fecal Coliform (CFU/100 ml) Geometric Mean	2	1.0	1	1	3	1	2	1	3	4	2	2.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	49	1.0	1	1	91	2	65	2	93	136	136	42
Nitrate-Nitrite (lbs/day) Average Monthly	18	12	5.0	26	14	28	29	0.1	9.0	11	12	14.5
Nitrate-Nitrite (mg/L) Average Monthly	27.5	27.2	8.6	40.4	32.5	35.4	32.3	0.1	5.4	12.9	28.1	21.7
Total Nitrogen (lbs/day) Average Monthly	19	15	9.0	26	15	28	30	1	27.0	12	12	16.9
Total Nitrogen (mg/L) Average Monthly	27.8	34.6	13.6	40.4	34.2	35.4	33.3	1.0	15.9	13.6	28.7	25.4
Ammonia (lbs/day) Average Monthly	1	2	1	0.3	< 1	0.2	1	0.2	4	7	2	2
Ammonia (mg/L) Average Monthly	1.3	2.1	1.6	0.5	0.1	0.4	0.7	0.2	3.3	2.7	1.3	2.6
TKN (lbs/day) Average Monthly	1	3	3	0.6	1	< 1.0	1	1	18.0	1	0.4	2.5
TKN (mg/L) Average Monthly	1.0	7.4	5.0	1.0	1.7	< 1.0	1.0	1.0	10.5	1.0	1.0	3.7
Total Phosphorus (lbs/day) Average Monthly	0.5	0.6	0.7	0.2	0.3	0.3	0.3	0.2	0.3	0.7	0.4	0.3

Total Phosphorus (mg/L) Average Monthly	0.6	0.7	0.6	0.4	0.6	0.4	0.3	0.3	0.2	0.4	0.4	0.4
Total Copper (mg/L) Average Quarterly		0.09			0.05			0.04			0.0122	
Total Zinc (mg/L) Average Quarterly		0.10			0.11			0.07			0.0153	

Average Copper = 0.0481 mg/l
Average Zinc = 0.0738 mg/l

Compliance History

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

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	05/31/19	Avg Mo	3.3	mg/L	3.0	mg/L