

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

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0061662
APS ID 633140
Authorization ID 1062452

Applicant and Facility Information

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

Summary of Review

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. These remain unchanged. New Limits will be added for Copper and Lead starting year 4. See the Development of Effluent Limitations Section.

Quarterly monitoring for TDS, 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 11/02/2018 an Administrative/File Review was done with one Violation noted.

The WMS "Open Violations by Client Report" was run and there is one open violation on 11/02/2018 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.

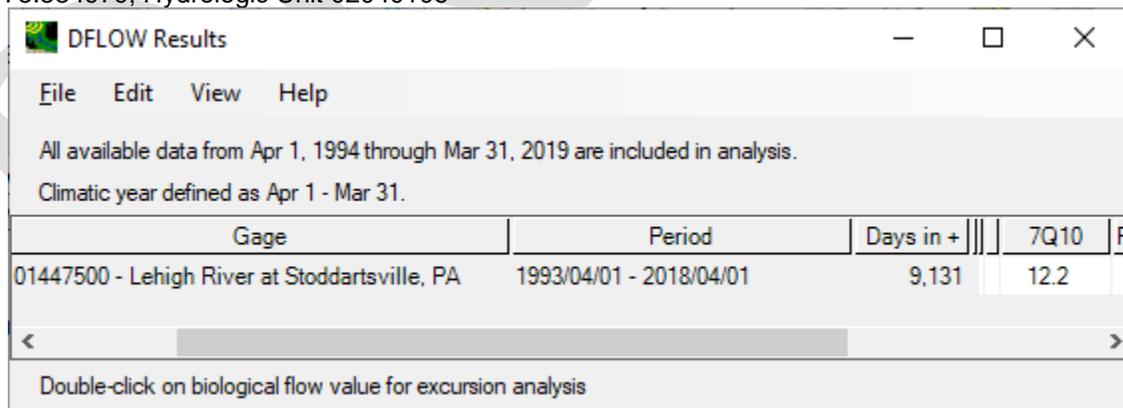
Approve	Deny	Signatures	Date
X		 Bernard Feist, P.E. / Environmental Engineer	May 1, 2020
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	May 15, 2020

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

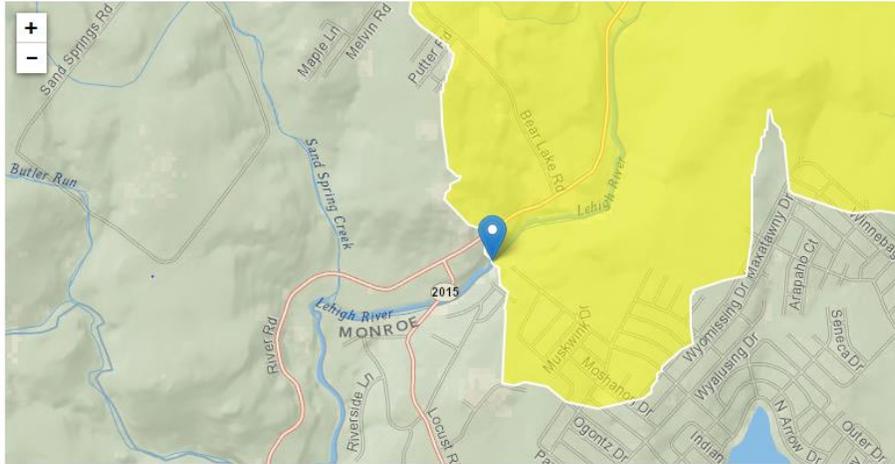


STATION.--01447500 LEHIGH RIVER AT STODDARTSVILLE, PA
LOCATION.--Lat 41° 07' 49", long 75° 37' 33", Monroe County, Hydrologic Unit 02040106, on left bank 75 ft upstream from bridge on State Highway 115, at Stoddartsville, 1.9 mi upstream from Tobyhanna Creek, and 4.0 mi southwest of Thornhurst. DRAINAGE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

Q₇₋₁₀ LowFlowYield (cfs/mi²)= LFY = 12.2/91.7 = 0.133
Dilution of Stream : Effluent = 4.85/ 0.525 = 9.2 : 1

Clicked Point (Latitude, Longitude):
Time:

41.17478, -75.58523
2020-03-12 12:46:53



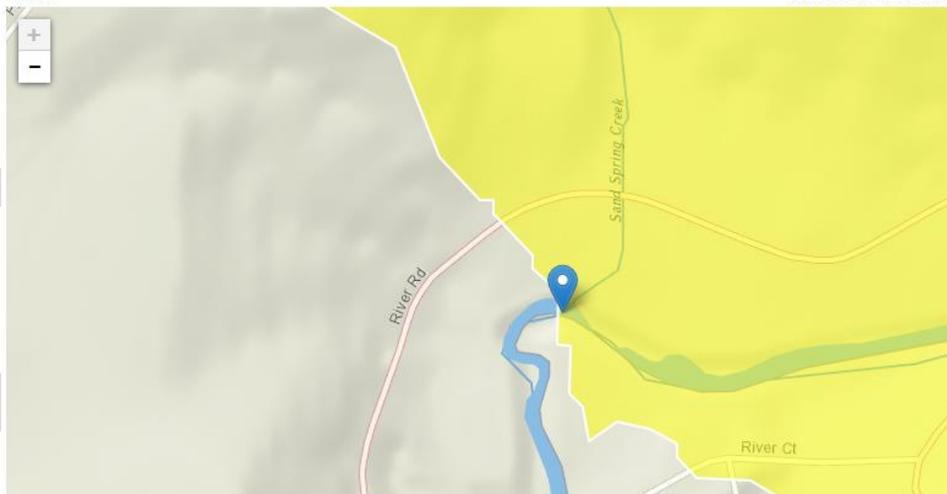
Low-Flow Statistics Parameters(100 Percent (56.6 square miles) Low Flow Region 2)

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

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

Clicked Point (Latitude, Longitude):
Time:

41.17247, -75.59765
2020-03-12 12:58:04



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 facility uses chlorine tablets intermittently to supplement the permitted UV disinfection system the existing TRC limits will continue daily when utilized.

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 Discharge	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	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
91.700	Arrowhead	PA0061662	0.525	CBOD5	20		
				NH3-N	3	6	
				Dissolved Oxygen			5

Analysis Results
✕

Effluent Limits

Hydrodynamics
Wasteload Allocations
Effluent Limits

RMI	Name	Permit Number	Disc Flow (mgd)
91.7	Arrowhead	PA0061662	0.5250

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
▶ COPPER	55.216	AFC	86.146	55.216	AFC
LEAD	32.509	CFC	50.72	32.509	CFC
NO2-NO3 (PWS)	40400	INPUT	63030.5	NA	NA
TOTAL DISSOLVED SOLIDS (PWS)	632000	INPUT	986021.6	NA	NA
ZINC	110	INPUT	171.618	472.59	AFC

Record: 1 of 5 No Filter Search

Record: 1 of 1 No Filter Search

Number of Samples 4

Print
< Back
Next >
Archive
Cancel

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin: 02C **Stream Code:** 3335 **Stream Name:** LEHIGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)
91.70	Arrowhead	PA0061662	0.5250

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
COPPER	55.216	AFC	86.146	55.216	AFC
LEAD	32.509	CFC	50.72	32.509	CFC
NO2-NO3 (PWS)	40400	INPUT	63030.5	NA	NA
TOTAL DISSOLVED SOLIDS (PWS)	632000	INPUT	986021.6	NA	NA
ZINC	110	INPUT	171.618	472.59	AFC

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, Q₇₋₁₀ (cfs): **7.5**

Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion	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!
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	60	9.3	Yes	55.216	Establish Limits
Group 2 Free Available Cyanide		5.2			
Total Cyanide		N/A			
Dissolved Iron		300			
Total Iron		1500			
Total Lead	< 420	3.2	Yes	32.5	Establish Limits
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	110	119.8	No	472.6	
Total Molybdenum		N/A			

Additional Considerations

Establish limits of 55.2 ug/l monthly average and 86.1 ug/l max daily for copper
 Establish limits of 32.5 ug/l monthly average and 50.72 ug/l max daily for lead.

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)	24 Day Detention PRESENT LIMITS
6	Arrowhead Public	Coolbaugh Twp Houroe 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	Proconal	Roar Fr							

Attachments



2003-010-2.pdf



Walter Resovior.pdf



Arrowhead Pentox.pdf



Arrowhead%20Toxi cs%20Screening%20

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

DRAFT