pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0061131**
Facility Type	**Municipal**	APS ID	**545636**
Major / Minor	**Minor**	Authorization ID	**1157189**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Dalton Sewer Authority Lackawanna County**	Facility Name	**Dalton Sewer Authority WWTP**
Applicant Address	PO Box 538	Facility Address	2047 Turnpike Road
	Dalton, PA 18414-0538		LaPlume, PA 18414
Applicant Contact	David Beckish	Facility Contact	David Beckish
Applicant Phone	(570) 563-1354	Facility Phone	(570) 563-1354
Client ID	75084	Site ID	250901
Ch 94 Load Status	Not Overloaded	Municipality	LaPlume Township
Connection Status	-	County	Lackawanna
Date Application Received	October 25, 2016	EPA Waived?	Yes
Date Application Accepted	October 28, 2016	If No, Reason	-

Purpose of Application: RENEWAL OF EXISTING NPDES PERMIT.

Summary of Review

Renewal application for 0.140 MGD municipal STP discharge to Ackerly Creek (TSF; Stream Code# 28829). They had a 0.088 MGD ADF discharge in 2015, 0.099 MGD discharge in 2014, and 0.091 MGD discharge in 2013. They had a 0.104 MGD highest monthly average discharge in April 2015.

Part C Special Conditions:

- **Part C.I: New Chesapeake Bay Nutrient Definitions**
- **Part C.II: New Schedule of Compliance (TRC)**
- **Part C.III: New Standard Solids Management Conditions**
- **Part C.IV: New TRE conditions (Copper)**
- Part C.V.A, B, C: Existing Standard Stormwater prohibition, Necessary property rights, Residuals management
- **Part C.VI.D: New Chlorine Minimization condition**
- Part C.VI.E: Existing Stream/Effluent condition

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	September 19, 2017
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.140
Latitude	41º 33' 1.00"	Longitude	-75º 44' 59.00"
Quad Name	Dalton	Quad Code	0640 (2.21.3)
Wastewater Description:	Sewage Effluent		

Receiving Waters	Ackerly Creek	Stream Code	28829
NHD Com ID	66405109	RMI	-
Drainage Area	15.7 square miles	Yield (cfs/mi^2)	0.0127
Q_{7-10} Flow (cfs)	0.2	Q_{7-10} Basis	USGS PAStreamstats
Elevation (ft)	895 Feet (per NPDES Application)	Slope (ft/ft)	-
Watershed No.	4-F	Chapter 93 Class.	TSF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Siltation, Siltation		
Source(s) of Impairment	Source Unknown, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	-	Name	

Background/Ambient Data: **NA**		Data Source: **NA**
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	PA AMER WATER CO NESBITT DIV (ID# 101800-100)		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	-

Changes Since Last Permit Issuance: None known.

Other Comments:

Watershed Stormwater & Siltation Issues: There are MS4 stormwater outfalls discharging upstream of the WWTP: Dalton Township, PAG132271; South Abington Twp., PAG132208; Waverly Township, PAG133367; Clarks Summit, PAG132207. The MS4 program is expected to help improve stormwater-related issues over time. The WWTP is not expected to be a source of siltation and is prohibited from accepting stormwater.

Watershed Pathogens Issue: The WWTP has been meeting the Chapter 92a.47 fecal coliform secondary treatment limits (maximum of 100/100 ml fecal coliforms out of 105 samples per NPDES Permit Renewal Application information). It is not the cause of fecal coliform exceedances.

Upstream Ackerly Creek/UNT Impairment by Municipal Point Source: Upstream Ackerly Creek reaches are impaired by additional known causes/sources (Municipal Point Source - Organic Enrichment/Low D.O.; Municipal Point Source - Suspended Solids). E-maps does not indicate Organic Enrichment/low DO/Suspended Solids problems extending to the facility discharge location. No Ackerly Creek water chemistry data is available for the WWTP Outfall location. Any upstream STP/WWTP impairment source would be addressed under separate NPDES Permitting. Per E-maps, upstream STPs/WWTPs include, but are not limited to:

- **Waverly Township WWTP (PA0061034) near headwaters of Trib 28835 To Ackerly Creek is impaired due to: Municipal Point Source - Organic Enrichment/Low D.O.; Municipal Point Source - Suspended Solids; Urban Runoff/Storm Sewers – Metal.**
- **Glenburn SVC Co WWTP (PA0061085) is upstream on the main stem of Ackerly Creek.**
- **Elmed Corp STP (PA0062189) is upstream on UNT 28842 to Ackerly Creek**

This is a Phase 5 Chesapeake Bay facility. Monitoring will be added in this permit cycle.

Treatment Facility Summary

Treatment Facility Name: Dalton Sewer Authority WWTP

WQM Permit No.	Issuance Date	Scope
3585405	1/10/1986	STP with outfall and headwall plus sewage collection system (gravity sewer and smaller LPS System area). STP consisted of comminutor with screened bypass channel, influent pumping, two stage aeration process, chlorination, and post-aeration. Sludge was to be processed via aerobic digester. An alkalinity feed system in the blower building was to provide alkalinity if needed. NOTE: An earlier WQM Permit No. 3575406 STP design & apparently a 1969 Department of Health No. 3569403 was superseded by this WQM permit.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with post-aeration	Extended Aeration	Chlorine Contact Tank	0.140

Hydraulic Capacity (MGD)	Organic Capacity (lbs BOD5/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.140	233.5*	Not Overloaded	Aerobic Digestion**	Hauled offsite

***As clarified by Applicant. 1986 Design Engineer Report calculated 228 lbs BOD5/day, based on 200 mg/l BOD5 influent load at 0.136920 MGD. At 0.140 MGD flow (package plant sizing), the facility would receive 233.52 lbs BOD5/day.**
****Operated as a sludge holding tank per the application.**

Changes Since Last Permit Issuance: See Compliance Section. In addition, DMRs indicate a new flow meter was installed in 2016. Per consultant, the Authority is beginning to look at facility upgrade options, but has not yet determined whether any upgrades will be proposed in the new permit term (including an additional influent composite sampler).

Other Comments:

No hydraulic or organic overloading projected in 2015/2016 Chapter 94 Reports. Approximately 195,200 gallons of sewage sludge was removed and transported to the Wyoming Valley Sanitary Authority for disposal in 2015. 195,200 gallons were removed in 2016. DMRs indicate daily max flows up to 0.17032 MGD has been received at the facility.

Application clarified that the facility was built with a combination comminutor and bypass bar screen. Facility does not have another influent screen per Inspector discussions with operator.

Application clarified that the facility was originally built with chlorine gas disinfection system (no longer in use), and that there are no provisions for breakpoint chlorination or de-chlorination. Facility is using tablet chlorination disinfection at present (no WQM permit approval found). The facility was originally designed to not need breakpoint chlorination during normal operation, but proposed its usage if any unit was bypassed in an emergency. 1986 WQM Permit Application and 2015 Chapter 94 Report indicate the chlorination system and dechlorination system was designed to achieve “breakpoint chlorination” for ammonia-N (consisting of additional detention time in tank, no chemical feed system for dichlorination per Chapter 94 Report). **Breakpoint chlorination is “only necessary during extremely cold weather period or when one of the aeration reactors is out of servce” (2015 Chapter 94 Report).** Original WQM Permit Application (Response to 8/16/1985 DER comments) indicated a 20 minute detention time dichlorination tank would be installed plus “sulfonator and related apparatus will need to be installed”.

Application clarified that the “facility does not presently have an alkalinity feed system”.

The DEP files included earlier WQM permits for an Authority STP, but the 1986 WQM Permit was associated with an EPA Construction Grant for STP construction.

Meets the 85% minimum monthly average reduction target per Application data:

Constituent	Application Influent Concentration (average)	Application Effluent Concentration (average)	Percentage Removed
BOD5	184.3 mg/l (105 samples)	6.47 mg/l CBOD5 (105 samples) equivalent to 7.76 mg/l BOD5 per 1.2 Metcalf & Eddy factor)	~95%
TSS	193 mg/l (105 samples)	10.51 mg/l (105 samples)	~94.5%

Compliance History	
Summary of DMRs:	No exceedances in 2015 – 2016. No eDMR data available via WMS as of 9/18/2017.
Summary of Inspections:	**1/15/2013: Compliance Inspection Report noted 2012 ammonia-N exceedances. Floating mats and foam covered ~50% of both aeration tanks and ~80% of digester. Grasses were growing the floating mats.** **5/6/2015: Compliance Inspection Report noted lack of influent screen/skimmer (recommended in Report) and visible rags/debris floating on both aeration tanks and sludge holding tank. The rags contributed to formation of floating mats that have grass and weeds growing on them. The Report also recommended the facility purchase a composite sampler.** **06/26/2017: Complaint Investigation: No violations** **07/12/2017: Compliance Inspection: No violations**

Other Comments:

Timely Renewal Application submittal. NPDES Permit administratively extended by regulation/permit condition.

No open violations per Client per 9/18/2017 WMS query.

12/27/2012 NOV addressed 2012 exceedances of Ammonia-N and Fecal Coliforms.

Operational Problem Follow-up (Floating mats/debris): Application indicates "floating mats and debris have been and will continue to be vacuumed from the tanks". The DEP Inspector had noted that DEP Compliance Assistance had been to the site, and provided technical guidance on a quick fix (using ropes to snag rags/debris, pulling rope out each day before they get too heavy).

TRC Sampling Question: The 5/6/2015 DEP Sample ID# 1948116 (Effluent testing) TRC Concentration of 0.78 mg/l was not consistent with the Application TRC data (max of 0.031 mg/l out of 731 samples). 5/2015 DMR reported an 0.02 mg/l IMAX (average of 0.017 mg/l TRC, current DEP Target QL is 0.02 mg/l for TRC). Cause for discrepancy is unknown.

Chapter 94 Reports: The submitted Chapter 94 Report contained inaccurate information about as-built/existing WWTP per Application information. Per NPDES Part B.I.C.3, the facility is obligated to promptly submit the correct and complete facts or information for the incorrect Chapter 94 Reports.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.140
Latitude 41º 33' 2.08" **Longitude** -75º 44' 58.49"
Wastewater Description: Sewage Effluent

Permit limits and/or Monitoring Requirements: Changes bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	29.2 Lbs/d 46.7 Lbs/d 25.0 40.0 50.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. NPDES Application Effluent data was 6.47 mg/l average (105 samples) and 15.0 mg/l max.
TSS	35.0 Lbs/d 52.5 Lbs/d 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47). NPDES Application Effluent data was 10.51 mg/l average (105 samples) and 32.0 mg/l max.
pH	6.0 – 9.0 SU	Min - IMAX	Existing Technology limit (Chapter 92a.47). NPDES Application Effluent data ranged from 6.8 SU minimum to 7.2 SU max (731 samples).
Dissolved Oxygen (DO)	5.0	Minimum	Existing WQBEL supported by Water Quality Modeling. **Daily monitoring now required.** NPDES Application Effluent data was 7.61 mg/l average (731 samples) and 7.2 mg/l minimum.
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) **Units changed to #/100 ml per CO guidance**. NPDES Application Effluent data was 1.82/100 ml average (105 samples) and 100/100 ml max.
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above.
Total Residual Chlorine (effective in 3 years)	**0.144** **0.470**	**Average Monthly** **IMAX**	**New WQBELs effective in three years (old POTW BAT and Chapter 92a.48 TBEL superseded by water quality modeling). Revised WQBEL (92a.48) incorporating Chapter 92a.48 TBEL into TRC Spreadsheet. (Old 1.0/2.0 mg/l POTW limits did not result in any change in WQBEL). NPDES Application Effluent data was 0.021 mg/l average (731 samples) and 0.031 mg/l max indicate new limits are met**.
Ammonia-Nitrogen (May 1 - Oct 31)	8.8 Lbs/d 7.5 15.**0** **22.5**	Monthly Average Monthly Average **Daily Max** **IMAX**	Existing WQBELs supported by WQM Model 7.0. NPDES Application Effluent data was 6.02 mg/l average (105 samples) and 19.4 mg/l max**. Daily Max limit per WQM Model 7.0,** IMAX per standard sewage multiplier.
Ammonia-Nitrogen (Nov 1 - Apr 30)	**26.2 Lbs/d** **22.5** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**New winter WQBEL based on water quality modeling and standard winter multiplier. WQM Design Engineer Report indicated**

			some concerns about meeting ammonia-N limits during very cold conditions.
Total Phosphorus	**Report Lbs Report Lbs Report Report**	**Total Annual Total Monthly Monthly Average Monthly Average**	**Semi-annual Chesapeake Bay monitoring requirement (Chapter 92a.61). NPDES Application Effluent data was 1.78 mg/l average (3 samples) and 2.07 mg/l max.**
Total Nitrogen (Nitrate-Nitrite-N + TKN measured in same sample)	**Report Lbs Report Lbs Report Report**	**Total Annual Total Monthly Monthly Average Monthly Average**	**Semi-annual Chesapeake Bay monitoring requirement (Chapter 92a.61). NPDES Application Effluent data was (3 samples): TN: 12.38 mg/l avg.; 14.1 mg/l max (2 samples) TKN: <5.43 mg/l avg.; 8.3 mg/l max (3 samples) Nitrate-Nitrite: <10.47 mg/l avg.; 21.95 max (3 samples)**
TDS, Chlorides, Sulfates, and Bromide	Not Needed	-	See Reasonable Potential Analysis below
Copper	**Report Lbs/d 0.017 0.021 0.034**	**Monthly Average Monthly Average Daily Max IMAX**	**New WQBELs, effective in 3 years with interim monitoring, due to Reasonable Potential Analysis. IMAX per sewage multiplier. See Table 1 for copper results.**
Lead	**-**	**-**	**Not needed per revised Toxic Screening Spreadsheet using sampling data meeting DEP Target QLs.**

Comments:

Chesapeake Bay Monitoring: 2/year nutrient monitoring has been added in this permit cycle.

Composite Sampling: 24-hour composite sampling of effluent is required due to copper issues and potential biasing of compliance monitoring if only 8-hour composite sampling was done. The existing permit's 8-hour influent composite sampling has been retained. The permittee should consider going to influent 24-hour composite sampling as recommended to reduce biasing in DMR compliance reporting.

Reasonable Potential Analysis: **See Toxic Screening Spreadsheet, PENTOXSD water quality modeling, and TOXCONC (copper) which calculated the Long Term Average Monthly Effluent Concentration. No industrial discharge per Application and 2015/2016 Chapter 94 Reports.**

- TDS: Nearest PWS Intake is on the Susquehanna River, too far away to be affected by this minor STP.
- Chlorides, Sulfated, Bromides: No monitoring or limits needed per Toxic Screening Spreadsheet.
- **Copper: New WQBELs required per Toxic Screening Spreadsheet and updated water quality modeling. Sampling data included sampling results greater than Daily Max WQBEL.**
- Lead: Additional sampling (meeting DEP Target QLs) indicated no monitoring or limits needed.

Table 1 (New Sampling & Analysis Data received 8/3/2017)

Copper (mg/l)	Collection Date per lab sheet	Analysis Date and Time per lab sheet	Lead (mg/l)	Collection Date per lab sheet	Analysis Date and Time per lab sheet
0.011	5/9/2017	7/5/2017 15:00	<0.001	5/9/2017	6/22/2017
0.009	5/16/2017	7/5/2017 15:00	<0.001	5/16/2017	6/22/2017
0.007	5/23/2017	7/5/2017 15:00	<0.001	5/23/2017	6/22/2017
0.024*	5/30/2017	7/5/2017 15:00	0.002	5/30/2017	6/22/2017
0.017	6/6/2017	7/5/2017 15:00	-	-	-
0.012	6/13/2017	7/5/2017 15:00	-	-	-
0.009	6/21/2017	7/5/2017 15:00	-	-	-

***Exceeding Daily Max WQBEL**.

Attachments

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04F	28829	ACKERLY 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)
0.970	Dalton WWTP	PA0061131	0.140	CBOD5	25		
				NH3-N	7.5	15	
				Dissolved Oxygen			5

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.2

Facility: **Dalton Sewer Authority WWTP** NPDES Permit No.: **PA0061131** Outfall: **001**
Analysis Hardness (mg/L): **100** Discharge Flow (MGD): **0.14** Analysis pH (SU): **7**

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
Total Dissolved Solids		612000	500000	Yes		
Chloride		218000	250000	No		
Bromide	<	1000	N/A	No		
Sulfate		32500	250000	No		
1,4-Dioxane			N/A			
Total Copper		19.4516	9.33	Yes	17.234	Establish Limits
Total Lead		2	3.18	No		
Total Zinc		43.4	119.8	No		

Reviewer/Permit Engineer: Berger

Facility: Dalton Sewer Authority WWTP
NPDES #: PA0061131
Outfall No: 001
n (Samples/Month): 4

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Copper (mg/L)	Lognormal	0.4760229	0.0194516

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
04F	28829	ACKERLY CREEK

RMI	Name	Permit Number	Disc Flow (mgd)
0.97	Dalton STP	PA0061131	0.1400

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
COPPER	17.234	AFC	26.887	17.234	AFC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9		Dalton Sewer Authority WWTP	
0.2	= Q stream (cfs)	0.5	= CV Daily
0.14	= Q discharge (MGD)	0.5	= CV Hourly
30	= 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)
1	= 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 = 0.314	1.3.2.iii	WLA cfc = 0.298
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.117	5.1d	LTA_cfc = 0.173

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.144	AFC
		INST MAX LIMIT (mg/l) = 0.470	

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — Dalton Sewer Authority WWTP

0.2	= Q stream (cfs)	0.5	= CV Daily
0.14	= Q discharge (MGD)	0.5	= CV Hourly
30	= 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 = 0.314	1.3.2.iii	WLA cfc = 0.298
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.117	5.1d	LTA_cfc = 0.173

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.144	AFC
		INST MAX LIMIT (mg/l) = 0.470	