

 Application Type
 Renewal

 Facility Type
 Industrial

 Major / Minor
 Minor

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

 Application No.
 PA0005053

 APS ID
 924752

 Authorization ID
 1154466

Applicant and Facility Information

Applicant Name	GenOn REMA LLC (formerly NRG REMA LLC)	Facility Name	Warren Generating Station
Applicant Address	250 Power Plant Drive	Facility Address	20085 Route 6
	Shawville, PA 16873		Warren, PA 16365-3655
Applicant Contact	Stephen M. Frank, Sr. Mgr., Environmental	Facility Contact	William J. Weaver, Plant Manager
Applicant Phone	724-249-3610	Facility Phone	
Client ID	135779	Site ID	263250
SIC Code	4911	Municipality	Conewango Township
SIC Description	Trans. & Utilities - Electric Services	County	Warren
Date Application Receiv	ved September 29, 2016	EPA Waived?	Yes
Date Application Accep	ted December 7, 2016	If No, Reason	
Purpose of Application	NPDES permit renewal		

Summary of Review

The Warren Generating Station steam units have been deactivated and this portion of the facility is closed. The combustion turbine (CT) continues to be operate.

NRG recently changed their operational name to GenOn Holdings, Inc. As a result of this name change, the applicant submitted a letter received on June 18, 2019 to request that the applicant name be changed from "NRG REMA LLC" to "GenOn REMA LLC". The facility was originally permitted as "GenOn REMA LLC" in the last permit renewal dated March 8, 2012 but the name was changed to "NRG REMA LLC" through a permit amendment dated March 31, 2014. The applicant is now proposing to revert back to the "GenOn REMA LLC" name and was advised on July 11, 2019 that a permit amendment application would be required for this change. The applicant is preparing the application and submittal is expected soon. It is anticipated that this will happen prior to final permit issuance and the amendment can be simultaneously completed at the time of the final permit issuance. The combustion turbine (CT) is reportedly going to be transferred to a different entity (Warren Power LLC). A permit amendment to address this change is anticipated in the near future.

Contact information since the original September 29, 2016 NPDES permit renewal submittal has changed as follows:

Applicant: Stephen M. Frank, P.E. Senior Manager, Environmental <u>Stephen.Frank@GenOn.com</u> 724-249-3610 or Karen E. McClelland Senior Environmental Specialist <u>Karen.McClelland@GenOn.com</u> 724-877-4462

Facility: William J. Weaver Plant Manager <u>William.Weaver@GenOn.com</u>

Approve	Deny	Signatures	Date
х		Justin C. Dickey, P.E. / Environmental Engineer Manager	
х		John A. Holden, P.E. / Environmental Program Manager	

Summary of Review

It was determined during the permit renewal review that this facility's discharge should be regulated under the revised Steam Electric Subcategory (40 CFR 423) as combustion residual leachate. This wastestream is defined in 40 CFR 423.11(r) as "leachate from landfills or surface impoundments containing combustion residuals. Leachate is composed of liquid, including any suspended or dissolved constituents in the liquid, that has percolated through waste or other materials emplaced in a landfill, or that passes through the surface impoundment's containment structure (e.g., bottom, dikes, berms). Combustion residual leachate includes seepage and/or leakage from a combustion residual landfill or impoundment unit. Combustion residual leachate includes wastewater from landfills and surface impoundments located on non-adjoining property when under the operational control of the permitted facility."

The Chapter 92a fee category will be changed to "Minor IW with ELG" upon issuance of this permit.

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.

Discharge, Red	Discharge, Receiving Waters and Water Supply Information							
Outfall No.	001		Design Flow (MGD)	N/A				
Latitude	41º 50' 07"		Longitude	-79º 11' 20"				
Outfall No.	003		Design Flow (MGD)	N/A				
Latitude	41º 50' 07"		Longitude	-79º 11' 40"				
Outfall No.	004		Design Flow (MGD)	N/A				
Latitude	41º 50' 07"		Longitude	-79º 11' 28"				
Quad Name	Warren		Quad Code	01073				
Wastewater I	Description:	Stormwater						
Receiving Wa	aters <u>Allegh</u>	neny River (WWF)	Stream Code	42122				
NHD Com ID	11237	75359	RMI					
Drainage Are	ea <u>-</u>		Yield (cfs/mi ²)					
Q ₇₋₁₀ Flow (cf	s)		Q7-10 Basis	-				
Elevation (ft)	_		Slope (ft/ft)	-				
Watershed N	lo. <u>16-B</u>		Chapter 93 Class.	WWF				
Existing Use	-		Existing Use Qualifier					
Exceptions to	o Use		Exceptions to Criteria	-				
Assessment	Status	Impaired						
Cause(s) of I	mpairment	MERCURY, PATHOGENS						
Source(s) of Impairment SOURCE UNKNOWN, SOL			CE UNKNOWN					
TMDL Status	5		Name					

Changes Since Last Permit Issuance: None

Other Comments: These stormwater outfalls meet the requirements for being eligible for a no exposure exemption. Therefore, the will not be included in the NPDES permit.

Discharge, Receiving V	Water	s and Water Supply Inforr	Discharge, Receiving Waters and Water Supply Information						
Outfall No. 002			Design Flow (MGD)	.029					
Latitude 41° 50'	04"		Longitude	<u>-79º 11' 31"</u>					
Quad Name			Quad Code						
Wastewater Descripti	ion:	Treated ash disposal site I	eachate and stormwater						
Receiving Waters	Allegh	eny River (WWF)	Stream Code	42122					
NHD Com ID	11237	5359	RMI	186.21					
Drainage Area	3140		Yield (cfs/mi ²)	0.324					
Q ₇₋₁₀ Flow (cfs)	1017.8	38	Q7-10 Basis	See below					
Elevation (ft)	1163		Slope (ft/ft)	0.0003					
Watershed No.	16-B		Chapter 93 Class.	WWF					
Existing Use	-		Existing Use Qualifier						
Exceptions to Use	-		Exceptions to Criteria						
Assessment Status		Impaired							
Cause(s) of Impairme	ent	MERCURY, PATHOGENS	8						
Source(s) of Impairme	ent	SOURCE UNKNOWN, SO	OURCE UNKNOWN						
TMDL Status			Name						
Background/Ambient	Data		Data Source						
pH (SU)		7.4	9/98-6/04 sampling @ WQN #866 – Alleg. R. near Warren						
Temperature (°F)		25	Default temp for a WWF stream						
Hardness (mg/L)		31	Avg. value of samples from W	QN #866 (1/95-12/98)					
Other:		-	-						
Nearest Downstream	Publi	c Water Supply Intake	Aqua Pa, Emlenton						
PWS Waters Alle	eghen	y River	Flow at Intake (cfs)	1376					
PWS RMI 90	.67		Distance from Outfall (mi)	96 miles (approximate)					

Changes Since Last Permit Issuance: N/A

Q₇₋₁₀ Flow Calculations:

USGS 03016000 – Allegheny River @ West Hickory $(1/1985-9/2010^*) - Q7,10 = 1060$ cfs; D.A. = 3660 mi²; *No flow data was collected at the West Hickory gage from 10/2004 to 9/2007. D-Flow was used to find Q₇₋₁₀.

USGS 03012600 – Allegheny River @ Kinzua Dam (1935-1965) – Yield = 0.081 cfsm

Flow will be subtracted between West Hickory Gage and Outfall 002 using yield rate prior to construction of Kinzua Dam.

Q7-10 at Outfall 002 = 1060 cfs - [(3660-3140 mi)(0.081 cfsm)] = 1017.88 cfsQ7-10 at Downstream Point = 1060 cfs - [(3660-3141 mi)(0.081 cfsm)] = 1017.96 cfs(Just below Morse Run confluence - RMI 184.76) Q7-10 at PWS (Aqua At Emlenton - RMI 90.57) = 1376 cfs

Discharge, Receiving Waters and Water Supply Information							
Outfall No. 005	Design Flow (MGD)	<u>N/A</u>					
Latitude41º 50' 07"	Longitude	79º 11' 28"					
Quad Name	Quad Code						
Wastewater Description: Stormwater							
Receiving Waters UNT to Allegheny River (WWF)	Stream Code	42122					
NHD Com ID112375331	RMI						
Drainage Area	Yield (cfs/mi ²)						
Q ₇₋₁₀ Flow (cfs)	Q7-10 Basis						
Elevation (ft)	Slope (ft/ft)						
Watershed No. 16-B	Chapter 93 Class.	WWF					
Existing Use	Existing Use Qualifier						
Exceptions to Use	Exceptions to Criteria						
Assessment Status _							
Cause(s) of Impairment							
Source(s) of Impairment _							
TMDL Status _	Name -						
Background/Ambient Data	Data Source						
pH (SU) -	-						
Temperature (°F) -	-						
Hardness (mg/L) -	-						
Other: -	-						
Nearest Downstream Public Water Supply Intake							
PWS Waters	Flow at Intake (cfs)						
PWS RMI	Distance from Outfall (mi)						

Changes Since Last Permit Issuance: None

Other Comments: This stormwater outfalls meet the requirements for being eligible for a no exposure exemption. Therefore, the will not be included in the NPDES permit.

Treatment Facility Summary Treatment Facility Name: Warren Generating Station WQM Permit No. **Issuance Date** 6274203-T3 3/31/2014 6203201-T1 5/4/2011 Degree of Avg Annual Waste Type Treatment **Process Type** Disinfection Flow (MGD) Chemical (Industrial Industrial Waste) Chemical Precipitation No Disinfection ---**Hydraulic Capacity Organic Capacity** Biosolids (MGD) (lbs/day) Load Status **Biosolids Treatment** Use/Disposal 2.21 000 ---Dewatering Landfill

Changes Since Last Permit Issuance: None

6274203-T3: Ash disposal ponds (original permit issued on 5/19/75)

6203201-T1: Leachate storage pond, pump station, leachate treatment consisting of 2-stage pH adjustment and aeration, settling, sludge thickening, filter press, sludge hopper, and ancillary equipment. (original permit issued on 4/9/2003)

Compliance History

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 0.03 0.02 0.02 0.03 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 pH (S.U.) Minimum 7.2 7.4 7.1 7.2 7.0 7.2 7.2 7.3 7.0 7.2 7.0 7.1 pH (S.U.) 8.2 Maximum 8.0 7.9 7.8 7.9 7.9 7.9 7.9 7.9 8.0 7.8 7.8 TSS (mg/L) Average Monthly < 0.2 < 3.8 2.3 4.3 3.2 4.8 5.0 < 2.8 3.8 4.5 2.8 2.5 TSS (mg/L) Daily Maximum 2.0 7.0 3.0 7.0 5.0 6.0 9.0 6.0 6.0 5.0 4.0 4.0 Total Iron (mg/L) Average Monthly 0.4 0.35 < 0.26 0.28 0.24 0.24 0.17 0.27 0.11 0.33 0.34 0.08 Total Iron (mg/L) 0.48 0.54 0.26 0.35 0.35 0.27 0.36 0.12 0.72 0.13 0.65 Daily Maximum 0.39

DMR Data for Outfall 002 (from June 1, 2018 to May 31, 2019)

Development of Effluent Limitations

Outfall No.	002	Design Flow (MGD)	.029
Latitude	41º 50' 4"	Longitude	-79º 11' 31"
Wastewater	Description:	Treated ash disposal site leachate and stormwater (IW Process	Effluent without ELG)

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Table 1. Applicable Technology Limits (Federal and State):

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
	15	Average Monthly	423.12(b)(11)*	95.2(2)(i)
Oil and Grease	20	Daily Maximum	423.12(b)(11)*	
	30	IMAX		95.2(2)(i)
Total Suspended	30	Average Monthly	423.12(b)(11)*	
Solids	100	Daily Maximum	423.12(b)(11)*	
pH	6.0 – 9.0 S.U.	Min – Max	423,12(b)(1)*	95.2(1)
Dissolved Iron	7.0	Daily Maximum		95.2(4)

* Federal Effluent Limitation Guidelines ("ELGs"): DEP previously determined that no ELGs apply to outfall 002's wastewater. However, the 2015 Final Rule revising the Steam Electric Power Generating ELGs included effluent limits for sources that were previously regulated as part of "low volume waste sources" or that were otherwise unregulated. Pursuant to 40 CFR § 423.11(r), combustion residual leachate is a regulated wastewater under 40 CFR §§ 423.12(b)(11) and 423.13(l). Leachate from the old ash disposal site would be classified as "combustion residual leachate" pursuant to the specialized definition in § 423.11(r). Applicable ELG requirements are listed in the table below.

DEP previously imposed the following case-by-case effluent limits and monitoring requirements pursuant to 40 CFR § 125.3 and Best Professional Judgement (BPJ).

Pollutant	Average of daily values for 30 consecutive days (mg/L)	Maximum for any 1 day (mg/L)	
TSS	30.0	70.0	
Iron	3.5	7.0	
рН	within the range of 6.0 to 10.0		

Table 2. BPJ TBELs for Old Ash Disposal Site:

Comments: The permit currently has a BAT daily maximum limit of 70 mg/l for TSS which was derived from the Acid or Ferruginous Mine Drainage ELG (40 CFR 434.32) which is still being achieved. The previous limit will remain as a BPJ limit in the permit since it is more stringent than the current ELG (see "Anti-Backsliding" discussion). Since the existing BPJ TBEL for total iron using the multiplier is the same as the tech-based dissolved Iron daily max, the dissolved limit is not needed and was omitted.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment 1) determined the following parameters were candidates for limitations: Total Dissolved Solids (TDS), Total Boron, Dissolved Iron, Total Manganese, Total Mercury, Total Nickel, Total Phenols (Phenolics), and Total Thallium.

The following limitations were determined through water quality modeling (Attachment 2): N/A

Best Professional Judgment (BPJ) Limitations

Table 3. Summary of BPJ Limitations:

Parameter	Limit (mg/l) SBC		Model		
Chloride	Monitor & Report	Average Quarterly	Collecting data to evaluate mussel protection		
Nickel	Monitor & Report	Average Quarterly	Collecting data to evaluate mussel protection		

Comments: Chloride and Nickel monitoring is proposed due the presence of threatened and endangered mussel species in the Allegheny River. See the "Threatened and Endangered Mussel Species Concerns and Considerations" discussion on Page 9 of this Fact Sheet.

Anti-Backsliding

EPA's anti-backsliding regulation at 40 CFR § 122.44(I)(1) requires that reissued permits contain effluent limitations, standards, or conditions that are at least as stringent as the effluent limitations, standards, or conditions in the previous permit even if less stringent Federal Effluent Limitations Guidelines applicable to the discharge were promulgated after the BPJ TBELs were imposed. Therefore, both the ELG TBELs and BPJ TBELs will apply with the more stringent of the overlapping limits (70 mg/L TSS maximum daily limit) imposed in the permit consistent with 40 CFR § 122.44(I)(2).¹

Other Comments

The Oil and Grease sampling frequency has been established as 1/month rather than 1/week due to the non-detect results provided in the application sampling data oil and grease is not expected to be present in the effluent.

¹ 40 CFR § 122.44(I)(2): "In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit."

Threatened and Endangered Mussel Species Concerns and Considerations

The Allegheny River is known to contain state and federally listed threatened and endangered mussel species. Due to this being a direct discharge to the Allegheny River, potential impacts were evaluated.

The USFWS has indicated in comment letters on other NPDES permits, that to protect threatened and endangered mussel species, wastewater discharges containing ammonia-nitrogen (NH3-N), chloride (Cl-) and nickel, where mussels or their habitat exist, can be no more than 1.9 mg/l, 78 mg/l and 7.3 µg/l, respectively.

Although the current application form associated with the subject NPDES permit renewal does require sampling for ammonianitrogen, chloride, and nickel, NPDES permits for industrial wastewater treatment facilities of this nature do not, generally, include routine monitoring requirements for pollutants such as ammonia-nitrogen, chloride and nickel. Chloride sampling was not completed at the time of this permit renewal application submittal as received on September 29, 2016. Therefore, with exception of the permit renewal application sampling for ammonia-nitrogen and nickel, the Department has limited data to support its determination that a properly constructed, operated and maintained industrial wastewater treatment facility of this size is expected to produce an effluent that would be protective of all the uses of the receiving stream including threatened and endangered mussels.

Sampling Data for USFWS Parameters of Concern								
Parameter Min. Max.								
Ammonia-Nitrogen (NH₃-N) (mg/L)	0.42	0.44						
Chloride (mg/L)	Not Sampled	Not Sampled						
Nickel (µg/L) 49.9 52.6								
NOTES: 1. The samples are all composite samples.								

A summary of the data is as follows:

Based on this sampling data, the existing discharge from the generating station is not believed to be having any adverse impacts to threatened or endangered mussel species in the Allegheny River. The ammonia-nitrogen concentration is far below the USFWS criteria. Although the nickel concentration in the effluent exceeds the USFWS criteria (52.6 μ g/L compared to 7.3 μ g/L), nickel in the Allegheny River at the point of discharge is not expected to be measurable at levels that would exceed the USFWS criteria considering the instantaneous assimilative capacity of the Allegheny River is expected (0.029 MGD = 0.045 cfs wastestream compared to the 1017.88 cfs Q₇₋₁₀ stream flow => 1:22620 ratio of waste flow to stream flow).

Considering the lack of data for Chloride and the exceedance of the nickel criteria, the Department will establish quarterly effluent monitoring for Chloride and Nickel to develop a dataset to further evaluating potential impacts in the upcoming permit term. Chloride and Nickel monitoring would not typically be required for a permit of this nature.

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 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Effluent Limitations						Monitoring Re	quirements	
Baramotor	Mass Units	(lbs/day) (1)	Concentrations (mg/L)				Minimum ⁽²⁾	Required
Falameter	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	XXX	xxx	XXX	XXX	xxx	Continuous	Measured
pH (S.U.)	xxx	XXX	6.0 Daily Min	xxx	9.0 Daily Max	xxx	Continuous	Recorded
TSS	xxx	XXX	xxx	30	70	75	1/week	24-Hr Composite
Total Iron	xxx	xxx	XXX	3.5	7.0	8.8	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15	20	30	1/month	Grab
		~~~~	N/V/	Report	~~~~	N/V/		24-Hr
Chioride	XXX	XXX	XXX	Avg Qrtiy	XXX	XXX	1/quarter	Composite
Tatal Niekal (u.g.())	VVV	VVV	VVV	Report	VVV	VVV	1/00000000	24-Hr
i otal inickel (µg/l)	XXX	XXX	XXX	Avg Qrtiy	XXX	XXX	1/quarter	Composite

Compliance Sampling Location: at Outfall 002

Other Comments: Changes include Oil and Grease limits and monitoring requirements, Chloride monitoring requirements, and nickel monitoring requirements.

#### Figure 1: eMAP – Stream Designation



### Figure 2: Google Earth Aerial Imagery



# ATTACHMENTS

- ATTACHMENT A: Toxics Screening Analysis Spreadsheets
- ATTACHMENT B: PENTOXSD Modeling Results
- ATTACHMENT C: USGS StreamStats Reports

# ATTACHMENT A

# **Toxics Screening Analysis Spreadsheets**

# NPDES Permit Fact Sheet Keystone Generating Station

	TOXICS SCREENING ANALYSIS WATER QUALITY POLLUTANTS OF CONCERN VERSION 2.6							
	Facility: Warren Generating Station			NPDES Permit No		PA0005	053	Outfall: 002
	Analysis Hardness (mg/L): 31 Stream Flow, Q ₇₋₁₀ (cfs): 1017			Discharge Flow (MGD): 0.029		Analysis pH (SU): 7.4		
	Parameter	A	laximum Concentration in pplication or DMRs (ug/L)	Most Stringent Criterion (µg/L)	Candid PENTOX8D	ate for Modeling?	Most Stringer WQBEL (µg/L	t Soreening Recommendation
_	Total Dissolved Solids		2550000	500000	Ye	5	1.53E+10	No Limits/Monitoring
9	Chloride			250000				
နိ	Sulfate			250000				++
	Fluoride			2000				
	Total Aluminum		61.6	750	N	0		
	Total Arsenic	× ×	0.5	10	No (Valu	e < QL) e < QL)		
	Total Barlum		10.4	2400	N	0		
	Total Beryllum		0.7	N/A	N	0		
	Total Boron Total Cadmium	<	2640	1600	Ye No (Valu	es (OL)	2610000	No Limits/Monitoring
	Total Chromium	<	2	N/A	N	0		
	Hexavalent Chromium	<	10	10.4	N	0		
~	Total Cobalt Total Copper	<	18.2	19	No (Valu	0 (e < QL)		
đ	Total Cyanide	<	10	N/A	N	0		
ŝ	Total Iron		7000	1500	Ye	5	34030000	No Limits/Monitoring
1	Dissolved iron Total Lead	-	7000	300	Ye Ma Olah	5 • < 011	1040000	No Limits/Monitoring
	Total Manganese	~	4880	1000	NO (Valu Ye	re < QL) ts	3480000	No Limits/Monitoring
	Total Mercury		0.1	0.05	Ye	5	174.218	No Limits/Monitoring
	Total Molybdenum		180	N/A	N	0		
	Total Nickel Total Phenois (Phenoics)		52.6	52.2	Ye	5 5	153360.8	No Limits/Monitoring
	Total Selenium		0.8	5.0	N	0		
	Total Silver	۷	0.1	3.8	No (Valu	e < QL)		
	Total Thailum Total Zinc		0.3	0.24	Ye		836.248	No Limits/Monitoring
	Acrolein	<	0.4	3		·		
	Acrylamide	۰		0.07				
	Acryiontrie	< <		0.051				
	Bromoform	<		4.3				
	Carbon Tetrachioride	<		0.23				
	Chlorobenzene	< <		130				
	Chloroethane	<		N/A				
	2-Chloroethyl Vinyl Ether	<		3500				
	Chloroform	<		5.7				
	1,1-Dichioroethane	<		N/A				++
03	1,2-Dichloroethane	<		0.38				
lou	1,1-Dichloroethylene	<		33				
ø	1,3-Dichloropropylene	<		0.34				++
	Ethylbenzene	<		530				
	Methyl Bromide	<		47				
	Methylene Chloride	<		4.6				
	1,1,2,2-Tetrachioroethane	<		0.17				
	Tetrachioroethylene	<		0.69				
	1,2-trans-Dichioroethylene	× ×		140				
	1,1,1-Trichloroethane	<		610				
	1,1,2-Trichloroethane	<		0.59				
	Vinyl Chloride	×		0.025				++
	2-Chiorophenol	<		81				
	2,4-Dichlorophenol	<		77				
	2,4-Dimethylphenol 4.6-Dinitro-o-Cresol	< <		130				
40	2,4-Dinitrophenol	<		69				
Ino	2-Nitrophenol	<		1600				
ō	4-Nitrophenol p-Chioto-m-Cresol	< .		470				
	Pentachiorophenol	<		0.27				
	Phenol	<		10400				
	2,4,6-Trichlorophenol	<		1.4				

Toxics Screening Analysis Spreadsheet (v 2.6), 8/26/2019

# ATTACHMENT B

**PENTOXSD** Modeling Results

### **PENTOXSD Analysis Results**

### **Recommended Effluent Limitations**

SWP Basin 18A	Stream Code: 42122			Stream ALLEGHEN	<u>Name:</u> NY RIVER		
RMI	Name	Per Nur	mit nber	Disc Flow (mgd)			
186.21	Warren Gen Sta	PA00	05053	0.0290	_		
		Effluent Limit			Max. Daily	Most S	Stringent
P	arameter	(µg/L)	Gover Crite	ning ríon	Limit (µg/L)	WQBEL (µg/L)	WQBEL Criterion
BORON		2640	INP	JT	4118.824	2610000	AFC
DISSOLVED IF	RON	7000	INP	JT	10921.13	1040000	THH
MANGANESE		4880	INP	JT	7613.584	3480000	THH
MERCURY		0.1	INP	JT	0.156	174.218	THH
NICKEL		52.6	INP	JT	82.064	56457.03	AFC
PHENOLICS (	PWS)	10	INP	JT	15.602	153360.8	THH
THALLIUM	,	0.3	INP	UT	0.468	836.248	THH
TOTAL DISSO	LVED SOLIDS (PWS	2550000	INP	UT	3970000	.533607E+10	THH
TOTAL IRON		7000	INP	UT	10921.13	3.403E+07	CFC

Monday, August 26, 2019

Version 2.0d

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### PENTOXSD

							Mod	leling In	put Data	1					
Stream Code	RMI	Elevatio (ft)	on Di	rainage Area (sq mi)	s	Slope	PWS \ (mg	With (d)		A	pply FC				
42122	186.21	1163	3.00	3140.0	0 0	00000.		0.00			$\checkmark$				
								Stream D	ata						
	LFY	Trib Flow	Stream Flow	n WE Rat	) io	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	<u>Tributa</u> Hard	рн рн	<u>Strear</u> Hard	n pH	<u>Analysi</u> Hard	<u>s</u> pH
	(cfsm)	(cfs)	(cfs)			(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)	(	mg/L)	
Q7-10	0.1	1017.88		0	0	0	0	0	0	31	7.4	0	0	0	0
Qh		0		0	0	0	0	0	0	100	7	0	0	0	0
							D	ischarge I	Data						
١	lame	Perm Numi	hit E ber	xisting Disc Flow	Perr D Fi	mitted )isc low	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	thh PMF	CRL PMF	Disc Hard	Disc pH	
				(mgd)	{m	ngď)	(mgd)						(mg/L)		
Warre	n Gen Sta	PA000	5053	0.029	0.0	029	0.029	0	0	0	0	0	100	7	_
							P	arameter I	Data						
	Parameter	Name		Dis Cor	c i¢	Trib Conc	Dis Daily C\	c Disc / Hour / CV	s Stear ly Con	n Stream c CV	Fate Coe	FOS	Crit Mod	Max Disc Conc	
				(µg/)	-)	(µg/L)	-	r 01	(µg/	L)		0		(µg/L)	
BORON				26	10	0	U. 0	5 U.: E AI	5 0	0	0	0	1	0	
DISSOLV	EDIRON			10	20	0	0.	5 0.	5 0	0	0	0	1	ő	
MEDCUE	NEGE NV			40	4	0	0.	5 03	5 0	ő	0	ő	1	ő	
MERCON				52	6	0	0. n	5 01	5 0	0	0	ŏ	1	ő	
PHENO	ICS (PMS)			1	1	ő	0	5 0	5 0	ő	ő	0	1	0	
THAILIU	M	,		0	3	ő	0	5 0.1	50	0	0	0	1	0	
TOTAL	NSSOLVEI	SOLIDS	(PWS)	2550	000	ő	0.	5 0.0	5 0	0	0	0	1	0	
TOTAL	RON		(, 110)	70	00	0	0.	5 0.	5 0	0	0	0	1	0	

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## NPDES Permit Fact Sheet Keystone Generating Station

Stream Code	n RMI	Elevatio (ft)	on Drai Ai (sq	nage rea mi)	Slope	PWS V (mg	With (d)		Ap F	ply C				
4212	184.76	116	1.00 3	141.00	0.00000		0.00		6	7				
							Stream Da	ata						
	LFY	⊺nib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	<u>Tributar</u> Hard	У рН	<u>Stream</u> Hard	рН	<u>Analysis</u> Hard	<u>k</u> pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)	1	(mg/L)	
Q7-10	0.1	0	1017.96	0	) 0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0 0	Û	0	0	100	7	0	0	0	0
						D	ischarge [	Data						
	Name	Pern Numi	nit Exis ber Di Fl	sting P isc low	ermitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	thh Pmf	CRL PMF	Disc Hard	Disc pH	
			(m	gd)	(mgd)	(mgd)						(mg/L)		_
_				0	0	0	0	0	0	0	0	100	7	
						P	arameter D	Data						
	Parameter	Name		Disc Conc	Trib Cont	Dis Dail( C\	ic Diso y Houri v CV	; Stear ly Con	m Stream c CV	Fate Coe	FOS	Crit Mod	Max Disc Conc	
				(µg/L)	(µg/l	.)		(µg/	L)				(µg/L)	
BORON	N			0	0	0.	.5 0.5	50	0	0	0	1	0	
DISSO	LVED IRON			0	0	0	.5 U.S	5 U 5 N	0	0	0	1	0	
MANG/	ANESE			0	0	0	.5 0.5	5 0	0	ő	ő	1	0	
MERCE	JECT			0	0	ő	5 0.1	5 0	ō	0	0	1	0	
PHENO	L DLICS (PW/S)			ő	ő	o	.5 0.1	5 0	0	0	0	1	0	
THALL	IUM			0	0	0	.5 0.5	5 0	0	0	0	1	0	
TOTAL	DISSOLVED	SOLIDS	S (PWS)	0	0	0	.5 0.4	5 0	0	0	0	1	0	
TOTAL	IRON			0	0	0	.5 0.	5 0	0	0	0	1	0	

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## NPDES Permit Fact Sheet Keystone Generating Station

Strea Cod	m RMil e	Elevati (ft)	on Drai Ai (sq	nage rea mi)	Slope	PWS (mį	With 3d)		Ap	ply ⁼C				
421	22 90.67	86	4.00 3	600.00	0.00000		0,50		6					
							Stream Da	ita						
	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	<u>Tributar</u> Hard	У рН	<u>Strean</u> Hard	рН	Analysis Hard (	<u>⊧</u> pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)	1	(mg/c)	
Q7-10	0.1	0	1376	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0
						C	)ischarge D	Data						
	Name	Pern Num	nit Exis ber Di Fl	sting P isc low	ermitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH	
			(m	ad)	(mgd)	(mgd)						(mg/L)		
-				0	0	0	0	0	0	0	0	100	7	-
						P	arameter D	)ata						
	Parameter	Name		Disc Conc	Trib Cond	Dis Dail C	ic Disc y Hourl V CV	stear y Con	m Stream c CV	Fate Coe	f FOS	Crit Mod	Max Disc Conc	
_				(µg/L)	(µg/L	.)		(µg/	L)				(µg/L)	
BORO	N			0	0	0	.5 0.5	50	0	0	0	1	0	
DISSO	LVED IRON			0	0	0	.5 0.0	, U	0	0	0	1	0	
MANG	ANESE			0	0		5 0.5	5 0	0	0	0	1	õ	
MERC	UKT			0	0	0	5 0.5	5 0	0	ő	ō	1	0	
PHEN	OLICS (PWS)			0	ő	0	.5 0.6	5 0	0	Ő	0	1	0	
THALL	JUM			ō	ő	0	.5 0.5	5 0	0	0	0	1	0	
TOTA	L DISSOLVED	SOLIDS	S (PWS)	0	0	C	.5 0.5	5 0	0	0	0	1	0	
TOTA	LIRON		-	0	0	C	).5 0.4	5 0	0	0	0	1	0	

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### **PENTOXSD Analysis Results**

### Hydrodynamics

S	WP Basir	l	Stream	n Code:			Stream	n Name:			
	18A		42	122			ALLEGH	ENY RIV	ER		
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
					Q7-	-10 Hyd	Irodyna	mics			
186.210	1017.9	0	1017.9	0.04486	0.0003	1.0836	637.43	588.26	1.4738	0.0601	1000+
184.760	1018	0	1018	NA	0.0006	1.0725	615.40	573.82	1.5424	3.728	NA
90.670	1376	0.7735	1375.2	NA	0	0	0	0	0	0	NA
					Q	h Hydr	odynan	nics			
186.210	3160.2	0	3160.2	0.04486	0.0003	1.7838	637.43	357.35	2.7794	0.0319	1000+
184.760	3160.4	0	3160.4	NA	0.0006	1.7655	615.40	348.57	2.9088	1.9767	NA
90.670	4112.8	0.7735	4112.1	NA	0	0	0	0	0	0	NA

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## NPDES Permit Fact Sheet Keystone Generating Station

## PENTOXSD Analysis Results

### Wasteload Allocations

RMI	Name	P P	ermit Nu	umber						
186.21	Warren Ge	n Sta	PA0005	5053						
						AFC				
07-	10: C	CT (min)	15	PMF	0.022	Analysis	pH 7.398	Analysis ł	ardness	31.136
-	Dever	tor ()		Stream	Stream	Trib	Fate	WQC	WQ	WLA
	Parame	eer		(µg/L)	~~	(µg/L)	0001	(µg/L)	(µg/L)	(µg/L)
	PHENOLICS	(PWS)		0	0	0	0	NA	NA	NA
	TOTAL II	RON		0	0	0	0	NA	NA	NA
	DISSOLVE	DIRON		0	0	0	0	NA	NA	NA
	MANGAN	IESE		0	0	0	0	NA	NA	NA
	MERCL	IRY		0	0	0	0	1.4	1.647	829.756
				Dissolved	WQC. C	hemical tra	anslator of 0.	85 applied.		
	NICKE	EL		0	0	0	0	174.492	174.842	88082.04
				Dissolved	IWQC. C	chemical tra	anslator of 0.	998 applied.		
	THALL	UM		0	0	0	0	65	65	32745.74
	BORG	N		0	0	0	0	8100	8100	4080000
TOTAL	DISSOLVED	SOLIDS	(PWS)	0	0	0	0	NA	NA	NA.
						CFC				
Q7-10:	C	CT (min)	720	PM	F 0.153	Analysis	pH 7.399	Analysis	Hardness	31.019
				Stream	Stream	Trib	Fate	WQC	WQ	WLA
	Param	eter		Conc. (µg/L)	CV	Conc. (µg/L)	Coer	(µg/L)	(µg/L)	(µg/L)
	PHENOLICS	S (PWS)		0	D	0	0	NA	NA	NA
	TOTAL I	RON		0	0	0	0	1500	1500	3.403E+07
				WQC = 3	30 day ave	erage. PMF	= 1.			
	DISSOLVE	D IRON		0	0	0	0	NA	NA	NA
	MANGAN	IESE		0	0	0	0	NA	NA	NA
	MERCU	JRY		0 Dissolve	0 	0 Chemical tr	0 anslator of 0	0.77 .85 applied.	0.906	3156.426
	NICK	EL		0 Dissolve	0 d WQC	0 Chemical tr	0 anslator of 0	19.319 997 applied	19.377	67517.02
	THALL	IUM		0	0	0	0	13	13	45296.77
	BORG	<b>N</b>		0	0	0	0	1600	1600	5570000

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### **PENTOXSD Analysis Results**

#### Wasteload Allocations

RMI	Name	Permit N	umber						
186.21	Warren Gen Sta	PA0008	5053						
TOTAL	DISSOLVED SOLIDS	S (PWS)	0	0	0	0	NA	NA	NA
				тн	н				
Q7-10:	CCT (min	) 720	PMF	1	Analysis	spH N	A Analysis	Hardness	NA
Q, - , 0.	Parameter	,	Stream	Stream CV	Trib Conc	Fate Coef	WQC	WQ Obj	WLA
			(µg/L)		(µg/L)		(LQ/L)	(µg/L)	(hävr)
	PHENOLICS (PWS)	}	0	0	0	0	5	5	153360.8
			WQC app	lied at RM	90.67 v	vith a des	ign stream flow	of 1376.	
	TOTAL IRON		0	0	0	0	NA	NA	NA
	DISSOLVED IRON	I	0	0	0	0	300	300	1040000
	MANGANESE		0	0	0	0	1000	1000	3480000
	MERCURY		0	0	0	0	0.05	0.05	174.218
	NICKEL		0	0	0	0	610	610	2120000
	THALLIUM		0	0	0	0	0.24	0.24	836.248
	BORON		0	0	0	0	3100	3100	1.08E+07
TOTAL	DISSOLVED SOLID	S (PWS)	0	0	0	0	500000	500000	1.533607E+10
			WQC app	biled at RM	II 90.67 v	with a dea	sign stream flow	of 1376.	
				c	RL				
Qh:	CCT (mir	n) 72	0 PMF	0.223					
	Parameter		Stream Conc	Stream CV	Trib Conc	Fate Coef	WQC	WQ Obj	WLA
			(µg/L)		(µg/L)		(µg/r.)	(hôrr)	(P8/r_)
	PHENOLICS (PWS	S}	0	0	0	0	NA	NA	NA
	TOTAL IRON		0	0	0	0	NA	NA	NA

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DISSOLVED IRON

MANGANESE

MERCURY

NICKEL

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NA

### PENTOXSD Analysis Results

### Wasteload Allocations

RMI	Name	Permit Num	ber						
186.21	Warren Gen Sta	PA000505	3						
	THALLIUM		0	0	0	0	NA	NA	NA
	BORON		0	0	0	0	NA	NA	NA
TOTAL	DISSOLVED SOLI	DS (PWS)	0	0	0	0	NA	NA	NA

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# ATTACHMENT C

# USGS StreamStats Reports

## NPDES Permit Fact Sheet Keystone Generating Station

StreamStats

ion ID: kspace ID: ked Point (Latitude, Lo e:	sngitude):		PA PA20190730180 41.83333, -79.19 2019-07-30 14:0	911085000 9132 9:36 -0400		
	Lake Erie		The second	P A	5	Ithaca
	Ene	tilean	Hornel		Elmira	
Ashtabula	Real Street	Braditiond	1. Sec. 1.	- Alexandre	1	Binghamton
1	Kr ma	m	ALLEGHE	NY MOUNT	AINS	F. h.
eland	, Oil City	Saint Mary		S.	v	2 Mary
isin Characteristics						
arameter Code	Parameter Description			Value	Unit	
RNAREA	Area that drains to a point on a stream	i .		3140	square	miles
LEV	Mean Basin Elevation			1784.2	feet	
RECIP	Mean Annual Precipitation			43	inches	
w-Flow Statistics Paramet	EF 52/0 Parcent (3110 separate militar) Law Ploce Region 34					
arameter Code	Parameter Name	Value	Units	Min Limi	it	Max Limit
RNARFA	Drainage Area	3140	square miles	2.33		1720
LEV.	Mean Basin Elevation	1784.2	feet	898		2700
holder 1	Mean Annual Precipitation	43	inches	38.7		47.9
RECIP						
RECIP w-Flow Statistics Disclaim	CFS(49 Percent (3) 13 aguare milits) Low Play Region 8(					
RECIP w-Flow Statistics Disclaim One or more of the param careful to evaluate the ap available regional equatio	BTS(#Procest ()) 19 again milicition/Hon Magin 3) eters is outside the suggested range. Estimates were o plicability of the provided estimates. Percentage of aro ms.	extrapolated with a falls outside v	n unknown errorsWeigh where region is undefin	ted flows were no ed. Whole estimat	t calculate es have be	d. Users should en provided usir
RECIP ow-Flow Statistics Disclaim One or more of the param careful to evaluate the ap available regional equation ow Flow Statistics Flow Reg	BTS jes Percent (3113 agare miles) Low Pleve Region 3] eters is outside the suggested range. Estimates were o plicability of the provided estimates. Percentage of an offs.	intrapolated with a falls outside v	i unknown errorsWeigh where region is undefin	ited flows were not ed. Whole estimat	t calculate es have be	d. Users should l en provided usin
RECIP ow-Flow Statistics Disclaim One or more of the param careful to evaluate the ap available regional equation ow-Flow Statistics Flow Rep tratistic	Ef5[69Peccer (0118 aguermino) LowPion Region 3] eters is outside the suggested range. Estimates were o plicability of the provided estimates. Percentage of an ons. DOIT[19Peccent (0118 squeermino) Low Fisce Region 3]	atrapolated with a falls outside v	n unknown errorsWeigh where region is undefin Value	ted flows were not ed. Whole estimat	t calculate es have be Unit	d. Users should I en provided usin
RECIP ow-Flow Statistics Disclaim careful to evaluate the ap available regional equation ow-Flow Statistics Flow Rep tatistic Day 2 Year Low Flow	855(49 Percent (3) 18 aguerenile() Low Pleve Region 3) eters is outside the suggested range. Estimates were of plicability of the provided estimates. Percentage of are one. pOrt[ppPercent (3) 18 operenvise) Low Pleve Region 3]	atrapolated with a falls outside v	unknown errorsWeigh obere region is undefin Value 413	ted flows were not ed. Whole estimat	unit ft*3/s	d. Users should en provided usin
RECIP ow-Flow Statistics Disclaim one or more of the param careful to evaluate the ap available regional equation ow Flow Statistics Flow Rep tatistic Day 2 Year Low Flow 0 Day 2 Year Low Flow	BTS jes Percent (3113 agare mile) Low Pleve Region 3] eters is ouriside the suggested range. Estimates were of plicability of the provided estimates. Percentage of arc sts. DOC[jisPercent.(3118 operenties) Low Pleve Region 3]	extrapolated with	t unknown errorsWeigh where region is undefin Value 413 527	ted flows were not	Unit ft*3/s ft*3/s	d. Users should i en provided usin
RECIP ow-Flow Statistics Disclaim one or more of the param careful to evaluate the ap available regional equatio gw-Flow Statistics Flow Rep tatistic Day 2 Year Low Flow 0 Day 2 Year Low Flow Day 10 Year Low Flow	BTS jes Percent (3113 agare miles) Low Pleve Region 3] eters is outside the suggested range. Estimates were of plicability of the provided estimates. Percentage of arc sts. portpro-proved (3113 square miles) Low Place Region 3]	atrapolated with	r unknown errorsWaigh where region is undefin Value 413 527 250	ted flows were not	Unit ft*3/s ft*3/s	d. Users should i ren provided usin
RECIP ow-Flow Statistics Disclaim One or more of the param careful to avaluate the ap available regional equation ow-Flow Statistics Flow Rep tatistic Day 2 Year Low Flow Day 2 Year Low Flow Day 10 Year Low Flow	BTS jes Persen (3118 agases miles) Low Pleve Region 3] esters is outside the suggested range. Estimates were of plicability of the provided estimates. Percentage of arc ents. portporterent (3118 operanded) Low Plane Region 3] (	extrapolated with	vunknown errors/Weigh unkere region is undefin Value 413 527 250 303	ted flows were not	unit ft*3/s ft*3/s ft*3/s	d. Users should i
RECIP ow-Flow Statistics Disclaim careful to avaluate the ap available regional equation ow-Flow Statistics Flow Rep tatistic Day 2 Year Low Flow Day 10 Year Low Flow 0 Day 10 Year Low Flow 0 Day 10 Year Low Flow	BTS jes Percent (3113 agare mile) Low Play Region 3] eters is outside the suggested range. Estimates were of plicability of the provided estimates. Percentage of an ms. DOIT[jisPercent.(3118 operended) Low Play Region 3] ( W	extrapolated with	n unknown errors/Weigh where region is undefin Value 413 527 250 303 416	ted flows were no ed. Whole estimat	Unit ft*3/s ft*3/s ft*3/s ft*3/s ft*3/s	d. Users should I

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7/30/2019

ithaca
Homeil Elmira Binghamton
Edd I.
LLEGHENY MOUNTAINS

# Allegheny River just below Morse Run (RMI 184.76)

annator Codo	Parameter Description			Value U	Init
DNADEA	Area that drains to a point on a 6	tream		3140 8	ouare miles
IRNAREA	Mees Back Flavation	(ream		1783 7 6	eet
LEV	Mean basin clevation			42	eet
PRECIP	Mean Annual Precipitation			43 0	nches
ow-Flow Statistics Param	effet Sites men wa (2120 aga an mila aj Lave Fine Ragion II)				
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3140	square miles	2.33	1720
ELEV	Mean Basin Elevation	1783.7	feet	898	2700
			lashes	7 90	47.9
PRECIP	Mean Annual Precipitation	43	inches	30.7	
PRECIP .ow-Flow Statistics Discla	Mean Annual Precipitation	43	inches	36.7	545735
PRECIP ,ow-Flow Statistics Discla One or more of the par- careful to evaluate the available regional equa	Mean Annual Precipitation INECSIPPeeret (FITE square-mini) Law Row Region 3 amothers in outside the suggested range. Estimates applicability of the provided estimates. Percentage tions.	43 were extrapolated wit of area falls eutside	incres h unknown errorsWeight where region is undefine	30.7 ed flows were not ca d. Whole estimates I	slouisted. Users shoui have been provided us
ow-Flow Statistics Discla One or more of the par- careful to evaluate the available regional equa Low-Flow Statistics Flow F	Mean Annual Precipitation imerStereneet (2028 square-mini) Law Row Regon 3 ameters is outside the suggested range. Estimates applicability of the provided estimates. Percentage tions.	43 were extrapolated wit of area fails outside :	incries h unknown errorsWeight where region is undefine	36.7 ed flows were not ca d. Whole estimates l	sloulisted. Users shoul have been provided us
ow-Flow Statistics Discla One or more of the para careful to evaluate the available regional equa Low-Flow Statistics Flow 1 Statistic	Mean Annual Precipitation IMERSpresser (STOR space-mix) Law Row Report) emeters is outside the suggested range. Estimates applicability of the provided estimates. Percentage tions.	43 were attrapolated wit r of area falls eutside	incres h unknown errorsWeight where region is undefine Value	.30.7 Ied flows were not ca cf. Whole estimates i	Ilculated. Users shoul have been provided us Jinit
ow-Flow Statistics Discla One or more of the par careful to evaluate the available regional equa Low-Flow Statistics Flow f Statistic 7 Day 2 Year Low Flow	Mean Annual Precipitation IME/Storewood (2020 equivarial) Law Row Report) emoters is outside the suggested range. Estimates applicability of the provided estimates. Percentage tions. toport/performance/2020 report relation flow Report) N	43 were extrapolated wit	incries h unknown errorsWeight where region is undefine Value 413	30.7 ed flows were not ca d. Whole estimates i L	Ilculated. Uaera ahouli have been provided us Juit I^3/8
ow-Flow Statistics Discla One or more of the par- careful to evaluate the available regional equa Low-Flow Statistics Flow f Statistic 7 Day 2 Year Low Flov 30 Day 2 Year Low Flov	Mean Annual Precipitation IMEEStarewart (2020 again mini) Law Row Report) ameters is outside the suggested range. Estimates applicability of the provided estimates. Percentage flons. Report/HeRewart (2020 space mino) Law Row Report) W	43 were extrapolated wit of area fails outside	h unknown errorsWeight where region is undefine Value 413 527	.30.7 Ied flows were not ca d. Whole estimates i L f	ilculated. Users shoul have been provided us <b>Jnit</b> It^3/8 It^3/8
ow-Flow Statistics Discla One or more of the par- careful to evaluate the available regional equa low-Flow Statistics Flow f Statistic 7 Day 2 Year Low Flow 30 Day 2 Year Low Flo 7 Day 10 Year Low Flo	Mean Annual Precipitation IMEESpreaments (STOR square mini) Law Row Regon 3 ameters is outside the suggested range. Estimates applicability of the provided estimates. Percentage tions. Reportprevener (STOR square mini) Law Row Regor 3 N Sou	43 were extrapolated wit	h unknown errorsWeight where region is undefine Value 413 527 250	.30.7 ied flows were not ca d. Whole estimates I L f f	lloulated. Users shoul have been provided us <b>Jnit</b> 11^3/6 11^3/8
ow-Flow Statistics Discla One or more of the par- central to evaluate the available regional equa Low-Flow Statistics Flow F Statistic 7 Day 2 Year Low Flow 30 Day 2 Year Low Flo 30 Day 10 Year Low Flo	Mean Annual Precipitation imerspondent (STOR space miniciples flow Report) emeters is outside the suggested range. Estimates applicability of the provided estimates. Percentage tions. Reportprevener(STOR space miniciples flow Report) N N Sow Sow Tow	43 were attrapolated wit of area falls eutside	h unknown errorsWeight where region is undefine Value 413 527 250 303	Job. 7 Ied flows were not ca cf. Whole estimates I L f f f	Ilculated. Users shoul have been provided us <b>Jnit</b> 11^3/8 11^3/8 11^3/8
A Constant of the para control of the para control to evaluate the available regional equa control to evaluate the available regional equa control of the para control of the para available regional equa control of the para control of the para con	Mean Annual Precipitation IMEES In outside the suggested range. Estimates applicability of the provided estimates. Percentage tions. TopOrthe Percent (212) agains wire) Lev Row Taylor 3( N Sw Low Low Low	43 were attrapolated wit	h unknown errorsWeight where region is undefine 413 527 250 303 416	30.7 ed flows were not ca d. Whole estimates I L f f f f	liculated. Users shoul have been provided us Jnit Il^3/8 Il^3/8 Il^3/8 Il^3/5 Il^3/5

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https://streamstats.usgs.gov/ss/

7/30/2019



### Nearest PWS - Aqua Pa, Emlenton (RMI 90.67)

Basin Characteristics			
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6390	square miles

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