Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0008761**
Facility Type	**Industrial**	APS ID	**34617**
Major / Minor	**Minor**	Authorization ID	**1513854**

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

Applicant and Facility Information

Applicant Name	**Armstrong World Industries, Inc.**	Facility Name	**Armstrong World Industries – Marietta Ceiling Plant**
Applicant Address	1507 River Road Marietta, PA 17547-9403	Facility Address	1507 River Road Marietta, PA 17547-9403
Applicant Contact	Zachary Knock	Facility Contact	Zachary Knock
Applicant Phone	(717) 917-0379	Facility Phone	(717) 917-0379
Client ID	40742	Site ID	238314
SIC Code	3999	Municipality	East Donegal Township
SIC Description	Manufacturing Industries, Not Elsewhere Classified	County	Lancaster
Date Application Received	January 27, 2025	EPA Waived?	Yes
Date Application Accepted	February 4, 2025	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Armstrong World Industries has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued on August 12, 2020, and became effective on September 1, 2020, authorizing discharge of treated sewage from the Marietta Ceiling Plant into Susquehanna River. The existing permit expiration date was August 31, 2025, and the permit has been administratively extended since that time.

Per the previous fact sheet, a new secondary treatment plant was constructed at Armstrong in October 2003. Process water is settled at the primary treatment plant where 1,200 gpm is recycled and 550 gpm is sent to the secondary treatment plant. The plant consists of a 131' diameter concrete tank that is divided into a storage tank, equalization, activated sludge aeration, and a final clarifier. 350 gpm of flow will be recycled back to the manufacturing process, and the remaining 200 gpm will discharge to the Susquehanna River. Armstrong currently produces ceiling tile, however; many years ago carpet was being produced which resulted in the facility being included on EPA's Major Discharge List. Since carpet is no longer manufactured here, a reevaluation was submitted on March 22, 1999 to remove them from the list. EPA removed them from the list on May 27, 1999.

Changes in this renewal: A quarterly monitoring requirement for PFOA, PFOS, PFBS, and HFPO-DA has been added to the permit. Stormwater monitoring requirements have been updated to include Total Nitrogen and Total Phosphorus.

Supplemental information for this facility is provided at the end of this fact sheet.

Public Participation

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	November 19, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	December 18, 2025

Summary of Review
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, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.289
Latitude	40º 3' 21.9"	Longitude	76º 35' 50.8"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Susquehanna River (WWF, MF)	Stream Code	06685
NHD Com ID	57464871	RMI	33.4
Drainage Area	25, 900 mi^2	Yield (cfs/mi^2)	0.126
Q_{7-10} Flow (cfs)	3,263	Q_{7-10} Basis	USGS Gage # 01576000
Elevation (ft)	241	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	High pH, Mercury, Polychlorinated Biphenyls		
Source(s) of Impairment	Agriculture, Source Unknown, Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	5.5

Changes Since Last Permit Issuance: A drainage area of 25,900 mi^2 and a Q_{7-10} flow of 3,263 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576000 on the Susquehanna River. The Q_{7-10} and drainage area at the gage are 3,270 cfs and 25,990 mi^2, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q_{7-10} runoff rate at the gage station was calculated as follows:

Yield = (3,270 cfs)/ 25,990 mi^2 = 0.126 cfs/mi^2

The drainage area at the discharge point, taken from USGS PA StreamStats = 25,900 mi^2

The Q_{7-10} at the discharge point = 25,900mi^2 x 0.126 cfs/mi^2 = 3,263 cfs

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002, 003, 004, 005, 006, 007	Design Flow (MGD)	Variable (Stormwater)
	40º 3' 19.1" (002)		76º 34' 43" (002)
	40º 3' 21.4" (003)		76º 34' 57" (003)
	40º 3' 23.7" (004)		76º 34' 10.9" (004)
	40º 3' 26.1" (005)		76º 34' 24.9" (005)
	40º 3' 29.2" (006)		76º 34' 38.5" (006)
Latitude	40º 3' 32.3" (007)	Longitude	76º 34' 50.8" (007)
Quad Name		Quad Code	
Wastewater Description:	Stormwater		

Receiving Waters	Susquehanna River (WWF)	Stream Code	06685
NHD Com ID	57464833	RMI	33.4
Drainage Area	25,900 ft^2	Yield (cfs/mi^2)	0.126
Q_{7-10} Flow (cfs)	3,263	Q_{7-10} Basis	USGS Gage # 01576000
Elevation (ft)	241	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	High pH, Mercury, Polychlorinated Biphenyls		
Source(s) of Impairment	Agriculture, Source Unknown, Source Unknown		
TMDL Status	N/A	Name	N/A

Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	5.5

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Secondary	Extended Aeration	No Disinfection	0.289
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.289		Not Overloaded	N/A	N/A

Changes Since Last Permit Issuance: None

Other Comments: The industrial wastewater treatment process consists of: Thickener Tank, Primary Clarifier, Water Storage Tank, Aerated Equalization Tank, Aeration Tank, Final Clarifier, Outfall 001.

The sludge generated by the treatment process is recycled back to the ceiling tile process.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	10/29/2020: A routine inspection was conducted. The south clarifier was offline, and the north clarifier appeared clear with coarse brown pin floc. The effluent trough weirs had little to no algae growth and were free of solids. The clarifier effluent appeared tinted orange/brown. The effluent was orange/brown. The outfall pipes in the Susquehanna River were below river level and only one was visible. The discharge appeared darker than the river water. 12/7/2020: An administrative inspection was conducted. On 12/4, DEP was notified that a release of partially treated wastewater to a stormwater outfall had occurred. The volume was estimated to be 5,000-7,000 gallons. A break was found within the return line from the primary clarifier back to the ceiling processing plant. Temporary repairs were completed at 18:00. An incident report was received on 12/9. 3/18/2021: An incident inspection was conducted. On 3/17, DEP received a phone call regarding an overflow of perlite and process water. The overflow occurred due to a blockage within the expander tanks piping. The overflow volume was estimated to be 2,000 gallons with about 200 lbs. of perlite. The volume that entered the stormwater conveyance was estimated to be 500 gallons and 50 lbs. of perlite. The impacted stormwater inlet and surrounding asphalt surface was inspected. A small amount of perlite was visible on asphalt near the expander tank building and surrounding stormwater inlet. Wool was also visible on the ground near the wool receiving dock. An approximate 3' x 4' accumulation of perlite was visible with the receiving water, downstream of Outfall 006. IT was believed that the perlite entered the river through Outfall 007, which had several smaller visible perlite accumulations. It was recommended that the perlite be cleaned from the waterway. 8/7/2023: A complaint inspection was conducted. DEP received an anonymous report that a diesel spill had occurred onsite and that proper cleanup procedures were not being followed. A concern was also noted about the spill making it to uncovered storm drains. Due to operator error, a valve on a rental compressor unit was left open, allowing the diesel to overflow from the tank to the ground. DEP observed no impact to the stormwater drains closest to the release; the soil and crushed stone in the immediate area of the overflow appeared stained and some sheen was visible. The spill was addressed by closing the valve and sucking up the diesel and water into a 55 gallon drum. Absorbent pads and oil-dri were used to clean up residual sheens. No signs of pollution were noted at Outfalls 001-007. A 5-day spill report was received from Armstrong World Industries on 8/8/2023.

Other Comments: There are currently no open violations for this Applicant.

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.190701	0.166354	0.175249	0.199361	0.211267	0.228826	0.216175	0.220947	0.171193	0.146197	0.167	0.155259
Flow (MGD) Daily Maximum	0.17942	0.188763	0.201888	0.208258	0.234745	0.246	0.240873	0.250472	0.225558	0.166692	0.179	0.178
pH (S.U.) Instantaneous Minimum	7.9	8.0	7.9	7.8	7.8	7.8	7.8	7.7	7.9	7.8	7.9	7.9
pH (S.U.) Instantaneous Maximum	8.4	8.3	8.3	8.1	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.1
CBOD5 (lbs/day) Average Monthly	< 19	< 27	< 57	< 17	< 114	< 45	< 106	< 60	< 26	< 25	< 64	< 25
CBOD5 (lbs/day) Daily Maximum	< 32	35	116	< 35	304	53	330	149	< 37	< 26	137	< 28
CBOD5 (mg/L) Average Monthly	< 12	< 24	< 39	< 21	< 63	< 23	< 60	< 32	< 20	< 20	< 45	< 20
CBOD5 (mg/L) Daily Maximum	< 20	42	80	25	170	31	180	79	< 20	< 20	94	< 20
TSS (lbs/day) Average Monthly	19	39	68	18	84	47	65	43	21	28	32	26
TSS (lbs/day) Daily Maximum	8	96	99	47	102	66	124	56	35	39	49	37
TSS (mg/L) Average Monthly	12	34	44	28	47	24	40	23	17	22	23	21
TSS (mg/L) Daily Maximum	25	66	59	46	57	33	69	30	28	30	34	26
Total Dissolved Solids (lbs/day) Average Monthly	1201	1034	1586	782	1584	1706	1537	1793	1265	1157	1444	1054
Total Dissolved Solids (mg/L) Average Monthly	783	878	1035	983	870	884	955	954	968	910	1018	850
Total Dissolved Solids (mg/L) Daily Maximum	880	930	1200	1100	920	960	1000	980	1100	1200	1200	920
Sulfate (lbs/day) Average Monthly	10	< 7.0	< 5	< 5	< 9	< 14	< 11	< 20	< 10	< 10	< 11	< 9

Sulfate (mg/L) Average Monthly	6.8	< 5.3	< 3	< 6.8	< 4.7	< 7.5	< 7.1	< 10.5	< 7.5	< 7.5	< 7.5	< 7.6
Sulfate (mg/L) Daily Maximum	9.4	17	< 7.5	< 7.5	< 7.5	< 7.5	12	13	< 7.5	< 7.5	< 7.5	7.7
Chloride (lbs/day) Average Monthly	241	201	346	120	265	264	221	301	253	229	235	221
Chloride (mg/L) Average Monthly	158	174	225	160	145	138	138	160	195	180	166	180
Chloride (mg/L) Daily Maximum	190	200	280	200	180	160	150	180	200	190	190	200
Bromide (lbs/day) Average Monthly	49	42	55	15	88	< 37	< 20	35	40	39	40	< 68
Bromide (mg/L) Average Monthly	32	36	36	21	48	< 20.1	< 11.4	19	31	31	28	< 55
Bromide (mg/L) Daily Maximum	38	43	40	29	110	40	20	22	33	35	40	170

DMR Data for Outfall 004 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
pH (S.U.) Daily Maximum						GG						GG
TSS (mg/L) Daily Maximum						GG						GG
Total Zinc (mg/L) Daily Maximum						GG						GG

DMR Data for Outfall 005 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
pH (S.U.) Daily Maximum						7.05						8.36
TSS (mg/L) Daily Maximum						59.2						7.0
Total Zinc (mg/L) Daily Maximum						< 0.100						0.142

DMR Data for Outfall 006 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
pH (S.U.) Daily Maximum						GG						GG

TSS (mg/L) Daily Maximum						GG						GG
Total Zinc (mg/L) Daily Maximum						GG						GG

DMR Data for Outfall 007 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
pH (S.U.) Daily Maximum						7.14						8.19
TSS (mg/L) Daily Maximum						113						10.4
Total Zinc (mg/L) Daily Maximum						0.215						< 0.100

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2024 To: May 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	01/31/25	Daily Max	170	mg/L	160	mg/L
CBOD5	11/30/24	Daily Max	180	mg/L	160	mg/L

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Report	Report	XXX	80	160	200	1/week	24-Hr Composite
Total Suspended Solids	Report	Report	XXX	80	160	200	1/week	24-Hr Composite
TDS	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chloride	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Sulfate	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Outfall 004-007

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	.289
Latitude	40º 3' 21.9"	**Longitude**	76º 35' 50.8"

Wastewater Description: IW Process Effluent without ELG

pH

PA Code §§ 95.2(1) requires effluent pH limits of 6.0 to 9.0 S.U. at all times in effluent. The permit will continue to require pH limit of 6.0 to 9.0 S.U.

Total Dissolved Solids (TDS)

DEP's SOP No. BCW-PMT-032 states that at a minimum, a monitoring requirement should be established for TDS for any discharge that exceeds 1,000 mg/l. Armstrong reported a maximum effluent value of 1,500 mg/l for TDS in the NPDES application. Therefore, monitoring for TDS, Chloride, Bromide, and Sulfate will remain in the permit renewal.

Total Suspended Solids

DEP's SOP No. BPNPSM-PMT-032 states that Best Professional Judgment (BPJ) Technology-Based Effluent Limits (TBELs) should be developed for TSS if the concentration exceeds 100 mg/l in the permit application or DMRs. The maximum TSS concentration from the application is 100 mg/l, therefore it is not necessary to develop a limit. However, the existing permit has an average monthly limit of 80 mg/l and instantaneous maximum limit of 200 mg/l for TSS, which will remain in the permit.

$CBOD_5$ / NH_3-N

DEP's SOP No. BPNPSM-PMT-032 states that the WQM 7.0 Model should be run if the maximum BOD_5 concentration exceeds 100 mg/l in the permit application or DMRs. The maximum BOD_5 concentration form the application is 42.8 mg/l, therefore it will not be necessary to run the WQM 7.0 Model. There is an existing average monthly limit of 80 mg/l and instantaneous maximum limit of 200 mg/l for $CBOD_5$, which will remain in the permit.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the Pennsylvania Chesapeake Watershed Implementation Plan (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 3 WIP. As part of the Phase 3 WIP, a Phase 3 Watershed Implementation Plan Wastewater Supplement (Phase 3 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. The Phase 3 Supplement was most recently revised on April 2, 2025. Industrial discharges have been prioritized by Central Office based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. DEP developed a Chesapeake Bay industrial waste (IW) monitoring plan for all industrial facilities that discharge to the Chesapeake Bay. This facility is classified as a non-significant discharger with little or no potential to introduce nutrients to the receiving stream; therefore, no monitoring for TP and TN series will be required at this time for Outfall 001.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Default stream hardness and pH values were used in the spreadsheet. Based on effluent sample results reported on the application, the Toxics Management Spreadsheet did not recommend any additional parameters receive monitoring or limits.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. The results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Since the reported maximum concentrations were less than 10% of their respective WQBEL, per DEP's SOP No. BPNPSM-PMT-033, no additional limits or monitoring are necessary.

Chemical Additives

The following chemical additives are currently used at the plant and are expected to be present in the effluent:

Chemical Additive	Purpose	Maximum Usage (lb/day)	Usage Frequency
3D Trasar 3DT465	Antiscale	13,369	Constant Feed
Advantage 1490	Defoamer	2,395	Constant Feed
DeAirex 8061	Defoamer	4,299	Constant Feed
Infinity SL4369	Antiscale	12,976	Constant Feed
Nalco 1720	Oxygen Scavenger	2,365	Intermittent
Nalco 60103	Defoamer	18,986	Constant Feed
Nalco 7346 TAB	Chlorine tablets for cooling tower	3.64	As Needed
NexGuard 22310	Corrosion Inhibitor	5,569	Intermittent
Rezosol 4609	Release Agent	0.81	Constant Feed
Spectrum RX 3510	Biocide	89.09	As Needed
Spectrum RX 5080	Biocide	250	2/Day
Spectrum RX 9100	Biocide	290	2/Day
Spectrum XD 3899	Biocide	5,019	Intermittent
Spectrum XD 8800	Biocide	235	Hourly
Spectrum XD 8904	Biocide	16,564	Daily
NexGuard 22358	Corrosion Inhibitor	10,211	Intermittent
Spectrum RX7845	Biocide	229	
Infinity SL-4335	Antiscale	7,923	Continuous (24/7)
Zenix DZ-4393	Antiscale	939.42	
Resozol 4609	Release Agent	65	Daily Intermittent
Infinity PS6965	Antiscale	483	Daily Intermittent

These chemicals have been added to DEP's Approved List of Chemical Additives. The permit will include Part C conditions for chemical additive usage and reporting requirements.

PFAS-Related Compounds

DEP's NPDES renewal application for Industrial Waste Facilities now requires effluent testing for PFAS related compounds as part of Pollutant Group 1: Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA). Per DEP's SOP BCW-PMT-032, If sampling that is completed as part of the permit renewal application reveals a detection for any of these compounds, a quarterly monitoring requirement for all compounds will be established in the permit. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for these compounds in a minimum of 3 samples, an annual monitoring requirement for all compounds will be established in the permit. As the PFAS compounds were detected as part of the application sampling, quarterly monitoring requirements will be established for all compounds in this renewal permit. Monitoring for PFOA, PFOS, HFPO-DA, and PFBS may be discontinued if the results in 4 consecutive monitoring periods indicate non-detect results at or below the Target QLs o 4.0 ng/l for PFOA, 3.7 ng/l for PFOS, 3.5 ng/l for PFBS, and 6.4 ng/l for HFPO-DA. The NPDES permit will include this monitoring language as a footnote in Part A of the permit.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an impairment use for fish consumption due to PCB from an unknown source and mercury from an unknown source; and an aquatic life impairment due to pH from an unknown source.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

Development of Effluent Limitations

Outfall No.	002, 003, 004, 005, 006, 007	**Design Flow (MGD)**	Variable (stormwater)
	40º 3' 19.1" (002)		76º 34' 43.0" (002)
	40º 3' 21.4" (003)		76º 34' 57.0" (003)
	40º 3' 23.7" (004)		76º 34' 10.9" (004)
	40º 3' 26.1" (005)		76º 34' 24.9" (005)
	40º 3' 29.2" (006)		76º 34' 38.5" (006)
Latitude	40º 3' 32.3" (007)	**Longitude**	76º 34' 50.8" (007)

Wastewater Description: Stormwater

Stormwater Limitations

The application lists seven (7) stormwater outfalls for this facility. Outfall 002 receives stormwater from off-site agricultural and highway runoff from 760,000 ft^2. Outfall 003 receives stormwater from an area containing drummed materials, waste latex, and mineral wool transfer. These are all contained and/or under a roof. Outfall 003 also receives stormwater from off-site agricultural and highway runoff. This outfall drains 490,000 ft^2. Outfall 004 receives stormwater from an area containing an enclosed trash compactor, and off-site agricultural and highway runoff from 1,151,000 ft^2. Outfall 005 receives stormwater from an area containing paint transfer, drums and ammonium hydroxide totes (contained), an enclosed trash compactor, storeroom unloading of oils and boiler chemicals (roofed), and raw materials receiving (roofed). Outfall 005 also receives stormwater from off-site agricultural and highway runoff. This outfall drains 870,000 ft^2. Outfall 006 receives stormwater from roofed clay, paper, and mineral wool transfer, contained polymer / defoamer unloading, and contained totes. Outfall 006 also receives stormwater from off-site agricultural and highway runoff. This outfall drains 675,000 ft^2. Outfall 007 receives stormwater from off-site runoff and rail spurs, and drains 1,060,000 ft^2.

The existing permit requires semi-annual monitoring of pH, TSS, and Total Zinc. This facility falls under SIC Code 3999. According to DEP's current NPDES PAG-03 General Permit, SIC Code 3999 is subject to Appendix S permitting requirements. This appendix requirements semi-annual monitoring for the parameters listed in the table below. Total Nitrogen and Total Phosphorus monitoring have been added to the existing monitoring requirements.

Stormwater will be monitored and managed using best management practices. The permittee shall monitor and report analytical results for the parameters listed below on Discharge Monitoring Reports (DMRs) for Outfall 004, 005, 006, and 007. The benchmark values listed on the table are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan.

Parameter	Minimum Measurement Frequency	Sample Type (mg/l)	Benchmark Values
Total Nitrogen	1 / 6months	Calculation	XXX
Total Phosphorus	1 / 6months	Grab	XXX
pH (S.U.)	1 / 6months	Grab	9.0
TSS	1 / 6months	Grab	100
Total Zinc	1 / 6months	Grab	XXX

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
CBOD5	Report	Report	XXX	80	160	200	1/week	24-Hr Composite
TSS	Report	Report	XXX	80	160	200	1/week	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Sulfate	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chloride	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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" (386-0400-001), SOPs and/or BPJ.

Outfall 004, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: 002, 003, 004, 005, 006, 007

Other Comments: None

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-032, No. BPNPSM-PMT-001
☐	Other:

Armstrong World Industries Inc. PA0008761 Outfall 001

Region ID: PA
Workspace ID: PA20251114145708335000
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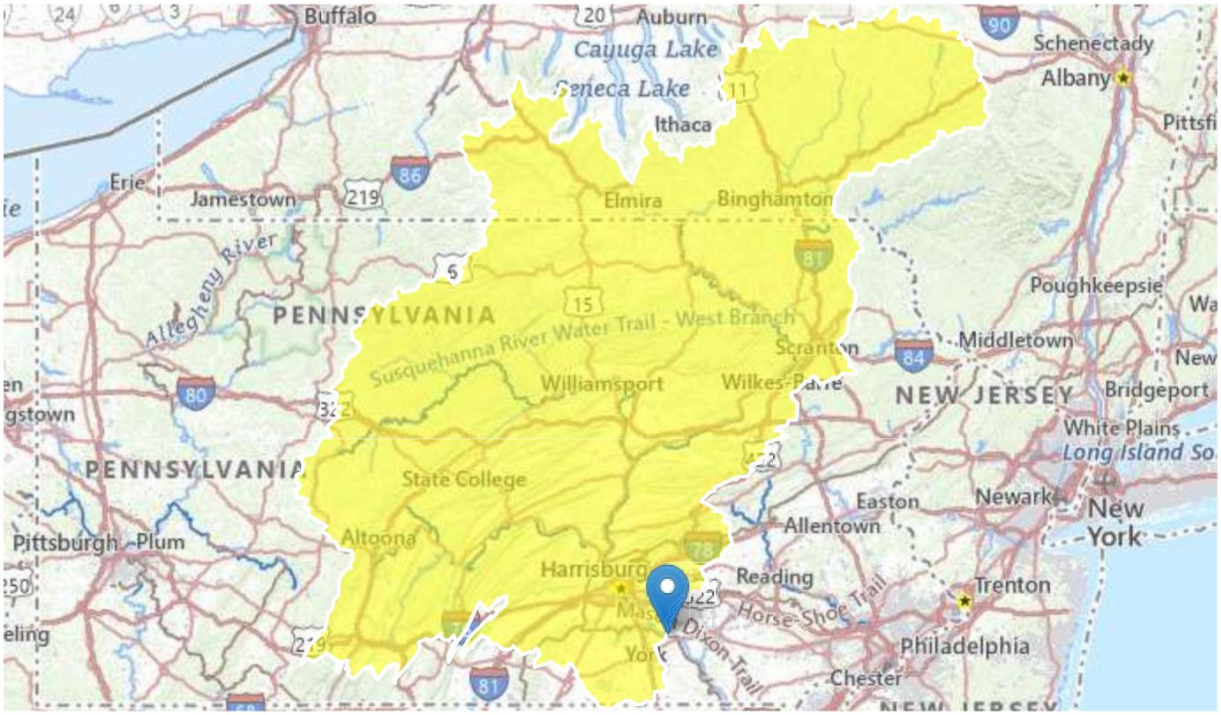
Time: 2025-11-14 09:57:42 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.164	degrees
CARBON	Percentage of area of carbonate rock	6.45	percent
DRNAREA	Area that drains to a point on a stream	25900	square miles
ELEV	Mean Basin Elevation	1334	feet
FOREST	Percentage of area covered by forest	68.0829	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	45.6785	percent

Parameter Code	Parameter Description	Value	Unit
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
URBAN	Percentage of basin with urban development	2.8654	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [3.0 Percent (844 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.164	degrees	1.7	6.4
DRNAREA	Drainage Area	25900	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.8654	percent	0	89

Low-Flow Statistics Parameters [43.0 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6.45	percent	0	99
DRNAREA	Drainage Area	25900	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
STRDEN	Stream Density	1.76	miles per square mile	0.51	3.1

Low-Flow Statistics Parameters [6.0 Percent (1600 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	2.33	1720

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1334	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [48.0 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	4.84	982
FOREST	Percent Forest	68.0829	percent	41	100
GLACIATED	Percent of Glaciation	45.6785	percent	0	100
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1

Low-Flow Statistics Disclaimers [3.0 Percent (844 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [3.0 Percent (844 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9290	ft^3/s
30 Day 2 Year Low Flow	10300	ft^3/s
7 Day 10 Year Low Flow	7270	ft^3/s
30 Day 10 Year Low Flow	7650	ft^3/s
90 Day 10 Year Low Flow	8150	ft^3/s

Low-Flow Statistics Disclaimers [43.0 Percent (11100 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [43.0 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5930	ft^3/s

Statistic	Value	Unit
30 Day 2 Year Low Flow	7000	ft^3/s
7 Day 10 Year Low Flow	4420	ft^3/s
30 Day 10 Year Low Flow	5210	ft^3/s
90 Day 10 Year Low Flow	6480	ft^3/s

Low-Flow Statistics Disclaimers [6.0 Percent (1600 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [6.0 Percent (1600 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2410	ft^3/s
30 Day 2 Year Low Flow	2970	ft^3/s
7 Day 10 Year Low Flow	1450	ft^3/s
30 Day 10 Year Low Flow	1800	ft^3/s
90 Day 10 Year Low Flow	2470	ft^3/s

Low-Flow Statistics Disclaimers [48.0 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [48.0 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3540	ft^3/s
30 Day 2 Year Low Flow	4470	ft^3/s
7 Day 10 Year Low Flow	2280	ft^3/s
30 Day 10 Year Low Flow	2980	ft^3/s
90 Day 10 Year Low Flow	3850	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4670	ft^3/s
30 Day 2 Year Low Flow	5640	ft^3/s
7 Day 10 Year Low Flow	3300	ft^3/s
30 Day 10 Year Low Flow	4010	ft^3/s
90 Day 10 Year Low Flow	5030	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
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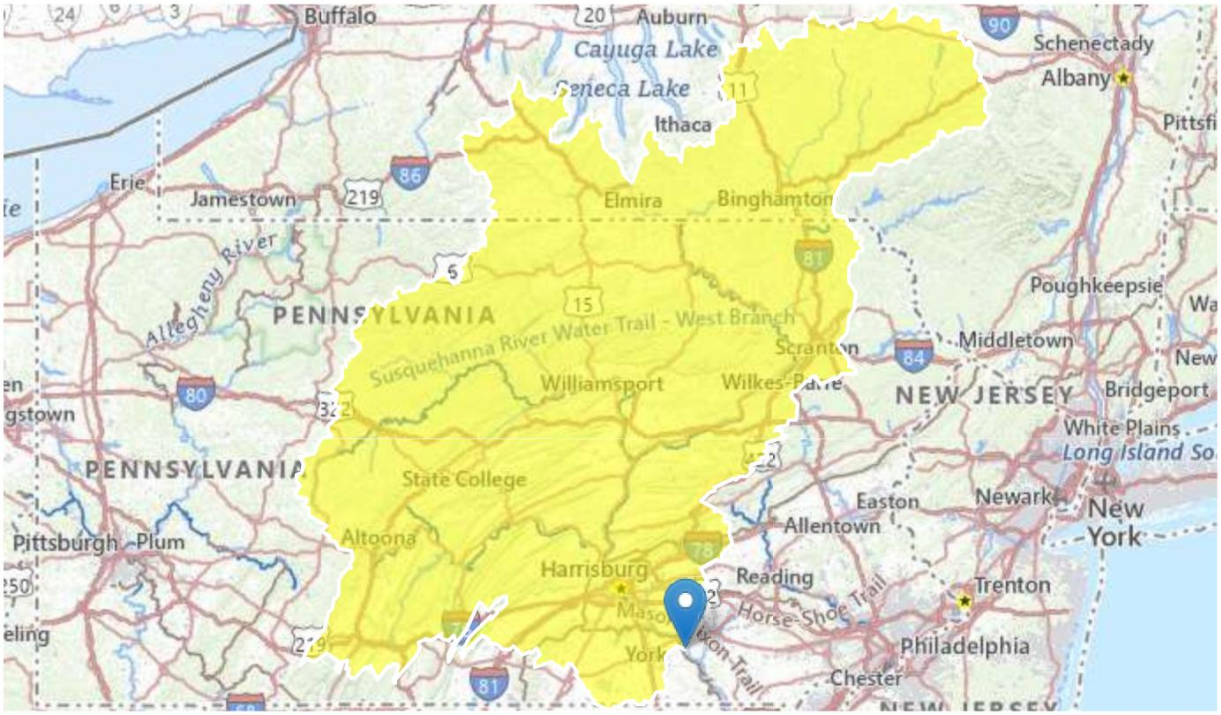
Time: 2025-11-14 11:32:08 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.1338	degrees
CARBON	Percentage of area of carbonate rock	6.7	percent
DRNAREA	Area that drains to a point on a stream	26000	square miles
ELEV	Mean Basin Elevation	1328	feet
FOREST	Percentage of area covered by forest	67.7351	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	45.3476	percent

Parameter Code	Parameter Description	Value	Unit
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
URBAN	Percentage of basin with urban development	2.8654	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [3.0 Percent (844 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.164	degrees	1.7	6.4
DRNAREA	Drainage Area	25900	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.8654	percent	0	89

Low-Flow Statistics Parameters [43.0 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6.45	percent	0	99
DRNAREA	Drainage Area	25900	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
STRDEN	Stream Density	1.76	miles per square mile	0.51	3.1

Low-Flow Statistics Parameters [6.0 Percent (1600 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	2.33	1720

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1328	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [47.0 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26000	square miles	4.84	982
FOREST	Percent Forest	67.7351	percent	41	100
GLACIATED	Percent of Glaciation	45.3476	percent	0	100
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1

Low-Flow Statistics Disclaimers [4.0 Percent (1030 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [4.0 Percent (1030 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9290	ft^3/s
30 Day 2 Year Low Flow	10300	ft^3/s
7 Day 10 Year Low Flow	7260	ft^3/s
30 Day 10 Year Low Flow	7640	ft^3/s
90 Day 10 Year Low Flow	8160	ft^3/s

Low-Flow Statistics Disclaimers [43.0 Percent (11100 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [43.0 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5970	ft^3/s

Statistic	Value	Unit
30 Day 2 Year Low Flow	7050	ft^3/s
7 Day 10 Year Low Flow	4460	ft^3/s
30 Day 10 Year Low Flow	5260	ft^3/s
90 Day 10 Year Low Flow	6530	ft^3/s

Low-Flow Statistics Disclaimers [6.0 Percent (1600 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [6.0 Percent (1600 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2410	ft^3/s
30 Day 2 Year Low Flow	2980	ft^3/s
7 Day 10 Year Low Flow	1450	ft^3/s
30 Day 10 Year Low Flow	1810	ft^3/s
90 Day 10 Year Low Flow	2480	ft^3/s

Low-Flow Statistics Disclaimers [47.0 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [47.0 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3530	ft^3/s
30 Day 2 Year Low Flow	4450	ft^3/s
7 Day 10 Year Low Flow	2260	ft^3/s
30 Day 10 Year Low Flow	2970	ft^3/s
90 Day 10 Year Low Flow	3830	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4740	ft^3/s
30 Day 2 Year Low Flow	5710	ft^3/s
7 Day 10 Year Low Flow	3360	ft^3/s
30 Day 10 Year Low Flow	4070	ft^3/s
90 Day 10 Year Low Flow	5080	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Armstrong World Industries** NPDES Permit No.: **PA0008761** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.289	700	6.5						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1500									
	Chloride (PWS)	mg/L		210									
	Bromide	mg/L		170									
	Sulfate (PWS)	mg/L	<	150									
	Fluoride (PWS)	mg/L		2.1									
Group 2	Total Aluminum	µg/L		150									
	Total Antimony	µg/L		18									
	Total Arsenic	µg/L		4.6									
	Total Barium	µg/L		160									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		850									
	Total Cadmium	µg/L	<	1									
	Total Chromium (III)	µg/L		6.9									
	Hexavalent Chromium	µg/L		0.58									
	Total Cobalt	µg/L	<	5									
	Total Copper	µg/L	<	25									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		17									
	Dissolved Iron	µg/L		110									
	Total Iron	µg/L		130									
	Total Lead	µg/L	<	2									
	Total Manganese	µg/L		510									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		8.6									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L		8.3									
	Total Silver	µg/L	<	2									
	Total Thallium	µg/L	<	1									
	Total Zinc	µg/L		30									
	Total Molybdenum	µg/L		13									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<	0.52									
	PCB-1221	µg/L	<	0.52									
	PCB-1232	µg/L	<	0.52									
	PCB-1242	µg/L	<	0.52									
	PCB-1248	µg/L	<	0.52									
	PCB-1254	µg/L	<	0.52									
	PCB-1260	µg/L	<	0.52									
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Armstrong World Industries, NPDES Permit No. PA0008761, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna River**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	33.4	241	25900			Yes
End of Reach 1	006685	25	223	26000			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	33.4	0.1	3263									100	7		
End of Reach 1	25	0.1	3276									100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	33.4														
End of Reach 1	25														

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Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Armstrong World Industries, NPDES Permit No. PA0008761, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.005 Analysis Hardness (mg/l): 115.86 Analysis pH: 6.98

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	28,368	
Total Antimony	0	0		0	1,100	1,100	41,607	
Total Arsenic	0	0		0	340	340	12,860	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	794,312	
Total Boron	0	0		0	8,100	8,100	306,378	
Total Cadmium	0	0		0	2.324	2.48	93.7	Chem Translator of 0.938 applied
Total Chromium (III)	0	0		0	642.783	2,034	76,940	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	616	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	3,593	
Total Copper	0	0		0	15.439	16.1	608	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	75.782	98.5	3,725	Chem Translator of 0.77 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	62.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	530.348	531	20,100	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.144	4.88	184	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	2,459	
Total Zinc	0	0		0	132.750	136	5,134	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.035 Analysis Hardness (mg/l): 102.34 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	56,348	
Total Arsenic	0	0		0	150	150	38,419	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,050,120	
Total Boron	0	0		0	1,600	1,600	409,803	
Total Cadmium	0	0		0	0.250	0.28	70.5	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	75.533	87.8	22,496	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,662	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	4,866	
Total Copper	0	0		0	9.135	9.52	2,437	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	10,949,132	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.581	3.28	839	Chem Translator of 0.788 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	232	Chem Translator of 0.85 applied
Total Nickel	0	0		0	53.035	53.2	13,625	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,278	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	3,330	
Total Zinc	0	0		0	120.480	122	31,296	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.035 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	1,434	
Total Arsenic	0	0		0	10	10.0	2,561	
Total Barium	0	0		0	2,400	2,400	614,705	
Total Boron	0	0		0	3,100	3,100	793,994	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	76,838	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	256,127	
Total Mercury	0	0		0	0.050	0.05	12.8	
Total Nickel	0	0		0	610	610	156,237	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	61.5	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.048 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	18,183	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	1,434	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	2,561	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	509,122	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	196,376	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	60.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	22,496	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	395	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	2,303	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	390	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	76,838	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	10,949,132	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	839	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	256,127	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	12.8	µg/L	Discharge Conc < TQL
Total Nickel	12,883	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	1,278	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	118	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	61.5	µg/L	Discharge Conc < TQL
Total Zinc	3,291	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS