pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0001406**
Facility Type	**Industrial**	APS ID	**361025**
Major / Minor	**Minor**	Authorization ID	**1183063**

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

Applicant and Facility Information

Applicant Name	**Braeburn Alloy Steel – Division of CCX, Inc.**	Facility Name	**Braeburn Alloy Steel Rolling Mill Facility**
Applicant Address	101 Braeburn Road Lower Burrell, PA 15068-2259	Facility Address	101 Braeburn Road Lower Burrell, PA 15068-2299
Applicant Contact	Felix Zaffina	Facility Contact	***same as applicant***
Applicant Phone	(724) 226-4253	Facility Phone	***same as applicant***
Client ID	27477	Site ID	487089
SIC Code	3312	Municipality	Lower Burrell City
SIC Description	Manufacturing - Blast Furnaces and Steel Mills	County	Westmoreland
Date Application Received	May 8, 2017	EPA Waived?	Yes
Date Application Accepted	August 23, 2017	If No, Reason	
Purpose of Application	Renewal of an NPDES permit for discharges of contact and non-contact cooling water, treated sanitary wastewaters, floor drain water, and storm water.		

Summary of Review

Braeburn Alloy Steel – Division of CCX, Inc. ("Braeburn") submitted an application dated April 26, 2017 and received by the Department of Environmental Protection ("DEP") on May 8, 2017 to renew NPDES Permit PA0001406 for discharges from Braeburn's steel rolling and forging mill in Lower Burrell, Westmoreland County. Braeburn's current NPDES permit was issued on October 25, 2012 with an effective date of November 1, 2012 and an expiration date of October 31, 2017. The deadline to submit a renewal application was May 4, 2017. Braeburn submitted (mailed) the application prior to the deadline, so the permit was administratively extended.

Braeburn is classified as a specialty hot forming section mill under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category Effluent Limitations Guidelines. The facility operates a forge press; 10-inch and 14-inch rolling mills; cold finishing facilities to turn, peel, saw, grind, and/or straighten metal products (ingots, billets, slabs, and/or bars); and annealing furnaces to heat treat metal products. Wastewaters generated by the facility include contact cooling water from a quench tank; non-contact cooling water from the rolling mills, heat exchangers, and furnaces; wastewaters collected in floor drains in the forge press building and mill building; sanitary wastewaters; excess water river water from the facility's intake pump; and storm water associated with industrial activities.

DEP conducted an inspection of the facility on January 23, 2018 to assess the current condition of the site and the disposition of its various outfalls. During that inspection, DEP identified a storm water discharge that was not included in the permit and requested that Braeburn update the application to include that discharge. Braeburn submitted an updated application that was received by DEP on May 1, 2018. The updated application modified the contributing sources to Outfall 005 (removing the cooling water discharges associated with a decommissioned compressor) and added Outfall 013. The draft permit is based on information in the updated application.

Approve	Deny	Signatures	Date
✓		Ryan C. Decker Ryan C. Decker, P.E. / Environmental Engineer	11/22/19
✓		Michael E. Fifth Michael E. Fifth, P.E. / Environmental Engineer Manager	12/3/19

Summary of Review

The facility has seven outfalls and one internal monitoring point ("IMP"). Outfalls 001 and 003 are the primary discharge locations for Braeburn's industrial wastewaters. Outfall 001 discharges contact cooling water, non-contact cooling water, floor drain water, and storm water. Outfall 003 discharges non-contact cooling water, floor drain water, and storm water. Outfalls 002, 005, 012, and 013 discharge storm water. Outfalls 001 and 012 also receive excess river water from the facility's intake pump that discharges continuously. Outfall 004 discharges sanitary wastewaters treated by an onsite sewage treatment plant. Outfall 013 is for an existing storm water discharge that is a new addition to the permit with this renewal. The Outfall 013 pipe discharges to the ground along the eastern perimeter of the site and is being added to evaluate the effectiveness of best management practices employed in the contributing drainage area.

Technology-based effluent limits from applicable federal regulations at 40 CFR Part 420, Subpart G – Hot Forming Subcategory Effluent Limitations Guidelines (40 CFR § 420.72(b)(2)) are imposed at IMP 101 for Braeburn's quench tank contact cooling water. That wastewater combines with other sources for discharge at Outfall 001.

Clean Water Act Section 316(b) – Cooling Water Intake Structures

Braeburn operates a cooling water intake structure on the Allegheny River that supplies Braeburn with water that is used for cooling. Section 316(b) of the Clean Water Act requires the use of Best Technology Available (BTA) for the minimization of adverse environmental impact, which includes the minimization of impingement mortality and entrainment of all life stages of fish and shellfish at cooling water intake structures for power-generating and manufacturing facilities.

On August 15, 2014, EPA promulgated regulations implementing Section 316(b) of Clean Water Act pertaining to cooling water intake structures. The regulations established best technology available (BTA) standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power-generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

The current design intake flow of Braeburn's cooling water intake structure (1.44 MGD) does not meet the applicability criteria for the specific requirements of 40 CFR Part 125, Subpart J, §§ 125.94 through 125.99. Therefore, pursuant to 40 CFR § 125.90(b) and § 316(b) of the Clean Water Act, Braeburn is subject to cooling water intake structure requirements established by DEP on a case-by-case, best professional judgement basis. As required by 40 CFR § 125.98(h), the U.S. Fish and Wildlife Service was given 60-days to comment on the permit renewal application as it pertains to Braeburn's cooling water intake structure; the Pennsylvania Fish and Boat Commission was also given an opportunity to comment. No comments were received from either agency.

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, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.338
Latitude	40° 36' 56.69"	Longitude	-79° 42' 40.94"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Quench tank contact cooling water and excess river water from IMP 101; non-contact cooling water from heat exchangers and furnaces, floor drain runoff from the Forge Press Building; and storm water runoff.		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.45
Drainage Area	11,410	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.25

IMP No.	101	Design Flow (MGD)	0.021
Latitude	40º 37' 6.37"	Longitude	-79º 42' 50.45"
Wastewater Description:	Quench tank contact cooling water and excess river water		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	Variable
Latitude	40° 36' 52.52"	Longitude	-79° 42' 48.38"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.35
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.15

Changes Since Last Permit Issuance: This outfall is no longer used to discharge water from floor drains in the metallurgical building.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.23
Latitude	40° 36' 51.37"	Longitude	-79° 42' 50.80"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Non-contact cooling water from the facility's 10" and 14" rolling mills; wastewater from floor drains in the mill building; and storm water from the area of the mill and cold finish buildings		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972526	RMI	24.30
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.1

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.001
Latitude	40° 36' 49.06"	Longitude	-79° 42' 54.29"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Treated sanitary wastewaters		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.19
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	0.99

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0.048
Latitude	40° 36' 44.94"	Longitude	-79° 42' 53.51"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.13
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	0.93

Discharge, Receiving Waters and Water Supply Information

Outfall No.	012	Design Flow (MGD)	0.008
Latitude	40° 36' 54.28"	Longitude	-79° 42' 45.78"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Excess river water from the intake pumps and storm water		

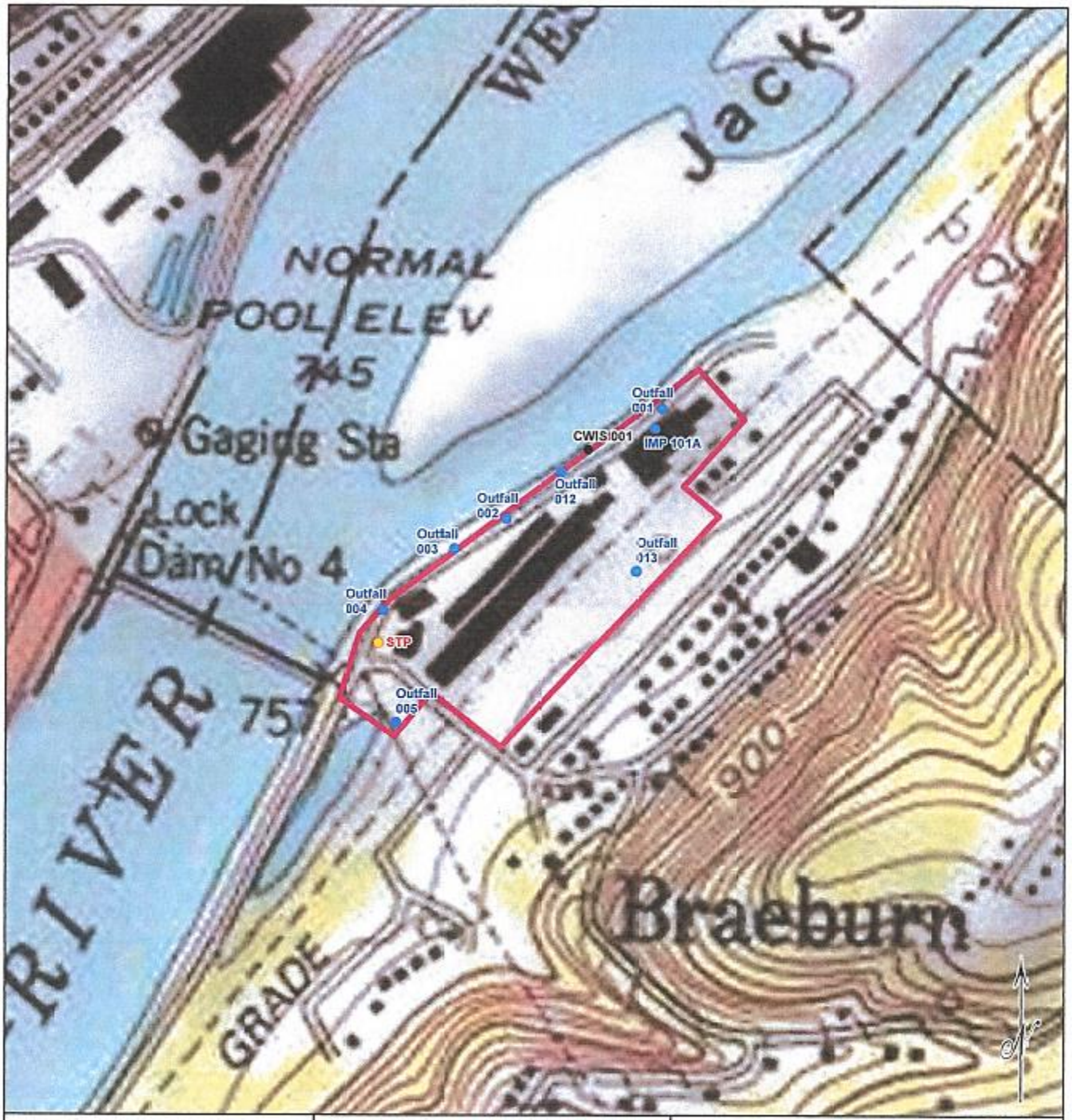
Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.40
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

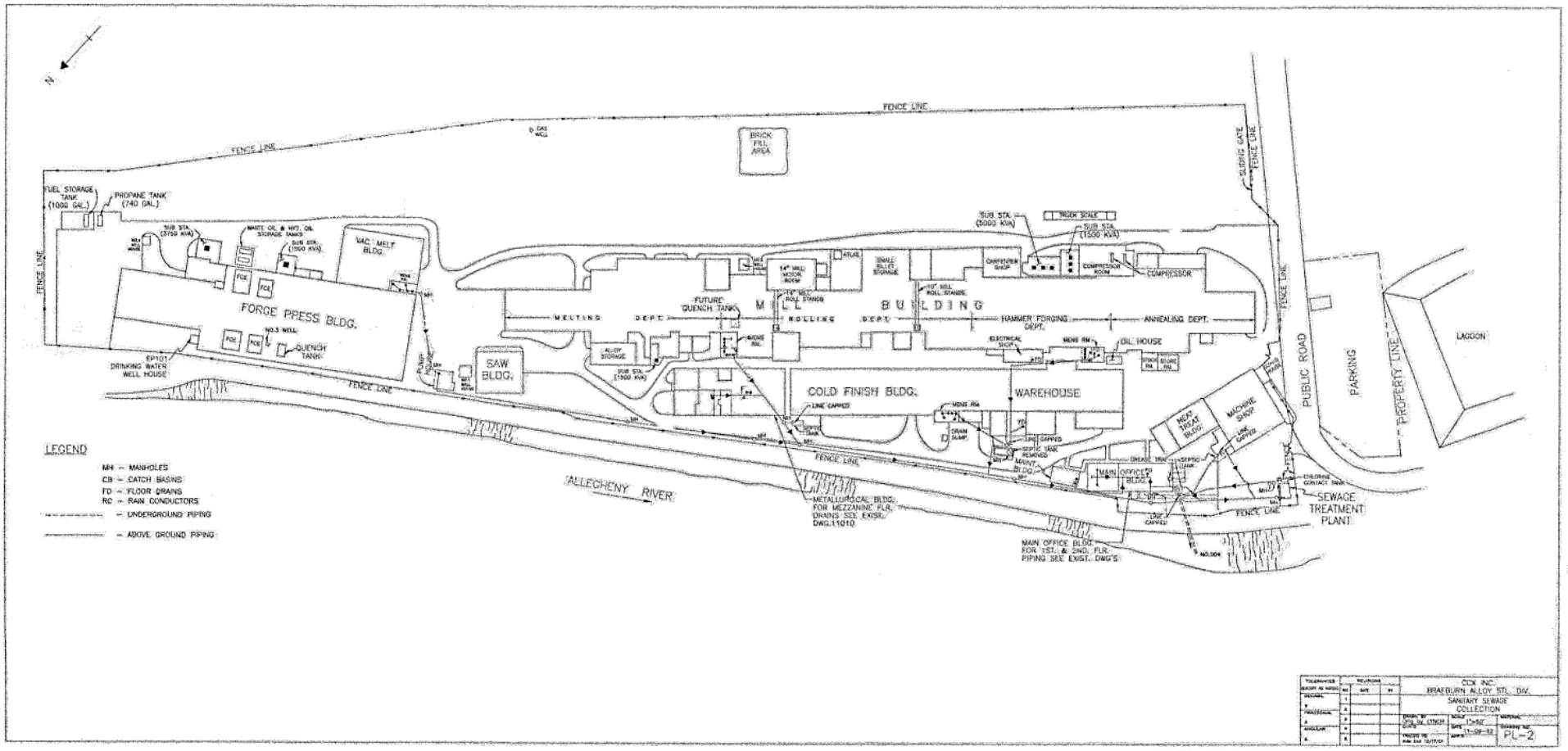
Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.20

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	013	Design Flow (MGD)	Variable
Latitude	40° 36' 50.70"	Longitude	-79° 42' 42.02"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		
Receiving Waters	Unnamed trib. to Allegheny River	Stream Code	N/A
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.25

Changes Since Last Permit Issuance: New outfall

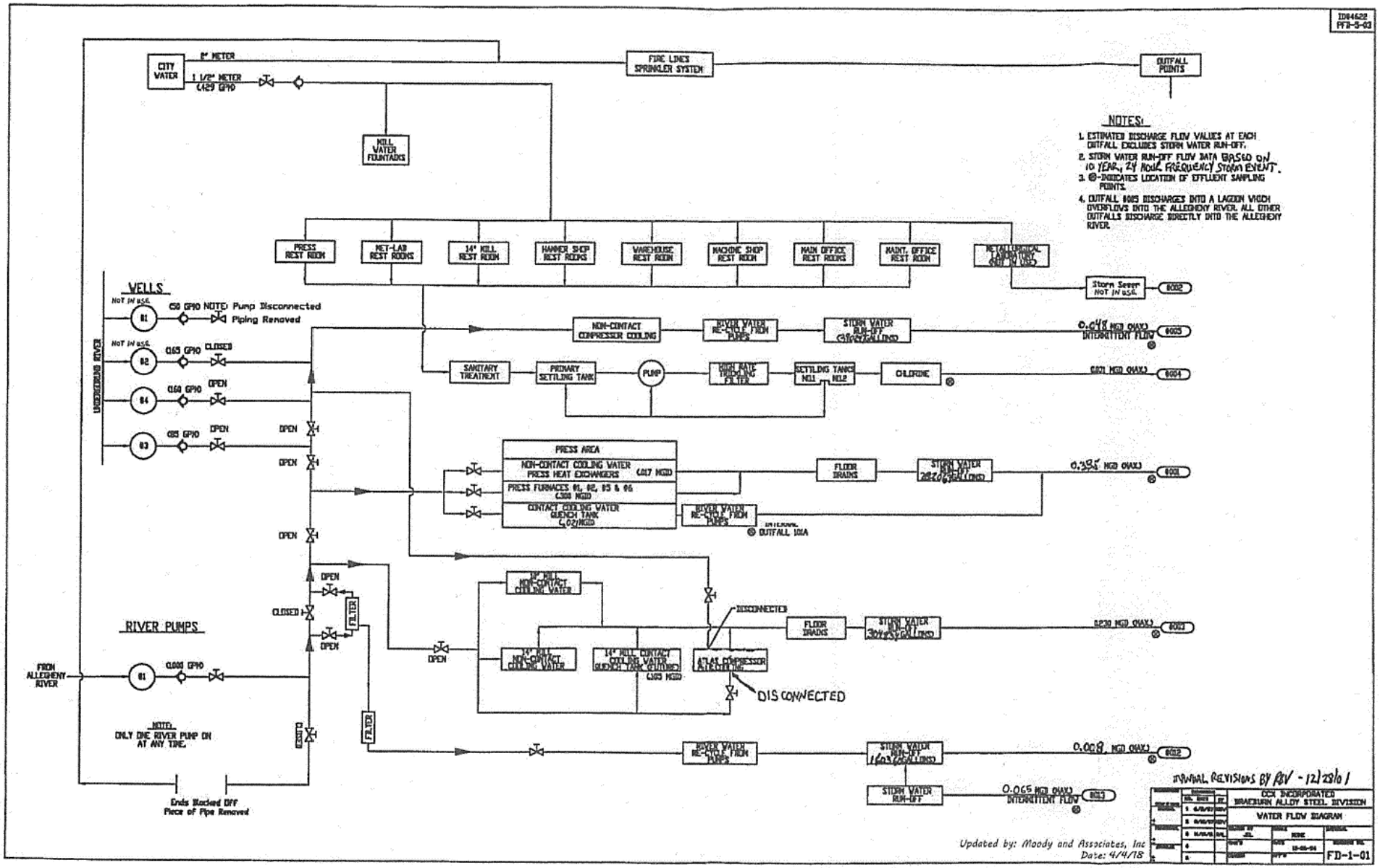

NORMAL
POOL ELEV
745
Gaging Sta
Lock
Dam No 4
RIVER
GRADE
Braeburn
900
Outfall 001
CWIS 001
IMP 101A
Outfall 012
Outfall 002
Outfall 003
Outfall 013
Outfall 004
STP
Outfall 005
LEGEND
Discharge Locations
Cooling Water Intake Structure
Sewage Treatment Plant
Site Location
Scale:
0 250 500
Feet
1 in = 500 ft
Map References:
• 7½ minute quadrangle: New Kensington East, PA
• Service Layer Credits: Copyright © 2013 National Geographic Society, i-cubed
Notes:
• This drawing is the property of Braeburn Alloy Steel - Division of CCX, Inc. and contains information that is proprietary and confidential in nature. It may not be copied or otherwise reproduced in whole or in part without prior written consent.
FIGURE 1:
SITE LOCATION MAP
BRAEBURN ALLOY STEEL
City of Lower Burrell, Westmoreland County, PA
Project #: 16-338-LM
Prepared for :
Drawn by: BMP
Checked by: LDM
Date: 2/20/2018
Revision: 1
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342
Office: (724) 746-5200
Fax: (724) 746-5303
www.moody-s.com
Moody
P:\GIS\Ecological\NPDES_Permitting\16338LM_Braeburn\Figure 1 - Site Location Map.mxd

Site Plan

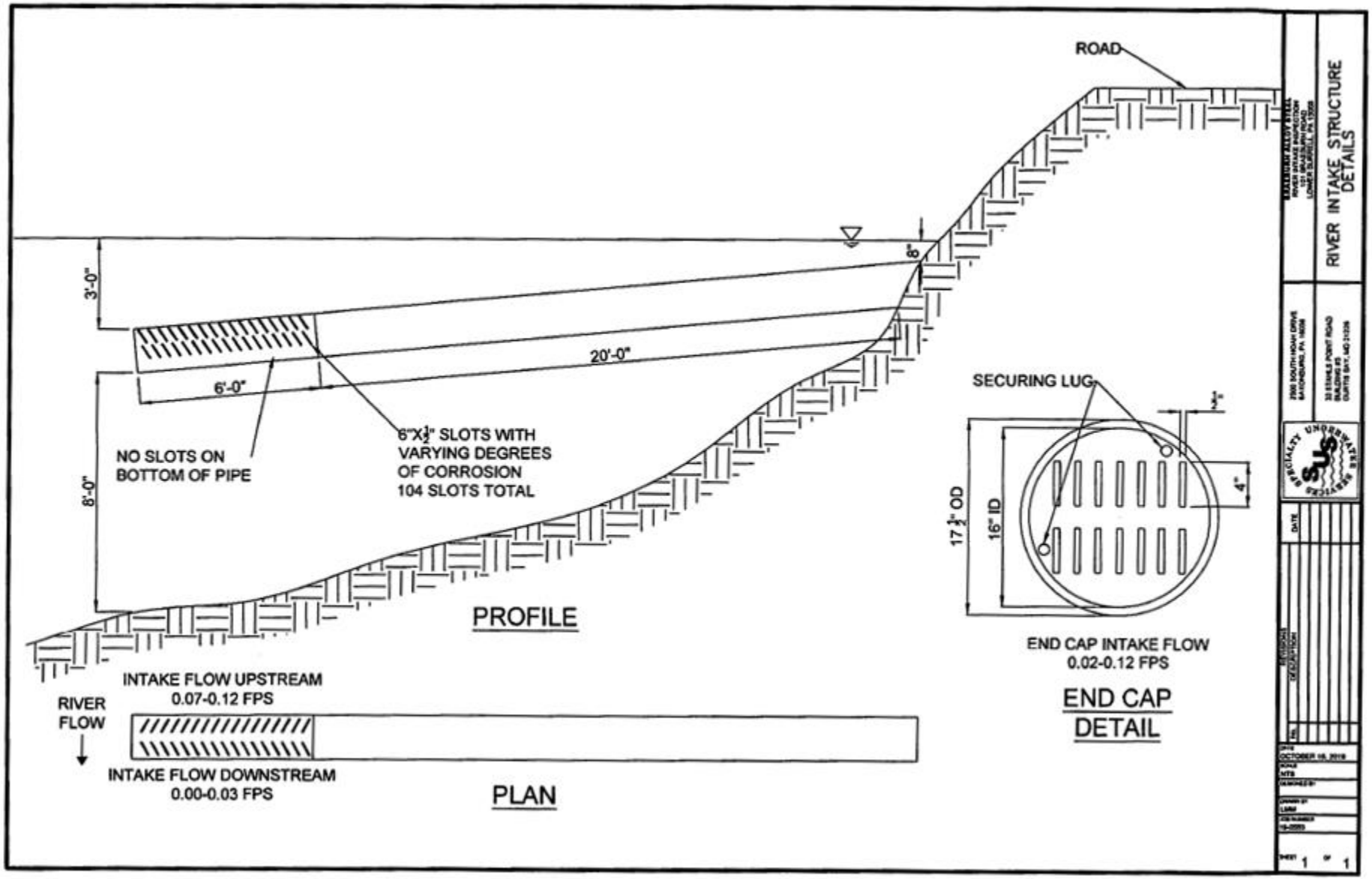

N
FENCE LINE
GAS WELL
BRICK FILL AREA
FUEL STORAGE TANK (1000 GAL.)
PROPANE TANK (740 GAL.)
SUB STA. (3750 KVA)
WASTE OIL & HYD. OIL STORAGE TANKS
SUB STA. (1500 KVA)
VAC. MELT BLDG.
FORGE PRESS BLDG.
NO.3 MILL
QUENCH TANK
EP101 DRINKING WATER WELL HOUSE
SAW BLDG.
SUB STA. (5000 KVA)
TRUCK SCALE
SUB STA. (1500 KVA)
CARPENTER SHOP
COMPRESSOR ROOM
COMPRESSOR
FUTURE QUENCH TANK
MELTING DEPT.
MILL BUILDING
ROLLING DEPT.
HAMMER FORGING DEPT.
ANNEALING DEPT.
ELECTRICAL SHOP
OIL HOUSE
ALLOY STORAGE
COLD FINISH BLDG.
WAREHOUSE
LINE CAPPED
HEAT TREAT BLDG.
MACHINE SHOP
SEPTIC TANK REMOVED
MAIN OFFICE BLDG.
SEPTIC TANK
GREASE TRAP
CHLORINE CONTACT TANK
SLIDING GATE
PUBLIC ROAD
PARKING
PROPERTY LINE
LAGOON
SEWAGE TREATMENT PLANT
ALLEGHENY RIVER
METALLURGICAL BLDG. FOR MEZZANINE FLR. DRAINS SEE EXIST. DWG.11010
MAIN OFFICE BLDG. FOR 1ST. & 2ND. FLR. PIPING SEE EXIST. DWG'S
LEGEND
MH = MANHOLES
CB = CATCH BASINS
FD = FLOOR DRAINS
RC = RAIN CONDUCTORS
= UNDERGROUND PIPING
= ABOVE GROUND PIPING
CCX INC.
BRAEBURN ALLOY STL. DIV.
SANITARY SEWAGE COLLECTION
PL-2

Aerial Image of Site

Flow Diagram



Cooling Water Intake Structure Diagram



Treatment Facility Summary		
Treatment Facility Name: Sewage Treatment Plant		
WQM Permit No.	**Issuance Date**	**Purpose**
465S70	05/23/1966	Permit issued by Pennsylvania Dept. of Health - Sanitary Water Board to Braeburn Alloy Steel for sewage treatment plant

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Primary and secondary	Primary settling tank; high-rate trickling filter; settling tank no. 1; settling tank no. 2; chlorine contact tank	sodium and calcium hypochlorite	0.001

Treatment Facility Summary		
Treatment Facility Name: Dissolved air flotation		
WQM Permit No.	**Issuance Date**	**Purpose**
6579207	08/22/1980	Dissolved air flotation unit for Outfall 003 (not in use)

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Primary	Dissolved air flotation	None	—

Changes Since Last Permit Issuance: None

Compliance History

DMR Data for Outfall 001 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.1440	0.1440	0.1440	0.1800	0.1440	0.0864	0.0865	0.1115	0.0864	0.1370	0.1440	0.1440
pH (S.U.) Minimum	7.43	7.47	7.44	7.55	7.19	7.24	7.22	7.39	7.57	7.46	7.19	7.05
pH (S.U.) Maximum	7.53	7.56	7.51	7.67	7.49	7.51	7.54	7.42	7.73	7.67	7.19	7.07
Temperature (°F) IMAX	70.5	75.9	74.3	69.3	73.9	62.8	62.2	64.4	73.9	54.3	43.0	59.9
TSS (mg/L) Average Monthly	3.5	3.5	8	10	5	3	3	3	3	3	4	3
TSS (mg/L) Daily Maximum	4	4	11	13	7	3	3	3	3	3	4	3

DMR Data for Outfall 003 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.017	0.029	0.023	0.025	0.015	0.010	0.014					0.014
pH (S.U.) Minimum	7.45	7.45	7.29	7.54	7.29	7.23	7.12					7.12
pH (S.U.) Maximum	7.47	7.59	7.62	7.54	7.48	7.3	7.3					7.27
Temperature (°F) IMAX	73	75	78	68	64	52	42					60.0
TSS (mg/L) Average Monthly	8	3	7	19	14	3.5	6.5					6
TSS (mg/L) Daily Maximum	10	3	7	19	23	4	7					8
Total Copper (mg/L) Daily Maximum	0.02			0.02			0.02					

DMR Data for Outfall 004 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.0004	0.0018	0.0003	0.0004	0.0002	0.000144	0.0004	0.00049	0.0001	0.000144	0.0002	0.000144
pH (S.U.) Minimum	7.04	6.83	6.97	6.88	6.67	6.68	7.18	7.22	7.4	7.46	7.60	6.65

pH (S.U.) Maximum	7.32	7.20	7.52	7.31	8.2	7.51	7.34	7.36	7.49	7.88	7.83	7.20
TRC (mg/L) Average Monthly	0.59	0.72	0.95	0.74	0.49	0.48	0.58	0.33	0.89	0.36	0.95	1.35
CBOD5 (mg/L) Average Monthly	16	3.0	3	4.0	5	5	6	7	7	3	5	5
TSS (mg/L) Average Monthly	10	23	7	6	6	5	10	12	7	7	4	4
Fecal Coliform (No./100 ml) Geometric Mean	6	50	4	9	7	4	181	63	1	158	2	2
Fecal Coliform (No./100 ml) IMAX	33	2420	14	10	38	13	2420	980	1	208	3	2

DMR Data for Outfall 005 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly			0.004	0.005	0.013	0.001					0.022	0.014
pH (S.U.) Minimum			7.47	8.10	8.15	8.63					8.03	7.49
pH (S.U.) Maximum			8.13	8.10	8.29	8.63					8.19	7.49
Temperature (ºF) IMAX			76.5	71.1	73.9	62.8					44.6	62.4
TSS (mg/L) Average Monthly			92	27	113	92					14	18
TSS (mg/L) Daily Maximum			150	27	158	92					22	36

DMR Data for Outfall 012 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.0080	0.0070	0.0018	0.0018	0.0047	0.0001	0.0001				0.0014	
TSS (mg/L) Daily Maximum	< 3			3.0			3.0			11.0		
Oil and Grease (mg/L) IMAX	< 5			5.0			5.0			5.0		

Compliance History

Effluent Violations for Outfall 004, from: November 1, 2018 To: September 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Flow	08/31/19	Avg Mo	0.0018	MGD	0.001	MGD
Fecal Coliform	08/31/19	IMAX	2420	No./100 ml	1000	No./100 ml

Effluent Violations for Outfall 005, from: November 1, 2018 To: September 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	04/30/19	Avg Mo	92	mg/L	30	mg/L
TSS	07/31/19	Avg Mo	92	mg/L	30	mg/L
TSS	05/31/19	Avg Mo	113	mg/L	30	mg/L
TSS	07/31/19	Daily Max	150	mg/L	60	mg/L
TSS	05/31/19	Daily Max	158	mg/L	60	mg/L
TSS	04/30/19	Daily Max	92	mg/L	60	mg/L

Development of Effluent Limitations

IMP No.	101	**Design Flow (MGD)**	0.021
Latitude	40° 36' 56.00"	**Longitude**	-79° 42' 41.00"

Wastewater Description: Quench tank contact cooling water and excess river water

Effluent limits are imposed at Internal Monitoring Point 101 rather than another monitoring location because 40 CFR § 125.3(f) prohibits compliance with technology-based treatment requirements using "non-treatment" techniques such as flow augmentation (i.e., dilution). Since the wastewaters monitored at IMP 101 combine with non-contact cooling water and other wastewaters before the next downstream monitoring location (Outfall 001), IMP 101 is the only point at which compliance with applicable Federal Effluent Limitations Guidelines may be determined without the interference of other wastewaters. This rationale is consistent with 40 CFR § 122.45(h)[1], which allows for the imposition of effluent limitations on internal waste streams in these circumstances.

101.A. Technology-Based Effluent Limitations (TBELs)

Federal Effluent Limitations Guidelines ("ELGs")

Quench tank contact cooling water from Braeburn's Forge Press Building is subject to regulation under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category. Pursuant to the specialized definitions given in 40 CFR § 420.71, Braeburn is classified as a specialty hot forming section mill subject to Best Practicable Control Technology ("BPT") effluent limits under 40 CFR Part 420, Subpart G – Hot Forming Subcategory, 40 CFR § 420.72(b)(2).[2] As stated in 40 CFR § 420.73, EPA determined that there are not significant quantities of toxic pollutants in hot forming wastewaters after compliance with applicable BPT limits. Consequently, EPA did not promulgate more stringent Best Available Technology Economically Achievable ("BAT") limits. Applicable Best Conventional Pollutant Control Technology ("BCT") effluent limits in 40 CFR § 420.77(b)(2) are equivalent to BPT limits. Braeburn is not a new source and is not subject to New Source Performance Standards.

Table 1. BPT/BCT TBELs from 40 CFR Part 423, Subpart G - §§ 420.72(b)(2) and 420.77(b)(2)

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	pounds per 1,000 pounds of product	
Total Suspended Solids	0.224	0.0841
Oil and Grease	0.0561	
pH	Within the range of 6.0 to 9.0	

The ELG is production-based, which requires a reasonable measure of actual production to calculate allowable pollutant loadings. EPA considers a reasonable measure of actual production to be a single estimate of the long-term average daily production that can reasonably be expected to prevail during the next term of the permit. This value should not be the design production rate. However, EPA has allowed the use of the highest production rate reported during the previous permit term to calculate mass limits provided concentration limits also are imposed; that rationale is applied for this permit. Therefore, the maximum production rate reported within the last three years will be used to calculate mass limits.

Based on production data supplied with the NPDES permit renewal application, the month of highest production occurred in October 2016 with 97 tons of steel produced. With an average daily production of 4.75 days per month, the maximum daily production rate is:

(97 tons / month) × (1 month / 4.75 days) = 20.42 tons per day

Braeburn's maximum monthly production rate of 20.42 tons per day equates to 40,842 pounds per day. This production rate will be used to calculate production-based mass limits pursuant to 40 CFR §§ 420.72(b)(2) and 420.77(b)(2).

[1] 40 CFR § 122.45(h)(1): "When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams."

[2] 40 CFR § 420.71(a) The term *hot forming* means those steel operations in which solidified, heated steel is shaped by rolls.

40 CFR § 420.71(c) The term *section mill* means those steel hot forming operations that produce a variety of finished and semi-finished steel products other than the products of those mills specified below in paragraphs (d), (e), (g), and (h) of this section.

40 CFR § 420.71(l) The term *specialty hot forming operation* (or "specialty") applies to all hot forming operations other than "carbon hot forming operations.

Daily Maximum

TSS: 40,842 lbs of product/day × (0.224 lbs TSS / 1,000 lbs of product) = 9.14 lbs TSS/day
Oil & Grease: 40,842 lbs of product/day × (0.0561 lbs TSS / 1,000 lbs of product) = 2.29 lbs TSS/day

Average Monthly

TSS: 40,842 lbs of product/day × (0.0841 lbs TSS / 1,000 lbs of product) = 3.43 lbs TSS/day

Table 2. IMP 101 Mass TBELs

Parameter	Average Monthly (lbs/day)	Maximum Daily (lbs/day)
Total Suspended Solids	3.43	9.14
Oil and Grease	—	2.29

Concentration-Based Limits for IMP 101

To supplement the production-based mass limits calculated from the ELGs, DEP previously imposed concentration limits under the authority of 40 CFR § 122.45(f)(2).[3] The concentration limits are from Table IX-13 – BPT Effluent Limitations Hot Forming Subcategory on p. 330 of the 1982 *Development Document for Effluent Limitations Guidelines for the Iron and Steel Manufacturing Point Source Category, Volume IV, Hot Forming Subcategory* (see Attachment A). The average BPT limit of 15 mg/L for TSS from Table IX-13 was not imposed previously but will be for this renewal.

Table 3. IMP 101 Concentration TBELs

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instant. Maximum (mg/L)
Total Suspended Solids	15.0	40.0	50.0
Oil and Grease	—	10.0	13.0

The concentration TBELs will be maintained in the renewed permit based on EPA's anti-backsliding regulation at 40 CFR § 122.44(l). Instantaneous maximum limits are calculated by multiplying the maximum daily limit by a factor of 1.25 consistent with the ratio of maximum daily limits to instantaneous maximum limits in Chapter 2 of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* [Doc. No. 362-0400-001].

101.B. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs generally are not imposed at internal monitoring points because internal waste streams do not need to comply with water quality standards until they are discharged to a water of the Commonwealth. Therefore, WQBELs are evaluated for treated process wastewaters at the final discharge location to the Allegheny River, Outfall 001.

101.C. Effluent Limitations and Monitoring Requirements for IMP 101

Effluent limits applicable at IMP 101 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(d)(1).

Table 4. Effluent Limits and Monitoring Requirements for IMP 101

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Suspended Solids	3.43	9.14	15.0	40.0	50.0	40 CFR § 420.77(b)(2)
Oil and Grease	—	2.29	—	10.0	13.0	40 CFR § 420.77(b)(2)
pH	within the range of 6.0 to 9.0					40 CFR § 420.77(b)(2)

[3] 40 CFR 122.45(f)(2) states: "Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

In accordance with the self-monitoring requirements given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, TSS will require 8-hour composite sampling 2/month. Process wastewater is discharged 8 hours per day, 5 days per week, so Table 6-4's requirement for 24-hour composite sampling for process wastewater discharges is reduced to eight hours to match the duration of the discharge. The monitoring frequency and sample type for oil and grease and pH will be 2/month using grab sampling. Flow must be measured at the time of sampling (2/month).

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.338
Latitude	40° 36' 56.69"	**Longitude**	-79° 42' 40.94"

Wastewater Description: Quench tank contact cooling water and excess river water from IMP 101; non-contact cooling water from heat exchangers and furnaces, floor drain runoff from the Forge Press Building; and storm water runoff.

Excess river water from the intake pump is continuously discharged from this outfall. The river water is generally filtered before use and a minimum flow rate is required for the filters to function according to an April 8, 2008 DEP inspection report. The difference between the minimum flow requirement for filter operation and Braeburn's water demand is the presumed reason why there is a discharge of excess river water.

001.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, self-monitoring requirements for NCCW discharges should include the following parameters: flow, pH, and temperature. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) will be imposed at Outfall 001 based on 25 Pa. Code § 95.2(1).

DEP imposes a maximum temperature limit of 110°F on heated discharges as a safety measure to protect sampling personnel and anyone who might come into contact with heated wastewaters at their point of discharge.

Floor Drains

TBELs for total suspended solids and oil and grease were imposed in permits pre-dating the current permit. The oil and grease limits at Outfall 001 were removed in the last permit on the basis that non-contact cooling water is not an oil-bearing wastewater. However, wastewaters collected from floor drains may be oil-bearing wastewaters. EPA identifies floor drains as a low volume waste source in the Steam Electric Power Generating Point Source Category Effluent Limitations Guidelines and regulates TSS and oil and grease in those sources. Braeburn is not a power-generating facility, but floor drain wastewater at Braeburn is analogous to floor drain wastewater regulated by the Steam Electric regulations, so the TSS and oil and grease TBELs in 40 CFR § 423.12(b)(3) would reasonably apply to floor drain wastewater discharged elsewhere. Therefore, TBELs for oil and grease will be re-imposed. The TSS limits currently in effect at Outfall 001 are more stringent than the TSS limits in § 423.12(b)(3), so the current TSS limits will remain in the permit pursuant to EPA's anti-backsliding regulation (40 CFR § 122.44(l)).

Storm Water

There is a storm water component to Outfall 001's discharges, but no monitoring specific to storm water will be required at Outfall 001. Excess river water discharges through the outfall continuously and there is no way to readily separate characterization of storm water from the river water.

001.B. Water Quality-Based Effluent Limitations (WQBELs)

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential and Developing WQBELs

The Department's procedures for evaluating reasonable potential are as follows:

1. For industrial waste discharges, the design flow to use in modeling is the average flow during production or operation and may be taken from the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<RL" where the Reporting Limit for the analytical method used by the laboratory is greater than the most stringent water quality criterion]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (see Attachment B).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by PENTOXSD. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations is collected on a spreadsheet titled "Toxics Screening Analysis." (Attachment B)

PENTOXSD Water Quality Modeling Program

PENTOXSD Version 2.0 for Windows is a single discharge, mass-balance water quality modeling program that includes consideration for mixing, first-order decay, and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, and discharge flow rate are entered into PENTOXSD to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions, and partial mix factors also may be entered to further characterize the conditions of the discharge and receiving water. Pollutants are then selected for analysis based on those present or likely to be present in a discharge at levels that may cause or have the reasonable potential to cause or contribute to excursions above state water quality standards (i.e., a reasonable potential analysis). Discharge concentrations for the selected pollutants are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). PENTOXSD then evaluates each pollutant by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL, and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, PENTOXSD recommends average monthly and maximum daily WQBELs.

Combined Discharge Modeling

Outfall 001 discharges to the Allegheny River at river mile index 24.45. Braeburn's other process wastewater outfall, 003, discharges to the Allegheny River at river mile index 24.30. Since these discharges have overlapping areas of mixing and PENTOXSD as a single discharge model will not properly account for the combined effects of multiple discharges when calculating WQBELs, the normal PENTOXSD modeling procedure is modified.

The Toxics Screening Analysis is still performed for each outfall to identify pollutants of concern. However, WQBELs are calculated using the combined discharge flow of Outfalls 001 and 003. The WQBELs calculated using the combined discharge flow are used to determine whether monitoring or WQBELs are required for the pollutants of concern identified at each outfall (i.e., maximum concentrations reported at each outfall will be compared to the WQBELs calculated using the combined flow). As concentration limits, the combined flow WQBELs can be imposed at any of the outfalls included in the combined flow analysis.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application. The PENTOXSD model is run for the combination of Outfalls 001 and 003 with the modeled discharge and receiving stream characteristics shown in Table 5. The pollutants selected for analysis are those identified as candidates for modeling by the Toxics Screening Analysis. The screening for Outfall 001 identified copper and phenols as pollutants for modeling, but cadmium and lead are included also because they were identified as pollutant of concerns at Outfall 003 (see Section 003.B of this Fact Sheet).

Table 5. PENTOXSD Inputs

Parameter	Value
River Mile Index	24.45
Discharge Flow (MGD)	0.568
Basin/Stream Characteristics	
Parameter	**Value**
Drainage Area (mi^2)	11,410
Q_{7-10} (cfs)	2,390
Low Flow Yield (cfs/mi^2)	0.21
Discharge Elevation (ft)	745.4
Stream Slope (ft/ft)	0.0001

The flow used for the PENTOXSD analysis is the sum of the maximum daily design flows for Outfalls 001 and 003:

001 003
0.338 MGD + 0.23 MGD = 0.568 MGD

A flow-weighted discharge hardness is used for the analysis—calculated below—using the average hardness concentrations reported on the permit application.

[(118 mg/L × 0.338 MGD) + (75.4 mg/L × 0.23 MGD)] ÷ 0.568 MGD

= 101 mg/L combined discharge hardness

The WQBELs calculated using PENTOXSD (see Attachment C) are compared to the maximum reported effluent concentrations, as described above, to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of the Toxics Screening Analysis, no WQBELs are necessary for discharges from Outfall 001.

Allegheny River Fish Consumption Use Impairment

There is a fish consumption use impairment for the Allegheny River caused by PCBs and chlordane from an unknown source(s). Braeburn does not discharge PCBs or chlordane. Consequently, the facility will not contribute to the fish consumption use impairment caused by those pollutants and will not be subject to limitations related to the impairment. This conclusion applies to all outfalls from the facility.

001.C. Effluent Limitations and Monitoring Requirements for Outfall 001

Effluent limits at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(d)(1).

Table 6. Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.44(l)
Oil and Grease	—	—	15.0	20.0	—	40 CFR § 423.12(b)(3); BPJ
Temperature (°F)	—	—	—	110	—	Effluent Standard; BPJ
pH	within the range of 6.0 to 9.0					25 Pa. Code § 95.2(1)

Existing and previously imposed monitoring frequencies and sample types for TSS, oil and grease, and pH (2/month grab sampling) will be required at Outfall 001. Temperature must be measured 2/month using immersion stabilization sampling. Flow must be estimated 2/month.

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	Variable
Latitude	40° 36' 52.52"	**Longitude**	-79° 42' 48.38"

Wastewater Description: Storm water

002.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines applicable to the storm water discharges at Outfall 002.

DEP imposed once-per-year monitoring for TSS and oil and grease in the previous permit. That monitoring was imposed because the site plan submitted with the previous application appeared to show that floor drains within the metallurgical building were connected to the storm sewers. The application also indicated that the metallurgical building was not in use. To address the potential contribution of floor drains and the absence of effluent limits and monitoring requirements for that effluent source, the previous permit included a condition requiring that only stormwater may be discharged to Outfall 002 (i.e., no floor drains). Braeburn did not report any results for Outfall 002 over the last five years and the facility does not plan to use the outfall. The permit will only authorize discharges of storm water because even if Braeburn has no intention of using the metallurgical building or the outfall (as stated in the permit application), storm water will still discharge through the outfall if there are no inlet or outlet controls to prevent storm water from flowing through the outfall pipe.

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in DEP's *PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activities* will be applied to the facility's storm water discharges. Based on the facility's SIC Code of 3312, the facility would be classified under Appendix B – "Primary Metals" of the PAG-03 General Permit.[4] To ensure that there is baseline consistency across the state for all primary metals facilities that discharge storm water associated with their industrial activities, the minimum monitoring requirements of Appendix B of the PAG-03 will be imposed at Outfall 002. Flow monitoring also will be required in accordance with 25 Pa. Code § 92a.61(h).

Table 7. PAG-03 Appendix B – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Appendix H Measurement Frequency	MSGP Benchmark Value
Total Suspended Solids	mg/L	1 Grab	1/6 months	100
Aluminum, Total	mg/L	1 Grab	1/6 months	0.75
Copper, Total	mg/L	1 Grab	1/6 months	0.014
Iron, Total	mg/L	1 Grab	1/6 months	1.0
Lead, Total	mg/L	1 Grab	1/6 months	0.082
Zinc, Total	mg/L	1 Grab	1/6 months	0.12
pH	s.u.	1 Grab	1/6 months	6.0 – 9.0

To the extent that effluent limits would be necessary to ensure that storm water Best Management Practices (BMPs) are adequately implemented, DEP's Permit Writers' Manual recommends that effluent limits be developed for industrial storm water discharges based on a determination of Best Available Technology (BAT) using Best Professional Judgment (BPJ). BPJ of BAT typically involves the evaluation of end-of-pipe wastewater treatment technologies, but DEP considers the use of BMPs to be BAT for storm water discharges unless effluent concentrations indicate that BMPs provide inadequate pollution control.

TBELs may be warranted in the future if pollutant concentrations in storm water consistently exceed the benchmark values from EPA's Multi-Sector General Permit (MSGP), which are listed in the table above. EPA's MSGP is the federal equivalent of DEP's PAG-03 General Permit. EPA uses benchmark monitoring in the MSGP as an indicator of the effectiveness of a facility's BMPs. DEP uses benchmark values for the same purpose. Benchmark values will be listed in Part C of the permit based on EPA's Multi-Sector General Permit benchmark values (see Attachment D).

The benchmark values are not effluent limitations and exceedances do not constitute permit violations. However, if sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, Braeburn must submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan. The corrective action plan requirement and the benchmark values will be specified in a condition in Part C of the permit.

[4] The determination of which of the PAG-03 General Permit's appendices applies to a facility is based on a facility's SIC Code.

Although not listed in Appendix B of the PAG-03, the oil and grease reporting required by the current permit will remain at Outfall 002.

002.B. Water Quality-Based Effluent Limitations (WQBELs)

No WQBELs are developed for Outfall 002. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at Q_{7-10} low flow conditions. Precipitation-induced discharges generally do not occur at Q_{7-10} design conditions because the precipitation that causes a storm water discharge will also increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event.

Even though no mathematical modeling is performed, conditions in Part C of the permit will ensure compliance with water quality standards through a combination of best management practices including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

002.C. Effluent Limitations and Monitoring Requirements for Outfall 002

Effluent limits applicable at Outfall 002 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below.

Table 8. Effluent Limits and Monitoring Requirements for Outfall 002

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
pH (s.u.)	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B

The sampling frequency and type for all parameters will be 1/6 months grab samples as established in Appendix B of the PAG-03 General Permit on which the monitoring requirements are based. Flow should be estimated at the time of sampling. If there are no discharges from Outfall 002, then Braeburn would report "no discharge" on semi-annual Discharge Monitoring Reports.

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0.23
Latitude	40° 36' 51.37"	**Longitude**	-79° 42' 50.80"

Wastewater Description: Non-contact cooling water from the facility's 10" and 14" rolling mills; wastewater from floor drains in the mill building; and storm water from the area of the mill and cold finish buildings

003.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, self-monitoring requirements for NCCW discharges should include the following parameters: flow, pH, and temperature.

Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(b).

Limits for pH (6.0 minimum and 9.0 maximum) will be imposed at Outfall 001 based on 25 Pa. Code § 95.2(1).

DEP imposes a maximum temperature limit of 110°F on heated discharges as a safety measure to protect sampling personnel and anyone who might come into contact with heated wastewaters at their point of discharge.

Oil/Water Separator

An oil/water separator is plumbed to the Outfall 003 discharge pipe. The separator is in the floodway of the Allegheny River on the opposite side of an earthen dike (topped by an access road) that protects the plant proper from high water. DEP observed during a January 23, 2018 inspection that the separator was inundated by the Allegheny River. A report from the Pennsylvania Fish and Boat Commission following-up on a March 1, 1979 oil release from Braeburn indicated that the oil filtration device located at Outfall 003 was silt and water covered and did not appear to be working. Based on this information, it is likely that the separator has been inoperable for almost forty years. In response to that same oil release in 1979, Braeburn applied for and was issued Water Quality Management ("WQM") Permit No. 6579207 on August 22, 1980 for a dissolved air flotation ("DAF") system to treat wastewaters discharging at Outfall 003. That system was to be installed within the plant proper to treat wastewaters from the 10" rolling mill, which formerly used a continuous oil spray. The issuance of a WQM permit for a DAF unit further suggests that the oil/water separator located on the river-side of the earthen dike is obsolete; if it wasn't, then a DAF system to remove oil would not have been necessary.

Dale Hollabaugh, the former maintenance manager for the plant, indicated that oils are no longer used within the processes in the mill and cold finish buildings, so any oil removal devices may no longer be needed. The application makes no mention of the use of a DAF unit, which Braeburn may have stopped using when it ceased using oils within its processes.

Normally, oil and grease limits are imposed on oil-bearing wastewaters pursuant to 25 Pa. Code § 95.2(2). Irrespective of analytical data indicating the presence of oil-bearing wastewaters, the existence of an oil/water separator typically leads to the imposition of oil and grease limits because: 1) the existence of an oil/water separator suggests that oil-bearing wastewaters are (or were) present; and 2) limits are necessary to confirm that the separator is operated properly.

Analytical data submitted with the application shows that oil and grease was not detected at Outfall 003. However, since Outfall 003 still receives effluent from floor drains, a monthly monitoring requirement for oil and grease will be imposed to establish whether the effluent is an oil-bearing wastewater and whether oil removal technologies are necessary.

003.B. Water Quality-Based Effluent Limitations (WQBELs)

Reasonable Potential Analysis and WQBEL Development for Outfall 003

Discharges from Outfall 003 are evaluated based on concentrations reported on the application. As explained in Section 001.B of this Fact Sheet, the PENTOXSD model is run for the combination of Outfalls 001 and 003 with the modeled discharge and receiving stream characteristics shown in Table 5. The pollutants selected for analysis are those identified as candidates for modeling by the Toxics Screening Analysis. The screening for Outfall 003 identified cadmium and copper as pollutants for modeling, but phenols is included in the PENTOXSD analysis also because phenols was identified as a pollutant of concern for Outfall 001 (see Section 001.B of this Fact Sheet). Based on the recommendations of the Toxics Screening Analysis, the quarterly reporting requirement for copper will be maintained in the permit.

003.C. Effluent Limitations and Monitoring Requirements for Outfall 003

Effluent limits at Outfall 003 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(d)(1).

Table 9. Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.44(l)
Oil and Grease	—	—	15.0	20.0	—	40 CFR § 423.12(b)(3); BPJ
Temperature (°F)	—	—	—	110	—	Effluent Standard; BPJ
Copper, Total	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
pH	within the range of 6.0 to 9.0					25 Pa. Code § 95.2(1)

In accordance with the self-monitoring requirements given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, TSS will require 8-hour composite sampling 2/month. Discharges from Outfall 003 occur 8 hours per day, 5 days per week, so Table 6-4's requirement for 24-hour composite sampling for process wastewater discharges is reduced to eight hours to match the duration of the discharge. Copper will require 8-hour composite sampling 2/quarter. The monitoring frequency and sample type for oil and grease and pH will be 2/month using grab sampling. Temperature will require immersion stabilization sampling 2/month. Flow must be estimated 2/month at the time of sampling.

Development of Effluent Limitations

Outfall No. 004 **Design Flow (MGD)** 0.001
Latitude 40° 36' 49.06" **Longitude** -79° 42' 54.29"
Wastewater Description: Treated sanitary wastewaters

004.A. Technology-Based Effluent Limitations (TBELs)

25 Pa. Code § 92a.47 – Sewage permits

25 Pa. Code § 92a.47 specifies TBELs and effluent standards that apply to sewage discharges. Section 92a.47(a) requires that sewage be given a minimum of secondary treatment with significant biological treatment that achieves the following:

Table 10. TBELs for Sanitary Wastewater

Parameter	Monthly Average (mg/L)	Instant. Maximum (mg/L)	Basis
$CBOD_5$	25	50†	25 Pa. Code § 92a.47(a)(1)
Total Suspended Solids	30	60†	25 Pa. Code § 92a.47(a)(1)
Fecal Coliform (No./100 mL) May 1 – September 30	200 (Geometric Mean)	1,000	25 Pa. Code § 92a.47(a)(4)
Fecal Coliform (No./100 mL) October 1 – April 30	2,000 (Geometric Mean)	10,000	25 Pa. Code § 92a.47(a)(5)
Total Residual Chlorine	0.5 (or facility-specific)	1.6 (or facility-specific)	25 Pa. Code § 92a.47(a)(8)
pH (s.u.)	not less than 6.0 and not greater than 9.0		25 Pa. Code § 92a.47(a)(7)

†Value is calculated as two times the monthly average in accordance with Chapter 2 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations.

The TRC limits from § 92a.47(a)(8) are more stringent than Braeburn's current TRC limits. The Department considers dechlorination to be an appropriate, available, and affordable technology to comply with the TRC TBELs in § 92a.47(a)(8). DMR data indicate that Braeburn's long-term average TRC concentration over the last six years is 0.52 mg/L, which exceeds the monthly average TRC TBEL. Since Braeburn is likely to violate the new TBELs, a one-year schedule of compliance will be included in the permit pursuant to 25 Pa. Code § 92a.51(b). The schedule will give Braeburn time to design, permit, and install any dechlorination systems that may be necessary to comply with the § 92a.47(a)(8) TBELs. During the interim one-year period, the current TRC limits of 1.4 mg/L monthly average and 3.3 mg/L maximum daily will be in effect pursuant to anti-backsliding requirements in 40 CFR § 122.44(l).

004.B. Water Quality-Based Effluent Limitations (WQBELs)

For sewage discharges, DEP typically runs its WQM 7.0 water quality modeling program. WQM 7.0 is a water quality modeling program for Windows that determines waste load allocations and effluent limitations for carbonaceous biochemical oxygen demand, ammonia nitrogen, and dissolved oxygen for single and multiple point-source discharge scenarios. DEP previously determined that discharges from Outfall 004 do not have a reasonable potential to cause or contribute to an excursion above water quality criteria. That determination was based on the significant amount of mixing and dilution afforded by the Allegheny River (the discharge flow is about 0.000075% of the Allegheny River's $Q_{7\text{-}10}$ flow). Since the treated sewage discharge has not materially or substantially changed, the previous determination stands. This conclusion also applies to WQBELs for Total Residual Chlorine (normally evaluated using a separate modeling spreadsheet).

004.C. Effluent Limitations and Monitoring Requirements for Outfall 004

Effluent limits at Outfall 004 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements. Outfall 004 effluent limits and monitoring requirements are summarized in the table below.

Table 11. Effluent Limits and Monitoring Requirements for Outfall 004

Parameter	Mass (pounds)		Concentration (mg/L)		Basis
	Average Monthly	Daily Maximum	Average Monthly	Instant Maximum	
Flow (MGD)	0.001	—	—	—	25 Pa. Code § 92a.61(d)(1)

Table 11. Effluent Limits and Monitoring Requirements for Outfall 004

Parameter	Mass (pounds)		Concentration (mg/L)		Basis
	Average Monthly	Daily Maximum	Average Monthly	Instant Maximum	
$CBOD_5$	—	—	25	50	25 Pa. Code § 92a.47(a)(1)
Total Suspended Solids	—	—	30	60	25 Pa. Code § 92a.47(a)(1)
Fecal Coliform (No. /100mL) May 1 – September 30	—	—	200 (Geo. Mean)	1,000	25 Pa. Code § 92a.47(a)(4) ORSANCO Poll. Ctrl. Stds.
Fecal Coliform (No. /100mL) October 1 – April 30	—	—	2,000 (Geo. Mean)	10,000	25 Pa. Code § 92a.47(a)(5)
Total Residual Chlorine (Interim) †	—	—	1.4	3.3	TBELs; 40 CFR § 122.44(l)
Total Residual Chlorine (Final) †	—	—	0.5	1.6	25 Pa. Code § 92a.47(a)(8)
pH (s.u.)	not less than 6.0 nor greater than 9.0 standard units				25 Pa. Code § 92a.47(a)(7)

† Interim TRC limits apply for one year. Final TRC limits apply for the remainder of the permit term.

Monitoring frequencies and sample types are based on those specified in the current permit and on the self-monitoring requirements for sewage discharges from Chapter 6, Table 6-3 in DEP's *Technical Guidance for the Development and Specification of Effluent Limitations.* Consistent with the current permit and the recommendations in the *Technical Guidance*: flow must be measured weekly; $CBOD_5$, TSS, and fecal coliform bacteria must be sampled 2/month using grab samples; and TRC and pH must be sampled daily when discharging using grab samples. These sampling requirements apply to facilities with design flows between 500 and 2,000 gpd (Braeburn's sewage plant has a design flow of 1,000 gpd). More frequent monitoring is also appropriate for facilities that are currently in non-compliance or have been in non-compliance (Braeburn has reported fecal coliform violations with some regularity). Grab samples should be representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

The daily sampling frequencies for TRC and pH and weekly sampling for flow are more frequent than the sampling frequencies required for those parameters in previous permits. As NPDES permits for sewage discharges are being renewed, DEP is requiring all sewage dischargers to analyze TRC and pH at a minimum frequency of daily—consistent with existing *Technical Guidance*—to ensure adequate process control of sewage treatment plants. At present, it is unlikely that Braeburn can collect samples for TRC and pH daily. Braeburn should be able to measure flow weekly. Therefore, a one-year schedule will be included in the permit for the new TRC and pH sampling frequencies. For the interim one-year period, the permit's current 2/month sampling frequency will be in effect for TRC and pH. After one year, the permit will require "daily when discharging" sampling for TRC and pH.

Development of Effluent Limitations

Outfall No.	005	**Design Flow (MGD)**	Variable
Latitude	40° 36' 44.94"	**Longitude**	-79° 42' 53.51"

Wastewater Description: Storm water

Outfall 005 discharges into a lagoon owned by the U.S. Army Corps of Engineers. The lagoon is separated from the Allegheny River by a narrow strip of land with a two-lane road. Water from the lagoon discharges to the Allegheny River through an outlet pipe beneath the roadway.

Image Source and Date: Google Earth Pro; 4/17/2016

Outfall 005 previously discharged cooling water and storm water, but cooling water discharges from Outfall 005 were discontinued. Braeburn explained in the permit renewal application:

> The Fuller Compressor cooling water discharged through this outfall [005]. This compressor is no longer operational. Repairing this old compressor was not cost effective. A new air compressor which is air cooled replaced this equipment. The new air compressor was started up on 11/14/16. Cooling water was discharged through outfall 005 until approximately the end of January 2018. It is not our intent to ever run the Fuller compressor again. Therefore outfall 005 will only receive storm water from surface drains in the future.

005.A. Technology-Based Effluent Limitations (TBELs)

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in the PAG-03 will be applied to Outfall 005 (see Table 7 in Section 002.A of this Fact Sheet). No TBELs will be imposed at Outfall 005 at this time.

005.B. Water Quality-Based Effluent Limitations (WQBELs)

No WQBELs are developed for Outfall 005. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at Q_{7-10} low flow conditions. Precipitation-induced discharges generally do not occur at Q_{7-10} design conditions because the precipitation that causes a storm water discharge will also increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event.

Even though no mathematical modeling is performed, conditions in Part C of the permit will ensure compliance with water quality standards through a combination of best management practices including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

005.C. Effluent Limitations and Monitoring Requirements for Outfall 005

Effluent limits at Outfall 005 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(d)(1).

Table 12. Effluent Limits and Monitoring Requirements for Outfall 005

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
pH (s.u.)	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B

The sampling frequency and type for all parameters will be 1/6 months grab samples as established in Appendix B of the PAG-03 General Permit on which the monitoring requirements are based. Flow should be estimated at the time of sampling. If there are no discharges from Outfall 002, then Braeburn would report "no discharge" on semi-annual Discharge Monitoring Reports.

Development of Effluent Limitations

Outfall No. 012 **Design Flow (MGD)** 0.008
Latitude 40° 36' 54.28" **Longitude** -79° 42' 45.78"
Wastewater Description: Excess river water from the intake pumps and storm water

012.A. Technology-Based Effluent Limitations (TBELs)

Excess intake water and storm water are not subject to Federal ELGs. Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in the PAG-03 will be applied to Outfall 012 (see Table 7 in Section 002.A of this Fact Sheet).

Existing Requirements

Effluent limits and monitoring requirements in the current permit include an instantaneous maximum limit of 30 mg/L for oil and grease and reporting requirements for flow and total suspended solids. Braeburn analyzes for oil and grease and TSS once per quarter and reports estimated discharge flow rates once per month. The oil and grease limit dates to the NPDES permit issued to Braeburn by EPA on June 28, 1977. At that time, EPA wrote NPDES permits for some facilities in Pennsylvania and Pennsylvania's Department of Environmental Resources certified whether the permit complied with state law and made recommendations if not. As part of Pennsylvania's March 16, 1977 letter certifying EPA's 1977 NPDES permit for Braeburn, oil and grease limits (15 mg/L average and 30 mg/L maximum) were required at all outfalls in existence at that time (001, 002, 003, 005, and 012). The March 16, 1977 letter did not provide a justification for the requirement, but the Department of Environmental Resources previously recorded oil releases from Braeburn on September 28, 1973 and April 30, 1974. There was also the March 1, 1979 significant oil release discussed in Section 003.A of this Fact Sheet and a later release of 2,143 mg/L of oil from Outfall 012 on April 10, 1979. The oil discharged from Outfall 012 originated from a storage area for oily scrap. Soil borings in October 10, 1979 also identified oil in the subsurface.

Pursuant to EPA's anti-backsliding regulation at 40 CFR § 122.44(l), the oil and grease limits and quarterly reporting will be maintained at this outfall. Quarterly TSS monitoring also will be maintained pursuant to 25 Pa. Code § 92a.61(b). Like the oil and grease limits, TSS monitoring was required in the 1977 permit based on elevated TSS concentrations at that time (476 mg/L). DMR data and current application data exhibit wide variation in TSS concentrations ranging from 3 mg/L to 490 mg/L. The elevated TSS concentrations may be attributable to excess river water, but that is unlikely because intake river water is filtered by Braeburn. Braeburn did not report the concentrations of pollutants in its intake water so DEP cannot determine if river water is a source of TSS. Regardless, TSS reporting will be maintained.

Table 13. Analytical Results for Outfall 012

Parameter	Outfall 012 Concentration (Analysis Results Tables of Application) (mg/L)	Outfall 012 Concentration (Module 1 of Application) (mg/L)	MSGP Benchmarks (mg/L)
Oil and Grease (mg/L)	5	<2.0	N/A
BOD_5 (mg/L)	<2.0	7.1	30
COD (mg/L)	61	33	120
TSS (mg/L)	62	490	100
Total Nitrogen (mg/L)	1.3 (TKN)	1.7	N/A
Total Phosphorus (mg/L)	0.22	0.51	2.0
pH (s.u.)	7.1	7.78	6.0 – 9.0 s.u.
Antimony, Total	0.0017	0.0028	0.64
Arsenic, Total	0.0027	0.0079	0.15
Barium, Total	0.059	0.14	N/A
Beryllium, Total	<0.0005	0.00067	0.13
Boron, Total	<0.050	0.070	N/A
Cadmium, Total	0.00038	0.0016	0.0021
Chromium, Total	0.076	0.27	N/A
Chromium, Hexavalent	0.0032	3.0	N/A
Cobalt, Total	0.028	0.17	N/A
Copper, Total	0.200	0.52	0.014
Iron, Total	4.7	18.9	1.0

Table 13 (continued). Analytical Results for Outfall 012

Parameter	Outfall 012 Concentration (Analysis Results Tables of Application) (mg/L)	Outfall 012 Concentration (Module 1 of Application) (mg/L)	MSGP Benchmarks (mg/L)
Iron, Dissolved	0.140	<0.020	1.0
Lead, Total	0.021	0.060	0.082
Manganese, Total	0.35	1.2	N/A
Mercury, Total	0.0000175	<0.00020	0.0014
Molybdenum, Total	0.18	0.52	N/A
Nickel, Total	0.18	0.66	0.47
Selenium, Total	<0.002	<0.0020	0.005
Silver, Total	<0.00033	0.00068	0.0038
Thallium, Total	<0.0005	<0.00050	N/A
Zinc, Total	0.075	0.48	0.12

012.B. Water Quality-Based Effluent Limitations (WQBELs)

No WQBELs are developed for discharges from Outfall 012. Flow-through storm water that is not detained by a facility should not discharge at Q_{7-10} design conditions. Additionally, the quality of excess river water from the intake should be the same as the quality of the river. To the extent that the effluent quality might be different, such differences should only be attributable to storm water runoff, which is subject to best management practices to minimize storm water contamination.

012.C. Effluent Limitations and Monitoring Requirements for Outfall 012

Effluent limits applicable at Outfall 012 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(d)(1).

Table 14. Effluent Limits and Monitoring Requirements for Outfall 012

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	—	—	—	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	—	Report	—	25 Pa. Code §§ 92a.61(b) and (h); 40 CFR § 122.44(l)
Oil and Grease	—	—	—	30.0	—	25 Pa. Code §§ 92a.61(b) and (h); 40 CFR § 122.44(l)
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
pH (s.u.)	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B

The existing sampling frequencies and types for flow (1/month estimate), oil and grease (1/quarter grab), and TSS (1/quarter grab) will remain unchanged. The sampling frequency and type for all other parameters will be 1/6 months using grab samples as established in Appendix B of the PAG-03 General Permit.

Development of Effluent Limitations

Outfall No. 013 **Design Flow (MGD)** Variable
Latitude 40° 37' 10.10" **Longitude** -79° 42' 46.40"
Wastewater Description: Storm water

Although storm water discharges from Outfall 013 are not discharges to surface waters, they are potential pollutant-bearing discharges of storm water associated with industrial activities (from material laydown areas) to groundwater. Groundwater is a water of the Commonwealth pursuant to Section 1 of the Pennsylvania Clean Streams Law (35 P.S. § 691.1). DEP is choosing to regulate industrial storm water discharges from Outfall 013 under Braeburn's NPDES in accordance with Sections 301 and 307 of the Pennsylvania Clean Streams Law (35 P.S. §§ 691.301 and 691.307).

013.A. Technology-Based Effluent Limitations (TBELs)

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in the PAG-03 will be applied to Outfall 013 (see Table 7 in Section 002.A of this Fact Sheet). No TBELs will be imposed at Outfall 013 at this time. However, based on the analytical results for Outfall 013's storm water, hexavalent chromium will be added to the parameter list for semi-annual sampling.

Table 15. Analytical Results for Outfall 013

Parameter	Outfall 013 Concentration (mg/L)	MSGP Benchmarks (mg/L)
Oil and Grease (mg/L)	<2.1	N/A
BOD_5 (mg/L)	<2.0	30
COD (mg/L)	<7.0	120
TSS (mg/L)	14	100
Total Nitrogen (mg/L)	0.7	N/A
Total Phosphorus (mg/L)	0.057	2.0
pH (s.u.)	7.78	6.0 – 9.0 s.u.
Antimony, Total	0.00056	0.64
Arsenic, Total	0.0015	0.15
Barium, Total	0.013	N/A
Beryllium, Total	0.00018	0.13
Boron, Total	<0.50	N/A
Cadmium, Total	0.00022	0.0021
Chromium, Total	0.020	N/A
Chromium, Hexavalent	1.4	N/A
Cobalt, Total	0.012	N/A
Copper, Total	0.070	0.014
Iron, Total	1.3	1.0
Iron, Dissolved	0.76	1.0
Lead, Total	0.0044	0.082
Manganese, Total	0.070	N/A
Mercury, Total	<0.00020	0.0014
Molybdenum, Total	0.28	N/A
Nickel, Total	0.033	0.47
Selenium, Total	<0.0020	0.005
Silver, Total	<0.00050	0.0038
Thallium, Total	<0.00050	N/A
Zinc, Total	0.091	0.12

013.B. Water Quality-Based Effluent Limitations (WQBELs)

Discharges from Outfall 013 are not direct surface water discharges so no WQBELs are developed.

013.C. Effluent Limitations and Monitoring Requirements for Outfall 013

Effluent limits applicable at Outfall 013 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in the table below. Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(h).

Table 16. Effluent Limits and Monitoring Requirements for Outfall 013

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Chromium, Hexavalent	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B
pH (s.u.)	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, Appendix B

The sampling frequency and type for all parameters will be 1/6 months grab samples as established in Appendix B of the PAG-03 General Permit. Flow should be estimated at the time of sampling.

Clean Water Act Section 316(b) – Best Technology Available for Cooling Water Intake Structures

On August 15, 2014, EPA promulgated Clean Water Act Section 316(b) regulations applicable to cooling water intake structures. The regulations established best technology available ("BTA") standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power-generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

Braeburn's Cooling Water Intake Structure

Braeburn owns and operates an intake structure in Pool 4 along the eastern shoreline of the Allegheny River on the back-channel side of Jacks Island about a quarter-mile upstream of Lock and Dam 4. The intake structure consists of a 16-inch diameter wrought iron pipe extending through an earthen dike into the Allegheny River. An inspection of the intake pipe on October 15, 2019 by Specialty Underwater Services revealed the following characteristics: a length of pipe about twenty-six feet long protrudes from the shore at a downward angle. The pipe protrusion at the shore is about eight inches below the water surface and about three feet below the water surface and eight feet above the river bottom at the pipe's furthest extent. The final six feet of the pipe furthest from the shore has four rows of 26 slots on the top and sides of the pipe. There are no slots on the bottom of the pipe. Each slot is about six inches long and ½-inch wide. The end of the pipe is capped by a flat plate with two rows of seven vertically-oriented slots about four inches long and ½-inch wide.

The cross-sectional area of the intake pipe's openings is as follows:

$$[((6 \text{ inches} \times 0.5 \text{ inches}) / \text{slot}) \times 26 \text{ slots/row} \times 4 \text{ rows}] + [((4 \text{ inches} \times 0.5 \text{ inches}) / \text{slot}) \times 7 \text{ slots/row} \times 2 \text{ rows}]$$

$$= 312 \text{ in}^2 + 28 \text{ in}^2 = 340 \text{ in}^2$$

$$340 \text{ in}^2 \div (144 \text{ in}^2 / \text{ft}^2) = 2.361 \text{ ft}^2$$

When the NPDES permit renewal application was submitted in April 2017, Braeburn operated an intake pump with a design capacity of 1,600 gallons per minute (2.304 MGD). While the renewal application was pending, Braeburn replaced the existing intake pump with a Goulds Model 3410 pump, which has a design capacity of 1,000 gallons per minute (1.44 MGD or 2.228 cfs).

At the new pump's design capacity of 1,000 gpm, the through-screen (i.e., slot) design velocity of the intake is as follows:

$$2.228 \text{ cfs} \div 2.361 \text{ ft}^2 \approx 0.94 \text{ feet per second}$$

During the October 15, 2019 intake inspection, Specialty Underwater Services recorded a maximum "through-screen" actual velocity of 0.27 feet per second with 80% restriction of the intake slots and lower velocities with no restrictions.

Notification Requirements

40 CFR § 125.98(h) requires that all permit applications for facilities subject to 40 CFR Part 125, Subpart J be transmitted to the appropriate Field Office of the U.S. Fish and Wildlife Service and/or Regional Office of the National Marine Fisheries Service upon receipt for a 60-day review prior to public notice of the draft or proposed permit. Application information pertaining to Braeburn's cooling water intake structure was transmitted to the U.S. Fish & Wildlife Service's Pennsylvania Field Office and to the Pennsylvania Fish and Boat Commission on December 21, 2018. The 60-day review period expired on February 19, 2019. By email dated February 8, 2019, the U.S. Fish and Wildlife Service indicated that it had no comments. No comments were received from the Pennsylvania Fish and Boat Commission.

Applicability Criteria Evaluation

Braeburn is an "existing facility" as defined in 40 CFR § 125.92(k).[5] Existing facilities are subject to 40 CFR Part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act (§§ 125.90 – 125.99) pursuant to the applicability criteria given by § 125.91(a) as follows:

[5] *Existing facility* means any facility that commenced construction as described in 40 CFR 122.29(b)(4) on or before January 17, 2002 (or July 17, 2006 for an offshore oil and gas extraction facility) and any modification of, or any addition of a unit at such a facility. A facility built adjacent to another facility would be a new facility while the original facility would remain as an existing facility for purposes of this subpart. A facility cannot both be an existing facility and a new facility as defined at §125.83.

(1) The facility is a point source;

(2) The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and

(3) Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

Braeburn is a point source as defined in 40 CFR § 122.2.[6] Braeburn's point sources are permitted by NPDES Permit PA0001406.

The Design Intake Flow ("DIF")[7] of the intake structure has changed from 2.304 MGD to 1.44 MGD. The new intake pump reflects a permanent change to the maximum capabilities of the cooling water intake system to withdraw cooling water. The new DIF is less than the 2 MGD applicability threshold.

On Module 5 of the permit renewal application submitted in April 2017, Braeburn reported the Actual Intake Flow ("AIF")[8] as 2.3 MGD and indicated that fifty percent of that AIF was used for cooling (about 1.15 MGD). Presuming that Braeburn's water use rates have remained the same and that the new intake pump is operated at capacity, the percentage of the new AIF used for cooling is 1.15 / 1.44 = 0.7986 or about 80%, which exceeds the 25% applicability threshold.

Braeburn only meets two of the three applicability criteria in § 125.91(a) and is consequently not subject to the requirements of 40 CFR §§ 125.94 through 125.99. However, pursuant to § 125.90(b) reproduced below, Braeburn is subject to Best Technology Available requirements for impingement mortality and entrainment minimization established by the Department using Best Professional Judgement:

> Cooling water intake structures not subject to requirements under §§125.94 through 125.99 or subparts I or N of this part must meet requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis.

Best Professional Judgement ("BPJ") of Best Technology Available for Impingement Minimization

In the Department's judgement, facilities subject to § 125.90(b) that meet at least one of the following impingement compliance options is considered to have BTA for impingement mortality if there is no evidence of adverse impacts due to impingement.

1. Closed-Cycle Recirculating System.
2. 0.5 Feet Per Second (fps) Through-Screen Design Velocity.
3. 0.5 fps Through-Screen Actual Velocity. If this option is chosen, a monitoring requirement for through-screen velocity is included in the permit.
4. Modified Traveling Screens with a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote re-impingement of the fish or require a large vertical drop. If this option is chosen, a requirement to demonstrate that the technology is or will be optimized to minimize impingement mortality of non-fragile species is included in the permit.

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[6] *Point source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.

[7] *Design intake flow* (DIF) means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody. The facility's DIF may be adjusted to reflect permanent changes to the maximum capabilities of the cooling water intake system to withdraw cooling water, including pumps permanently removed from service, flow limit devices, and physical limitations of the piping. DIF does not include values associated with emergency and fire suppression capacity or redundant pumps (i.e., back-up pumps).

[8] *Actual Intake Flow* is a separate term in the Existing Facilities Rule defined as "the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years. After October 14, 2019, Actual Intake Flow means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. Actual intake flow is measured at a location within the cooling water intake structure that the Director deems appropriate. The calculation of actual intake flow includes days of zero flow. AIF does not include flows associated with emergency and fire suppression capacity."

Of the four options, Braeburn currently implements one: a through-screen actual velocity of 0.5 fps. Braeburn does not operate a closed-cycle recirculating system; the through-screen design velocity is greater than 0.5 fps; and the intake is not equipped with traveling screens.

Since the through-screen design velocity of Braeburn's intake structure is greater than the intake structure's through-screen actual velocity, Braeburn must monitor the intake structure's through-screen velocity at a minimum frequency of daily to ensure that a maximum velocity of 0.5 fps is achieved under all conditions. In lieu of velocity monitoring at the intake's openings, Braeburn can calculate the through-screen velocity using water flow, water depth, and the area of the intake slots.

BPJ of BTA for Entrainment

In the Department's judgement, facilities subject to § 125.90(b) that meet at least one of the following entrainment compliance options is considered to have BTA for entrainment if there is no evidence of adverse impacts due to entrainment.

1. Closed-Cycle Recirculating System.

2. The actual intake flow (AIF) is less than or equal to 5% of the mean annual flow of the river. For cases where this option is being used, cumulative withdrawals from nearby facilities are considered.

3. Seasonal flow reductions – If a facility can reduce flows to mimic closed cycle cooling during spawning and biologically important time periods.

Of these three options, Braeburn complies with #2. Actual Intake Flow is calculated as the average volume of water withdrawn on an annual basis by the cooling water intake structure(s) over the previous five years per the 40 CFR § 125.92(a) definition of AIF. The previous five years includes flow data preceding the replacement of the intake pump and the associated decrease in the maximum intake flow. Assuming the worst case, Braeburn's AIF is its old maximum withdrawal flow rate: 2.304 MGD or 3.5648 cfs. The mean annual flow of the Allegheny River as reported for Water Years 1939 through 2018 at USGS Gage 03049500 – Allegheny River at Natrona, PA is 19,910 cfs (see p.E-5 in Attachment E). The percentage of the Allegheny River's mean annual flow taken in by Braeburn is:

3.5648 cfs ÷ 19,910 cfs = 0.0179%

Since Braeburn's AIF is less than 5% of the mean annual flow of the Allegheny River and there are no other withdrawals from nearby facilities that can reduce the Allegheny River's flow by an amount that would risk causing Braeburn's AIF to be within 5% of the Allegheny River's flow (the flow of the Allegheny River would have to be less than about 71 cfs for Braeburn's AIF to exceed 5%), Braeburn has BTA for entrainment.

The following conditions will be included in the permit to implement § 316(b) requirements.

COOLING WATER INTAKE STRUCTURES

A. Nothing in this permit authorizes a take of endangered or threatened species under the Endangered Species Act.

B. Technology and operational measures employed at the cooling water intake structures must be operated in a way that minimizes impingement mortality and entrainment to the fullest extent possible.

C. The location, design, construction or capacity of the intake structure(s) may not be altered without prior approval of DEP.

D. The permittee must notify DEP before changing the source of cooling water.

E. The permittee shall retain data and other records for any information developed pursuant to Section 316(b) of the Clean Water Act for a minimum of ten years.

F. Throughout the permit term, the permittee shall continue to operate and maintain the following technologies or BMPs that constitute Best Technology Available (BTA) for reducing impingement:

- 0.5 feet per second (fps) through-screen actual velocity. The permittee shall monitor the through-screen actual velocity once per week. In lieu of velocity monitoring, the permittee may calculate the through-screen velocity using water flow, water depth, and the screen open areas. The data shall be submitted annually.

G. Throughout the permit term, the permittee shall continue to operate and maintain the following technologies or BMPs that constitute Best Technology Available (BTA) for reducing entrainment:

- Maintenance of actual intake flow of 5% or less of the mean annual flow of the surface waters.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment C)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment B)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing Effluent Limitations for Individual Industrial Permits, BCW-PMT-032, v1.5, 1/10/2019.
☒	SOP: Establishing Effluent Limitations for Individual Sewage Permits, BCW-PMT-033, v1.6, 1/10/2019.
☒	SOP: Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers, BCW-PMT-037, v1.2, 7/30/2019.
☒	SOP: New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, BPNPSM-PMT-001, v1.5, 10/11/2013.
☐	Other:

ATTACHMENT A

BPT Effluent Limitations
Hot Forming Subcategory

TABLE IX-13

BPT EFFLUENT LIMITATIONS
HOT FORMING SUBCATEGORY

		Concentration (mg/l) All Hot Forming	Primary Mills		Section Mills		Flat			Pipe & Tube & Mills
			Without Scarfers	With Scarfers	Carbon	Specialty	Hot Strip & Sheet	Carbon Plate	Specialty Plate	Carbon & Specialty
Discharge Flow (gal/ton)		-	897	1,326	2,142	1,344	2,560	1,360	600	1,270
Total Suspended Solids	Avg.	15	0.0561	0.0830	0.134	0.0841	0.160	0.0851	0.0375	0.0795
	Max.	40	0.150	0.221	0.357	0.224	0.407	0.227	0.100	0.212
Oil & Grease	Avg.	-	-	-	-	-	-	-	-	-
	Max.	10	0.0374	0.0553	0.0894	0.0561	0.107	0.0567	0.0250	0.0530

330

Note: pH is also regulated at BPT and is limited to 6.0 to 9.0 standard units for all hot forming operations.

ATTACHMENT B

Toxics Screening Analyses

TOXICS SCREENING ANALYSIS – OUTFALL 001
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

Facility: **Braeburn Alloy Steel** NPDES Permit No.: **PA0001406** Outfall: **001**

Analysis Hardness (mg/L): **82.9** Discharge Flow (MGD): **0.338** Analysis pH (SU): **7**

Stream Flow, Q_{7-10} (cfs): **2390**

Parameter		Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Pollutant Group 1						
Total Dissolved Solids		198000	500000	No		
Chloride		31400	250000	No		
Bromide	<	200	N/A	No		
Sulfate		45200	250000	No		
Fluoride	<	200	2000	No (Value < QL)		
Pollutant Group 2 – Metals						
Total Aluminum		430	750	No		
Total Antimony	<	1	5.6	No (Value < QL)		
Total Arsenic	<	1.5	10	No (Value < QL)		
Total Barium		89	2400	No		
Total Beryllium	<	0.5	N/A	No		
Total Boron	<	50	1600	No (Value < QL)		
Total Cadmium	<	0.16	0.236	No (Value < QL)		
Total Chromium		7.8	N/A	No		
Hexavalent Chromium	<	0.25	10.4	No (Value < QL)		
Total Cobalt		1.9	19	No		
Total Copper		11	8.0	Yes	1543.021	No Limits/Monitoring
Total Cyanide	<	5	N/A	No		
Total Iron		660	1500	No		
Dissolved Iron		140	300	No		
Total Lead	<	1	2.5	No (Value < QL)		
Total Manganese		280	1000	No		
Total Mercury		0.0026	0.05	No		
Total Molybdenum		3.6	N/A	No		
Total Nickel		28	44.5	No		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Total Phenols (Phenolics)		64	5	Yes	13610.39	No Limits/Monitoring
Total Selenium	<	2	5.0	No (Value < QL)		
Total Silver	<	0.33	2.7	No (Value < QL)		
Total Thallium	<	0.5	0.24	No (Value < QL)		
Total Zinc		12	102.2	No		
Pollutant Group 3 – Volatiles						
Acrolein	<	1.9	3	No (Value < QL)		
Acrylamide	<		0.07			
Acrylonitrile	<	5	0.051	No (Value < QL)		
Benzene	<	0.23	1.2	No (Value < QL)		
Bromoform	<	0.4	4.3	No (Value < QL)		
Carbon Tetrachloride	<	0.31	0.23	No (Value < QL)		
Chlorobenzene	<	0.19	130	No (Value < QL)		
Chlorodibromomethane	<	0.45	0.4	No (Value < QL)		
Chloroethane	<	0.33	N/A	No		
2-Chloroethyl Vinyl Ether	<	2	3500	No (Value < QL)		
Chloroform	<	0.21	5.7	No (Value < QL)		
Dichlorobromomethane	<	0.27	0.55	No (Value < QL)		
1,1-Dichloroethane	<	0.28	N/A	No		
1,2-Dichloroethane	<	0.32	0.38	No (Value < QL)		
1,1-Dichloroethylene	<	0.29	33	No (Value < QL)		
1,2-Dichloropropane	<	0.24	2200	No (Value < QL)		
1,3-Dichloropropylene	<	0.47	0.34	No (Value < QL)		
Ethylbenzene	<	0.34	530	No (Value < QL)		
Methyl Bromide		0.44	47	No		
Methyl Chloride		0.4	5500	No		
Methylene Chloride		2.6	4.6	No		
1,1,2,2-Tetrachloroethane	<	0.34	0.17	No (Value < QL)		
Tetrachloroethylene	<	0.35	0.69	No (Value < QL)		
Toluene	<	0.23	330	No (Value < QL)		
1,2-trans-Dichloroethylene	<	0.26	140	No (Value < QL)		
1,1,1-Trichloroethane	<	0.22	610	No (Value < QL)		
1,1,2-Trichloroethane	<	0.33	0.59	No (Value < QL)		
Trichloroethylene	<	0.33	2.5	No (Value < QL)		
Vinyl Chloride	<	0.3	0.025	No (Value < QL)		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Pollutant Group 4 – Acid Compounds						
2-Chlorophenol	<	3.1	81	No (Value < QL)		
2,4-Dichlorophenol	<	3.1	77	No (Value < QL)		
2,4-Dimethylphenol	<	3.1	130	No (Value < QL)		
4,6-Dinitro-o-Cresol	<	6.2	13	No (Value < QL)		
2,4-Dinitrophenol	<	6.2	69	No (Value < QL)		
2-Nitrophenol	<	3.1	1600	No (Value < QL)		
4-Nitrophenol	<	3.1	470	No (Value < QL)		
p-Chloro-m-Cresol	<	3.1	30	No (Value < QL)		
Pentachlorophenol	<	6.2	0.27	No (Value < QL)		
Phenol		12.2	10400	No		
2,4,6-Trichlorophenol	<	3.1	1.4	No (Value < QL)		
Pollutant Group 5 – Base Compounds						
Acenaphthene	<	1.5	17	No (Value < QL)		
Acenaphthylene	<	1.5	N/A	No		
Anthracene	<	1.5	8300	No (Value < QL)		
Benzidine	<	8.2	0.000086	No (Value < QL)		
Benzo(a)Anthracene	<	1.5	0.0038	No (Value < QL)		
Benzo(a)Pyrene	<	1.5	0.0038	No (Value < QL)		
3,4-Benzofluoranthene	<	1.5	0.0038	No (Value < QL)		
Benzo(ghi)Perylene	<	1.5	N/A	No		
Benzo(k)Fluoranthene	<	1.5	0.0038	No (Value < QL)		
Bis(2-Chloroethoxy)Methane	<	3.1	N/A	No		
Bis(2-Chloroethyl)Ether	<	3.1	0.03	No (Value < QL)		
Bis(2-Chloroisopropyl)Ether	<	3.1	1400	No (Value < QL)		
Bis(2-Ethylhexyl)Phthalate	<	3.1	1.2	No (Value < QL)		
4-Bromophenyl Phenyl Ether	<	3.1	54	No (Value < QL)		
Butyl Benzyl Phthalate	<	3.1	35	No (Value < QL)		
2-Chloronaphthalene	<	3.1	1000	No (Value < QL)		
4-Chlorophenyl Phenyl Ether	<	3.1	N/A	No		
Chrysene	<	1.5	0.0038	No (Value < QL)		
Dibenzo(a,h)Anthrancene	<	1.5	0.0038	No (Value < QL)		
1,2-Dichlorobenzene	<	0.38	160	No (Value < QL)		
1,3-Dichlorobenzene	<	0.2	69	No (Value < QL)		
1,4-Dichlorobenzene	<	0.27	150	No (Value < QL)		
3,3-Dichlorobenzidine	<	3.1	0.021	No (Value < QL)		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Diethyl Phthalate	<	3.1	800	No (Value < QL)		
Dimethyl Phthalate	<	3.1	500	No (Value < QL)		
Di-n-Butyl Phthalate	<	3.1	21	No (Value < QL)		
2,4-Dinitrotoluene	<	3.1	0.05	No (Value < QL)		
2,6-Dinitrotoluene	<	3.1	0.05	No (Value < QL)		
1,4-Dioxane	<	3.1	N/A	No		
Di-n-Octyl Phthalate	<	3.1	N/A	No		
1,2-Diphenylhydrazine	<	3.1	0.036	No (Value < QL)		
Fluoranthene	<	1.5	40	No (Value < QL)		
Fluorene	<	1.5	1100	No (Value < QL)		
Hexachlorobenzene	<	3.1	0.00028	No (Value < QL)		
Hexachlorobutadiene	<	0.2	0.44	No (Value < QL)		
Hexachlorocyclopentadiene	<	3.1	1	No (Value < QL)		
Hexachloroethane	<	3.1	1.4	No (Value < QL)		
Indeno(1,2,3-cd)Pyrene	<	1.5	0.0038	No (Value < QL)		
Isophorone	<	3.1	35	No (Value < QL)		
Naphthalene		0.14	43	No		
Nitrobenzene	<	3.1	17	No (Value < QL)		
n-Nitrosodimethylamine	<	3.1	0.00069	No (Value < QL)		
n-Nitrosodi-n-Propylamine	<	3.1	0.005	No (Value < QL)		
n-Nitrosodiphenylamine	<	3.1	3.3	No (Value < QL)		
Phenanthrene	<	1.5	1	No (Value < QL)		
Pyrene	<	1.5	830	No (Value < QL)		
1,2,4-Trichlorobenzene	<	3.1	26	No		

TOXICS SCREENING ANALYSIS – OUTFALL 003
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

Facility: **Braeburn Alloy Steel** NPDES Permit No.: **PA0001406** Outfall: **003**

Analysis Hardness (mg/L): **82.9** Discharge Flow (MGD): **0.23** Analysis pH (SU): **7**

Stream Flow, Q_{7-10} (cfs): **2390**

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Pollutant Group 1						
Total Dissolved Solids		132000	500000	No		
Chloride		22500	250000	No		
Bromide	<	200	N/A	No		
Sulfate		34600	250000	No		
Fluoride		360	2000	No		
Pollutant Group 2 – Metals						
Total Aluminum		520	750	No		
Total Antimony	<	1	5.6	No (Value < QL)		
Total Arsenic	<	1.5	10	No (Value < QL)		
Total Barium		42	2400	No		
Total Beryllium	<	0.5	N/A	No		
Total Boron	<	100	1600	No (Value < QL)		
Total Cadmium	<	0.32	0.236	Yes	231.887	No Limits/Monitoring
Total Chromium		3.8	N/A	No		
Hexavalent Chromium		1.7	10.4	No		
Total Cobalt		6.5	19	No		
Total Copper		160	8.0	Yes	1543.021	Monitor
Total Cyanide	<	5	N/A	No		
Total Iron		930	1500	No		
Dissolved Iron		150	300	No		
Total Lead		3	2.5	Yes	3189.392	No Limits/Monitoring
Total Manganese		220	1000	No		
Total Mercury		0.0035	0.05	No		
Total Molybdenum		77	N/A	No		
Total Nickel		7.6	44.5	No		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Total Phenols (Phenolics)	<	5	5	No (Value < QL)	13610.39	
Total Selenium	<	4	5.0	No (Value < QL)		
Total Silver	<	0.66	2.7	No		
Total Thallium	<	1	0.24	No (Value < QL)		
Total Zinc		19	102.2	No		
Pollutant Group 3 – Volatiles						
Acrolein	<	1.9	3	No (Value < QL)		
Acrylamide	<		0.07			
Acrylonitrile	<	5	0.051	No (Value < QL)		
Benzene	<	0.23	1.2	No (Value < QL)		
Bromoform	<	0.4	4.3	No (Value < QL)		
Carbon Tetrachloride	<	0.31	0.23	No (Value < QL)		
Chlorobenzene	<	0.19	130	No (Value < QL)		
Chlorodibromomethane	<	0.45	0.4	No (Value < QL)		
Chloroethane	<	0.33	N/A	No		
2-Chloroethyl Vinyl Ether	<	2	3500	No (Value < QL)		
Chloroform	<	0.21	5.7	No (Value < QL)		
Dichlorobromomethane	<	0.27	0.55	No (Value < QL)		
1,1-Dichloroethane	<	0.28	N/A	No		
1,2-Dichloroethane	<	0.32	0.38	No (Value < QL)		
1,1-Dichloroethylene	<	0.29	33	No (Value < QL)		
1,2-Dichloropropane	<	0.24	2200	No (Value < QL)		
1,3-Dichloropropylene	<	0.47	0.34	No (Value < QL)		
Ethylbenzene	<	0.34	530	No (Value < QL)		
Methyl Bromide		0.4	47	No		
Methyl Chloride		0.42	5500	No		
Methylene Chloride		2.2	4.6	No		
1,1,2,2-Tetrachloroethane	<	0.34	0.17	No (Value < QL)		
Tetrachloroethylene	<	0.35	0.69	No (Value < QL)		
Toluene	<	0.23	330	No (Value < QL)		
1,2-trans-Dichloroethylene	<	0.26	140	No (Value < QL)		
1,1,1-Trichloroethane	<	0.22	610	No (Value < QL)		
1,1,2-Trichloroethane	<	0.33	0.59	No (Value < QL)		
Trichloroethylene	<	0.33	2.5	No (Value < QL)		
Vinyl Chloride	<	0.3	0.025	No (Value < QL)		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Pollutant Group 4 – Acid Compounds						
2-Chlorophenol	<	3.2	81	No (Value < QL)		
2,4-Dichlorophenol	<	3.2	77	No (Value < QL)		
2,4-Dimethylphenol	<	3.2	130	No (Value < QL)		
4,6-Dinitro-o-Cresol	<	6.5	13	No (Value < QL)		
2,4-Dinitrophenol	<	6.5	69	No (Value < QL)		
2-Nitrophenol	<	3.2	1600	No (Value < QL)		
4-Nitrophenol	<	3.2	470	No (Value < QL)		
p-Chloro-m-Cresol	<	3.2	30	No (Value < QL)		
Pentachlorophenol	<	6.5	0.27	No (Value < QL)		
Phenol	<	8.6	10400	No (Value < QL)		
2,4,6-Trichlorophenol	<	3.2	1.4	No (Value < QL)		
Pollutant Group 5 – Base Compounds						
Acenaphthene	<	1.6	17	No (Value < QL)		
Acenaphthylene	<	1.6	N/A	No		
Anthracene	<	1.6	8300	No (Value < QL)		
Benzidine	<	8.6	0.000086	No (Value < QL)		
Benzo(a)Anthracene	<	1.6	0.0038	No (Value < QL)		
Benzo(a)Pyrene	<	1.6	0.0038	No (Value < QL)		
3,4-Benzofluoranthene	<	1.6	0.0038	No (Value < QL)		
Benzo(ghi)Perylene	<	1.6	N/A	No		
Benzo(k)Fluoranthene	<	1.6	0.0038	No (Value < QL)		
Bis(2-Chloroethoxy)Methane	<	3.2	N/A	No		
Bis(2-Chloroethyl)Ether	<	3.2	0.03	No (Value < QL)		
Bis(2-Chloroisopropyl)Ether	<	3.2	1400	No (Value < QL)		
Bis(2-Ethylhexyl)Phthalate	<	3.2	1.2	No (Value < QL)		
4-Bromophenyl Phenyl Ether	<	3.2	54	No (Value < QL)		
Butyl Benzyl Phthalate	<	3.2	35	No (Value < QL)		
2-Chloronaphthalene	<	3.2	1000	No (Value < QL)		
4-Chlorophenyl Phenyl Ether	<	3.2	N/A	No		
Chrysene	<	1.6	0.0038	No (Value < QL)		
Dibenzo(a,h)Anthrancene	<	1.6	0.0038	No (Value < QL)		
1,2-Dichlorobenzene	<	0.38	160	No (Value < QL)		
1,3-Dichlorobenzene	<	0.25	69	No (Value < QL)		
1,4-Dichlorobenzene	<	0.27	150	No (Value < QL)		
3,3-Dichlorobenzidine	<	3.2	0.021	No (Value < QL)		

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Diethyl Phthalate	<	3.2	800	No (Value < QL)		
Dimethyl Phthalate	<	3.2	500	No (Value < QL)		
Di-n-Butyl Phthalate	<	3.2	21	No (Value < QL)		
2,4-Dinitrotoluene	<	3.2	0.05	No (Value < QL)		
2,6-Dinitrotoluene	<	3.2	0.05	No (Value < QL)		
1,4-Dioxane	<	3.2	N/A	No		
Di-n-Octyl Phthalate	<	3.2	N/A	No		
1,2-Diphenylhydrazine	<	3.2	0.036	No (Value < QL)		
Fluoranthene	<	1.6	40	No (Value < QL)		
Fluorene	<	1.6	1100	No (Value < QL)		
Hexachlorobenzene	<	3.2	0.00028	No (Value < QL)		
Hexachlorobutadiene	<	0.2	0.44	No (Value < QL)		
Hexachlorocyclopentadiene	<	3.2	1	No (Value < QL)		
Hexachloroethane	<	3.2	1.4	No (Value < QL)		
Indeno(1,2,3-cd)Pyrene	<	1.6	0.0038	No (Value < QL)		
Isophorone	<	3.2	35	No (Value < QL)		
Naphthalene		0.13	43	No		
Nitrobenzene	<	3.2	17	No (Value < QL)		
n-Nitrosodimethylamine	<	3.2	0.00069	No (Value < QL)		
n-Nitrosodi-n-Propylamine	<	3.2	0.005	No (Value < QL)		
n-Nitrosodiphenylamine	<	3.2	3.3	No (Value < QL)		
Phenanthrene	<	1.6	1	No (Value < QL)		
Pyrene	<	1.6	830	No (Value < QL)		
1,2,4-Trichlorobenzene	<	3.2	26	No		

ATTACHMENT C

PENTOXSD Modeling Results

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	24.45	745.40	11410.00	0.00010	0.00	☑

Stream Data

	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary Hard (mg/L)	Tributary pH	Stream Hard (mg/L)	Stream pH	Analysis Hard (mg/L)	Analysis pH
Q7-10	0.1	0	2390	0	1000	12	0	0	82.9	7.63	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
Outfall 001	PA0001406	0.568	0	0	0	0.075	0	0	0	101	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
CADMIUM	1000000	0	0.5	0.5	0	0	0	0	1	0
COPPER	1000000	0	0.5	0.5	0	0	0	0	1	0
LEAD	1000000	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1000000	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	23.20	734.50	11420.00	0.00010	2.50	☑

Stream Data

	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary Hard (mg/L)	Tributary pH	Stream Hard (mg/L)	Stream pH	Analysis Hard (mg/L)	Analysis pH
Q7-10	0.1	0	0	0	1000	12	0	0	82.9	7.63	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
CADMIUM	0	0	0.5	0.5	0	0	0	0	1	0
COPPER	0	0	0.5	0.5	0	0	0	0	1	0
LEAD	0	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

SWP Basin	Stream Code:	Stream Name:
18A	42122	ALLEGHENY RIVER

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 Hydrodynamics											
24.450	2390	0	2390	0.87869	0.0001	12	1000	83.333	0.1992	0.3834	1000+
23.200	2391	3.8675	2387.1	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
24.450	6663.6	0	6663.6	0.87869	0.0001	18.84	1000	53.08	0.3537	0.2159	1000+
23.200	6666.0	3.8675	6662.2	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
24.45	**Outfall 001**	**PA0001406**

AFC

Q7-10: **CCT (min)** 15 **PMF** 0.075 **Analysis pH** 7.623 **Analysis Hardness** 82.988

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
CADMIUM	0	0	0	0	1.68	1.765	361.781
	Dissolved WQC. Chemical translator of 0.952 applied.						
COPPER	0	0	0	0	11.274	11.743	2407.361
	Dissolved WQC. Chemical translator of 0.96 applied.						
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA
LEAD	0	0	0	0	52.685	64.393	13200.27
	Dissolved WQC. Chemical translator of 0.818 applied.						

CFC

Q7-10: **CCT (min)** 720 **PMF** 0.467 **Analysis pH** 7.628 **Analysis Hardness** 82.914

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
CADMIUM	0	0	0	0	0.216	0.236	299.727
	Dissolved WQC. Chemical translator of 0.917 applied.						
COPPER	0	0	0	0	7.631	7.949	10114.58
	Dissolved WQC. Chemical translator of 0.96 applied.						
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA
LEAD	0	0	0	0	2.051	2.506	3189.392
	Dissolved WQC. Chemical translator of 0.818 applied.						

THH

Q7-10: **CCT (min)** 720 **PMF** NA **Analysis pH** NA **Analysis Hardness** NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
CADMIUM	0	0	0	0	NA	NA	NA
COPPER	0	0	0	0	NA	NA	NA
PHENOLICS (PWS)	0	0	0	0	5	5	13610.39
	CCT based on PWS at RMI 23.2.WQC applied at RMI 23.2 with a design stream flow of 2391.						
LEAD	0	0	0	0	NA	NA	NA

CRL

Qh: **CCT (min)** 720 **PMF** 0.655

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
24.45	**Outfall 001**	**PA0001406**

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
CADMIUM	0	0	0	0	NA	NA	NA
COPPER	0	0	0	0	NA	NA	NA
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA
LEAD	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
18A	42122	ALLEGHENY RIVER

RMI	Name	Permit Number	Disc Flow (mgd)
24.45	Outfall 001	PA0001406	0.5680

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
CADMIUM	231.887	AFC	361.781	231.887	AFC
COPPER	1543.021	AFC	2407.361	1543.021	AFC
LEAD	3189.392	CFC	4975.964	3189.392	CFC
PHENOLICS (PWS)	13610.39	THH	21234.39	13610.39	THH

ATTACHMENT D

EPA 2015 Multi-Sector General Permit Benchmark Values

available acute ambient water quality criteria for priority toxic and non-priority pollutants in saltwater. These benchmark values reflect the toxicity of these metals in saline waters and replace the freshwater-based benchmark values in the 2008 permit. In some cases, the saltwater values represent significant changes in the benchmarks for facilities discharging into saline waters. The values for arsenic, copper, cyanide, and nickel are lowered by an order of magnitude. The values for cadmium and lead are increased by an order of magnitude, while the value for selenium is increased two orders of magnitude. Benchmark values for the other metals increase (mercury) or decrease (silver, and zinc) by smaller amounts.

The following table presents the permit's freshwater and saltwater benchmark values, and the source of those values. In most cases, EPA has not revised benchmarks since they were first published in the 1995 MSGP. However, eight of the ten benchmarks that were assigned the freshwater acute water quality criterion value as differentiated from the 2000 MSGP's value that was based on the method detection limit (MDL) (i.e., arsenic, cadmium, copper, cyanide, mercury, nickel, selenium, and silver) were lowered in the 2008 MSGP based on CWA section 302(a) EPA-recommended criteria. Excluding mercury and nickel, the benchmark values were changed from 3.18 times the MDL to the ambient acute water quality criteria value. Mercury and nickel benchmarks were revised based on EPA's updated acute aquatic life recommended criteria. In each case, at least one EPA-approved 40 CFR Part 136 analytical method exists with detection limits below these benchmark values.

MSGP Benchmark Values and Sources			
Pollutant	**MSGP Benchmark**	**MSGP Source**	**Different**
Aluminum (T) (pH 6.5 - 9)	00.75 mg/L	1	No
Beryllium (T)	0.13 mg/L	2	No
Iron (T)	1.0 mg/L	3	No
Biochemical Oxygen Demand (5 day)	30 mg/L	4	No
pH	6.0 – 9.0 s.u.	4	No
Chemical Oxygen Demand	120 mg/L	5	No
Total Phosphorus	2.0 mg/L	6	No
Total Suspended Solids	100 mg/L	7	No
Nitrate + Nitrite Nitrogen	0.68 mg/L	7	No
Magnesium (T)	0.064 mg/L	8	No
Turbidity	50 NTU	9	Yes
Antimony (T)	0.64 mg/L	12	No
Ammonia*	2.14 mg/L	13	No
Cadmium (T) Freshwater)† (Saltwater)	0.0021 mg/L 0.04 mg/L	1 14	Yes
Copper (T)* (Freshwater)† (Saltwater)	0.014 mg/L 0.0048 mg/L	1 14	Yes NA

MSGP Benchmark Values and Sources			
Pollutant	**MSGP Benchmark**	**MSGP Source**	**Different**
Cyanide (Freshwater) (Saltwater)	0.022 mg/L 0.001 mg/L	1 14	Yes
Mercury (T) (Freshwater) (Saltwater)	0.0014 mg/L 0.0018 mg/L	1 14	No; criteria updated^
Nickel (T) (Freshwater)† (Saltwater)	0.47 mg/L 0.074 mg/L	1 14	No; criteria updated^
Selenium (T)* (Freshwater) (Saltwater)	0.005 mg/L 0.29 mg/L	3 14	Yes
Silver (T)* (Freshwater)† (Saltwater)	0.0038 mg/L 0.0019 mg/L	1 14	Yes
Zinc (T) (Freshwater)† (Saltwater)	0.12 mg/L 0.09 mg/L	1 14	No; criteria updated^
Arsenic (T) (Freshwater) (Saltwater)	0.15 mg/L 0.069 mg/L	3 14	Yes NA
Lead (T)* Freshwater)† (Saltwater)	0.082 mg/L 0.21 mg/L	3 14	No

(T) Total recoverable

* New criteria are currently under development, but values are based on existing criteria.

† These pollutants are dependent on water hardness where discharged into freshwaters. The freshwater benchmark value listed is based on a hardness of 100 mg/L. When a facility analyzes receiving water samples for hardness, the permittee must use the hardness ranges provided in Table 1 in Appendix J of the 2015 MSGP and in the appropriate tables in Part 8 of the 2015 MSGP to determine applicable benchmark values for that facility. Benchmark values for discharges of these pollutants into saline waters are not dependent on receiving water hardness and do not need to be adjusted.

^ The values for these pollutants do not have a new basis. They are still based on the water quality criteria, but the "National Recommended Water Quality Criteria" was updated in 2002.

Sources:

1. "National Recommended Water Quality Criteria." Acute Aquatic Life Freshwater (EPA-822-F-04-010 2006-CMC)
2. "EPA Recommended Ambient Water Quality Criteria for Beryllium." LOEL Acute Freshwater (EPA-440-5-80-024 October 1980)
3. "National Recommended Water Quality Criteria." Chronic Aquatic Life Freshwater (EPA-822-F-04-010 2006-CCC)
4. Secondary Treatment Regulations (40 CFR 133)
5. Factor of 4 times BOD5 (5 day biochemical oxygen demand) concentration - North Carolina Benchmark
6. North Carolina stormwater Benchmark derived from NC Water Quality Standards
7. National Urban Runoff Program (NURP) median concentration
8. Minimum Level (ML) based upon highest Method Detection Limit (MDL) times a factor of 3.18

ATTACHMENT E

USGS 03049500
Water Year Report 2018

USGS Water-Year Summary 2018

03049500 ALLEGHENY RIVER AT NATRONA, PA

LOCATION - Lat 40°36'55", long 79°43'07" referenced to North American Datum of 1927, Allegheny County, PA, Hydrologic Unit 05010009, on right bank 520 ft upstream from dam at lock 4 at Natrona, 5.8 mi downstream from Kiskiminetas River, at river mile 24.3.

DRAINAGE AREA - 11,410 mi².

REVISIONS HISTORY - WSP 1435: 1939.

SURFACE-WATER RECORDS

PERIOD OF RECORD - October 1938 to current year.

GAGE - Water-stage recorder and concrete dam control. Datum of gage is 736.36 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Apr 15, 1940 to Oct 22, 1990, water-stage recorder at same site at datum 0.75 ft higher. Prior to Apr 14, 1940, non-recording gage. Satellite telemetry at station.

COOPERATION - Station established and maintained by the U.S. Geological Survey. Funding for the operation of this station is provided by the U.S. Army Corps of Engineers, Pittsburgh District, the Pennsylvania Department of Environmental Protection, and the U.S. Geological Survey.

REMARKS - Sharp rises and drops in discharge during periods of low flow are caused by hydroelectric power production upstream. Flow regulated since 1924 by Piney Reservoir, since May 1940 by Crooked Creek Lake, since December 1940 by Tionesta Lake (station 03019500), since June 1941 by Mahoning Creek Lake (station 03035500), since June 1942 by Loyalhanna Lake (station 03046500), since November 1949 by Chautauqua Lake, since November 1951 by Conemaugh River Lake, since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), since January 1974 by Woodcock Creek Lake (station 03022550). Records for water year 2014 are good except those for estimated daily discharges, which are poor. Records for water year 2015 are good except those for estimated daily discharges, which are poor. Records for water year 2016 are good except those for estimated daily discharges, which are poor. Records for water year 2017 are fair except those for estimated discharges, which are poor. Records for water year 2018 are good; no estimated daily discharges

EXTREMES OUTSIDE PERIOD OF RECORD - Flood of Mar 18, 1936 reached a stage of 32.06 ft, discharge, 365,000 ft³/s, determined by U.S. Army Corps of Engineers.

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation: U.S. Geological Survey, 2019, National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed [November 18, 2019], https://nwis.waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=&120010&adr_begin_date=2017-10-01&adr_end_date=2018-09-30&site_no=03049500&agency_cd=USGS

Water-Data Report 2018
03049500 ALLEGHENY RIVER AT NATRONA, PA -- Continued

DISCHARGE, CUBIC FEET PER SECOND
YEAR 2017-10-01 to 2018-09-30
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
	2017	2017	2017	2018	2018	2018	2018	2018	2018	2018
1	3,960	15,600	15,400	13,200	32,000	71,300	54,000	17,600	12,700	14,600
2	4,910	20,200	14,100	13,100	28,200	99,900	48,900	16,500	18,600	12,300
3	4,920	30,200	12,700	10,400	23,600	92,100	47,100	14,800	17,100	13,900
4	4,850	34,000	12,200	9,330	20,800	72,300	62,500	15,200	19,700	16,800
5	4,880	33,400	12,500	9,000	18,900	62,100	67,400	17,900	19,700	19,200
6	4,930	51,700	13,400	7,380	17,200	54,400	62,800	19,500	16,200	22,600
7	5,140	62,200	14,800	5,890	16,700	48,000	59,000	19,900	14,500	22,600
8	5,830	46,700	14,400	6,060	15,800	43,000	54,100	20,800	12,500	18,000
9	6,350	38,600	15,000	7,590	14,800	38,700	47,700	18,600	10,500	13,300
10	7,160	40,400	12,800	8,570	16,700	34,300	45,700	12,800	10,600	10,900
11	6,860	39,600	10,900	9,470	18,100	29,500	39,500	14,200	14,000	8,960
12	6,730	35,900	11,200	46,600	27,100	26,600	33,500	14,000	15,100	7,800
13	7,330	32,200	10,600	135,000	34,100	23,600	29,600	29,000	14,700	7,050
14	8,500	29,900	9,790	80,800	33,800	21,400	25,200	54,000	16,800	6,160
15	8,160	25,800	8,330	51,700	41,800	18,600	21,300	55,700	14,300	5,480
16	7,590	21,900	8,610	51,800	79,300	16,600	30,600	58,000	13,100	5,370
17	6,520	19,200	7,690	53,600	81,400	15,400	56,000	53,200	10,900	6,620
18	6,810	21,600	8,860	56,500	73,300	13,200	54,700	46,900	9,440	7,270
19	6,160	46,800	9,550	52,800	75,400	13,000	56,400	41,200	13,400	9,240
20	5,550	60,900	10,700	48,800	88,400	13,600	63,300	35,900	19,100	8,550
21	5,510	46,500	14,700	46,100	89,100	14,100	57,100	37,100	21,100	6,620
22	5,260	48,700	16,500	45,000	86,400	13,300	50,200	35,600	26,100	6,010
23	5,140	45,400	16,900	54,400	83,400	12,800	42,500	31,100	24,400	5,910
24	6,400	42,000	23,600	69,900	64,000	12,800	37,600	28,900	24,600	6,070
25	6,410	37,700	35,400	55,900	75,100	11,700	34,700	25,500	25,900	7,770
26	6,600	32,700	32,400	45,100	81,500	11,400	31,900	21,200	22,900	8,800
27	6,300	29,200	25,700	40,200	78,600	12,500	27,800	17,400	17,300	9,910
28	6,150	25,800	22,600	41,700	76,500	17,100	23,800	15,900	18,200	12,600
29	8,000	23,500	21,500	43,300		27,000	21,400	15,800	21,100	11,600
30	12,100	19,000	18,400	40,900		38,600	20,400	14,800	19,000	9,970
31	17,200		15,800	36,900		52,600		12,900		8,350
Total	208,200	1,057,000	477,000	1,197,000	1,392,000	1,032,000	1,307,000	831,900	513,499	330,300
Mean	6,716	35,240	15,390	38,610	49,710	33,270	43,560	26,830	17,120	10,660
Max	17200	62200	35400	135000	89100	99900	67400	58000	26100	22600
Min	3960	15600	7690	5890	14800	11400	20400	12800	9440	5370
Ac-ft	413,000	2,097,000	946,200	2,374,000	2,761,000	2,046,000	2,592,000	1,650,000	1,019,000	655,200

Day	Aug	Sep
	2018	2018
1	12,000	8,290
2	12,800	7,550
3	13,500	7,350
4	12,300	6,750
5	9,590	6,440
6	7,280	5,990
7	6,900	6,080
8	6,160	5,990
9	5,360	19,200
10	5,520	66,000
11	6,090	65,500
12	5,470	56,800
13	5,250	57,100
14	5,450	60,100
15	5,720	55,500
16	6,720	47,600
17	6,130	40,900
18	6,290	47,600
19	6,250	45,200
20	6,510	32,600
21	7,650	26,000
22	13,300	23,500
23	20,400	21,000
24	15,800	19,500
25	15,400	19,900
26	13,500	25,900
27	10,900	36,800
28	9,350	44,400
29	8,160	42,900
30	9,240	37,800
31	8,260	
Total	283,300	946,200
Mean	9,137	31,540
Max	20400	66000
Min	5250	5990
Ac-ft	561,800	1,877,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2018, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	10,070	17,020	25,090	25,729	26,970	37,650	34,640	22,860	14,820	9,543	7,146	7,850
Max	37,840	45,220	48,690	68,600	53,390	87,030	83,780	48,400	45,820	34,630	23,020	47,470
(WY)	(2007)	(1986)	(1978)	(1952)	(1976)	(1945)	(1940)	(1943)	(1989)	(1972)	(1956)	(2004)
Min	1,227	2,686	2,316	4,520	7,167	10,410	9,000	6,129	3,759	1,944	1,786	1,444
(WY)	(1964)	(1954)	(1961)	(1961)	(1963)	(1969)	(1946)	(1941)	(1991)	(1966)	(1962)	(1939)

Water-Data Report 2018
03049500 ALLEGHENY RIVER AT NATRONA, PA — Continued

SUMMARY STATISTICS

	Water Year 2018		Water Years 1939 - 2018	
Annual total	9,575,000			
Annual mean	26,230		19,910	
Highest annual mean			30,090	2004
Lowest annual mean			12,680	1999
Highest daily mean	135,000	Jan 13	206,000	Dec 31, 1942
Lowest daily mean	3,960	Oct 01	949.0	Oct 26, 1963
Annual 7-day minimum	4,799	Oct 01	1,032	Oct 25, 1963
Maximum peak flow			238,000[a]	Dec 30, 1942
Maximum peak stage			27.46	Dec 30, 1942
Annual runoff (cfsm)	2.30		1.75	
Annual runoff (inches)	31.2		23.7	
10 percent exceeds	56,440		45,200	
50 percent exceeds	18,200		13,600	
90 percent exceeds	6,296		3,530	

[a] Discharge affected by Regulation or Diversion