pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0035777**
Facility Type	**Industrial**	APS ID	**1026262**
Major / Minor	**Minor**	Authorization ID	**1332242**

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

Applicant and Facility Information

Applicant Name	**Hoeganaes Corporation**	Facility Name	**Hoeganaes Corporation**
Applicant Address	4330 Paradise Road	Facility Address	4330 Paradise Road
	Watsontown, PA 17777-8802		Watsontown, PA 17777-8802
Applicant Contact	Tyler Owlett	Facility Contact	Tyler Owlett
Applicant Phone	(570) 538-6146	Facility Phone	(570) 538-6146
Client ID	64029	Site ID	3769
SIC Code	3399	Municipality	Delaware Township
SIC Description	Manufacturing - Primary Metal Products, Nec	County	Northumberland
Date Application Received	October 22, 2020	EPA Waived?	Yes
Date Application Accepted	November 4, 2020	If No, Reason	
Purpose of Application	Application for the renewal of the existing individual NPDES permit.		

Summary of Review

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		*Jonathan P. Peterman* Jonathan P. Peterman / Project Manager	September 10, 2021
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	September 15, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.011
Latitude	41º 3' 36.78"	Longitude	-76º 49' 58.07"
Quad Name	Milton	Quad Code	1031
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Muddy Run (WWF)	Stream Code	19126
NHD Com ID	66918969	RMI	1.73
Drainage Area	1.08	Yield (cfs/mi^2)	0.2231
Q_{7-10} Flow (cfs)	0.24	Q_{7-10} Basis	Gage No. 01553130
Elevation (ft)	495	Slope (ft/ft)	0.03
Watershed No.	10-D	Chapter 93 Class.	WWF
Existing Use	WWF	Existing Use Qualifier	N/A
Exceptions to Use	None.	Exceptions to Criteria	None.
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status	Final, 06/19/2012	Name	Muddy Run Watershed TMDL
Nearest Downstream Public Water Supply Intake	PA American White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	4.5

Changes Since Last Permit Issuance: A comparative stream analysis was conducted using a comparative stream gage (01553130) based on basin characteristics. The updated Q_{7-10} data was obtained from the updated stream gage information obtained from *Stuckey, M.H., and Roland, M.A., 2011, Selected Streamflow Statistics for Streamgage Locations In and Near Pennsylvania*. The Q_{7-10} calculations, which are attached in Appendix A, indicate that the Q_{7-10} is 0.24 cfs.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.0085
Latitude	41º 3' 36.78"	Longitude	-76º 49' 58.07"
Quad Name	Milton	Quad Code	1031
Wastewater Description:	Noncontact Cooling Water (NCCW)		
Receiving Waters	Unnamed Tributary to Muddy Run (WWF)	Stream Code	19126
NHD Com ID	66918969	RMI	1.73
Drainage Area	1.08	Yield (cfs/mi^2)	0.2231
Q_{7-10} Flow (cfs)	0.24	Q_{7-10} Basis	Gage No. 01553130
Elevation (ft)	495	Slope (ft/ft)	0.03
Watershed No.	10-D	Chapter 93 Class.	WWF
Existing Use	WWF	Existing Use Qualifier	N/A
Exceptions to Use	None.	Exceptions to Criteria	None.
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status	Final, 06/19/2012	Name	Muddy Run Watershed TMDL
Nearest Downstream Public Water Supply Intake	PA American White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	4.5

Changes Since Last Permit Issuance: None.
Other Comments: Outfall 002 is a combined outfall that has a discharge of both NCCW and Stormwater that cannot be sampled separately.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.009
Latitude	41º 3' 19.34"	Longitude	-76º 50' 13.03"
Quad Name	Milton	Quad Code	1031
Wastewater Description:	Noncontact Cooling Water (NCCW)		
Receiving Waters	Unnamed Tributary of Muddy Run (WWF)	Stream Code	19126
NHD Com ID	66918971	RMI	N/A
Drainage Area	N/A	Yield (cfs/mi^2)	N/A
Q_{7-10} Flow (cfs)	N/A	Q_{7-10} Basis	N/A
Elevation (ft)	N/A	Slope (ft/ft)	N/A
Watershed No.	10-D	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	WWF	Exceptions to Criteria	None.
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status	Final, 06/19/2012	Name	Muddy Run Watershed TMDL
Nearest Downstream Public Water Supply Intake	PA American White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	4.5

Changes Since Last Permit Issuance: None
Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	41º 3' 37.39"	Longitude	-76º 50' 0.69"
Quad Name	Milton	Quad Code	1031
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Muddy Run (WWF, MF)	Stream Code	
NHD Com ID	66918969	RMI	1.7000
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	10-D	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status	Final, 06/19/2012	Name	Muddy Run Watershed TMDL
Nearest Downstream Public Water Supply Intake	PA American White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	4.5

Changes Since Last Permit Issuance: None.
Other Comments: None.

Treatment Facility Summary				
Treatment Facility Name: Hoeganaes Corp				
WQM Permit No.	**Issuance Date**			
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Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Secondary With Ammonia Reduction	Extended Aeration	Hypochlorite	0.011
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
a0.011	N/A	Not Overloaded	Aerobic Digestion	Other WWTP

Treatment System Components for Outfall 001:
- One (1) Influent wet well.
- One (1) Comminuter with manual bar screen.
- One (1) Aeration tank
- One (1) Clarifier.
- One (1) Erosion chlorinator.
- One (1) Chlorine contact tank.
- One (1) Outfall 001.
- One (1) Sludge Holding.

- One (1) Outfall 002. (NCCW and Stormwater)
  -Oil/Water Separator.
- One (1) Outfall 003. (Emergency NCCW and Stormwater)
- One (1) Outfall 004. (Stormwater only)

Changes Since Last Permit Issuance: None.
Other Comments: None.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

TMDL Impairment

The Departments Geographical Information System indicates that there is an associated TMDL for this segment of UNT to Muddy Run. The Muddy Run Watershed TMDL indicates that UNT to Muddy Run is impaired for siltation due to agricultural activities. Given that the source of the impairment is identified and it is anticipated that the effluent will not contribute to the impairment or create an in-stream excursion above water quality standards, no TMDL related limits will be applied.

Chesapeake Bay Requirements

Outfall 001
Since this facility's annual average design flow is 0.011 MGD, the permittee will be required to monitor and report TN and TP throughout the permit term at a frequency no less than annually in accordance with the Phase II WIP Chesapeake Bay Strategy for Phase V facilities (0.002 MGD to 0.2 MGD) unless 1) the facility has already conducted at least two years of nutrient monitoring and 2) a summary of the monitoring results are included in the next permit's fact sheet. The previous permit contained the results from the Chesapeake Bay Monitoring requirements and removed the monitoring requirements. The summarized results for this monitoring are contained below and the full data set is contained in Appendix D. Since the permittee conducted this monitoring in the previous permit term and the data is summarized in the fact sheet below, the conditions have been met and Chesapeake Bay monitoring will not be required.

Outfalls 002 and 003
These industrial outfalls are classified as a "non-significant" IW given that the gross effluent discharges do not exceed 75 lbs/day of TN or 25 lbs/day of TP. The permittee will be not be required to monitor and report TN and TP at outfalls 002 and 003 throughout the permit term in accordance with the Phase II WIP Chesapeake Bay Strategy for non-significant industrial waste facilities. Non-significant IW dischargers should receive monitoring requirements in permits if there is any possibility of a net increase in nutrients as a result of outfalls 002 and 003, and monitoring frequencies should be established using the general guidance in the Phase II WIP Supplement. It was determined that there is no potential that the associated facility processes could create a net increase in TP.

Outfall 004
This stormwater outfall will also not be considered a contributor of TN and TP.

Existing Effluent Limitations and Monitoring Requirements

Outfall 001 - Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Annual Average	Total Annual	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report Avg Mo	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	5/week	Grab

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Annual Average	Total Annual	Minimum	Average Monthly		Instant. Maximum		
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Total Suspended Solids	XXX	5.5077 Daily Max	XXX	30	XXX	60	2/month	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab

The existing effluent limits for Outfall 001 were based on a design flow of 0.011 MGD.

Outfall 002 - Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

The existing effluent limits for Outfall 002 were based on a design flow of 0.0085 MGD.

Outfall 003 - Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

The existing effluent limits for Outfall 003 were based on a design flow of 0.009 MGD.

Outfall 004 - Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.011
Latitude 41° 3’ 35.70” **Longitude** 76° 49’ 58.20”
Wastewater Description: Sewage

Outfall No. 002 **Design Flow (MGD)** 0.0085
Latitude 41° 3’ 35.70” **Longitude** 76° 49’ 58.20”

Wastewater Description: NCCW and Stormwater

IMP No.	201	**Design Flow (MGD)**	0.0085
Latitude	41° 3' 35.70"	**Longitude**	76° 49' 58.20"
Wastewater Description:	NCCW		

Outfall No.	003	**Design Flow (MGD)**	0.009
Latitude	41° 3' 25.30"	**Longitude**	76° 50' 10.50"
Wastewater Description:	Stormwater and Emergency NCCW		

IMP No.	301	**Design Flow (MGD)**	0.009
Latitude	41° 3' 25.30"	**Longitude**	76° 50' 10.50"
Wastewater Description:	Emergency NCCW		

Outfall No.	004	**Design Flow (MGD)**	N/A
Latitude	41° 3' 29"	**Longitude**	76° 50' 5"
Wastewater Description:	Stormwater		

Technology-Based Limitations

The following effluent standards for industrial waste will apply, subject to water quality analysis and BPJ where applicable:

Sewage:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Industrial Waste:

Parameter	Limit (mg/l) (Average Monthly)	Limit (mg/l) (Daily Maximum)	Limit (mg/l) (Inst. Maximum)	Federal Regulation	State Regulation
Oil & Grease	15	-	30	-	§95.2(2)(ii)
pH	6-9 at all times	-		§133.102(c)	§95.2

There are no applicable technology-based effluent limitations for non-contact cooling water. However, 25 Pa. Code § 95.2 does set forth effluent standards for pH, dissolved iron, and oil and grease for discharges of industrial wastewater. The characteristics of the blowdown do not show a potential to negatively impact the receiving surface water.

Water Quality-Based Limitations

To establish whether or not water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. In order to determine limitations for CBOD5, ammonia-N and dissolved oxygen, the Department utilizes the WQM 7.0 v1.0b model and in order to determine limitations for toxics, the Department utilizes the Toxics Management Spreadsheet. The Toxics Management Spreadsheet was not utilized in this review.

WQM 7.0 for Windows, Version 1.0b, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen
The previous model was run using the latest information on Q7-10 stream flow, background water quality, average annual design flow, and other discharge characteristics. There have been no changes to the watershed or discharge characteristics, therefore the previous modeling is still valid. The existing technology based effluent limit for $CBOD_5$ (25 mg/l) was used as inputs for the modeling as well as the existing water-quality based effluent limit for NH3-N (20 mg/l). The DO minimum daily average criterion from §93.7 (5.0 mg/L for WWF) was used for the in-stream objective for the model. The summary of the output is as follows:

Parameter	Effluent Limit		
	30 Day Average	Maximum	Minimum
CBOD5	25	N/A	N/A
Ammonia-N	20	40	N/A
Dissolved Oxygen	N/A	N/A	3

The previous model did not recommend more stringent water-quality based effluent limitations with regards to CBOD5, ammonia-nitrogen, and dissolved oxygen. Refer to Appendix B for the WQM 7.0 inputs and results. The existing limits will remain.

Toxics Management Spreadsheet
This model is a single discharge wasteload allocation program for toxics that uses a mass-balance water quality analysis to determine recommended water quality-based effluent limits. The model incorporates consideration for mixing, first-order decay and other factors to computes a Wasteload Allocation (WLA) for each applicable criterion. Finally, the model determines a maximum water quality-based effluent limitation (WQBEL) for each parameter and outputs the more stringent of the WQBEL or the input concentration. The output of which is the recommends average monthly and maximum daily effluent limitations.

Sampling for pollutant Groups was submitted with the application. This sampling information and the receiving stream information was entered into the Toxics Management Spreadsheet. The modeling results indicated that no limits or monitoring requirements are needed for these parameters. Refer to Appendix B for the Toxics Management Spreadsheet.

Comments: None.

Best Professional Judgement (BPJ) Limitations
Comments: All parameters have been implemented using BPJ.
Additional Considerations
None.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst the abovementioned technology, water quality, and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

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

Outfall 001 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Annual Average	Total Annual	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report Avg Mo	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Total Suspended Solids	XXX	5.5077 Daily Max	XXX	30	XXX	60	2/month	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	20	XXX	40	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	1/month	Grab
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

The proposed effluent limits for Outfall 001 were based on a design flow of 0.011 MGD.

Outfall 002 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

The proposed effluent limits for Outfall 002 were based on a design flow of 0.0085 MGD for NCCW and no design flow for stormwater.

IMP 201 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Weekly when Discharging (3)	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Weekly when Discharging (3)	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	110	XXX	Weekly when Discharging (3)	I-S
Oil and Grease	XXX	XXX	XXX	15	XXX	30	Weekly when Discharging (3)	Grab

The proposed effluent limits for Outfall 002 were based on a design flow of 0.0085 MGD for NCCW.

Outfall 003 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

The proposed effluent limits for Outfall 003 were based on a design flow of 0.009 MGD for emergency NCCW and no design flow for stormwater.

IMP 301 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Weekly when Discharging (3)	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Weekly when Discharging (3)	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	110	XXX	Weekly when Discharging (3)	I-S
Oil and Grease	XXX	XXX	XXX	15	XXX	30	Weekly when Discharging (3)	Grab

The proposed effluent limits for Outfall 003 were based on a design flow of 0.009 MGD for emergency NCCW.

Outfall 004 - Proposed Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

The proposed effluent limits for Outfall 004 were not based on a design flow.

Outfall 001

General Information
All effluent limits were then rounded down in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits. The existing monitoring frequencies and sample types for these parameters generally correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3 and will remain.

Flow
The existing monitoring frequency (1/Day) and sample type (Pump or Weir) for Flow correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The results of the WQM 7.0 model show that the previously applied secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for $CBOD_5$ are protective of water quality and will remain.

Total Suspended Solids (TSS)
The previously applied technology based secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for TSS will remain as well.

pH
CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH and will remain.

Fecal Coliforms
The existing fecal coliform limits with I-max limits were updated from the previous Chapter 92 code to correspond with what is specified in the updated 25 PA Code § 92a.47 (a)(4)&(5).

E. Coli
25 PA Code § 92a.61 provide the basis of monitoring requirements for E. Coli. Quarterly monitoring will be required going forward.

Ammonia-Nitrogen (NH3-N)
The results of the WQM 7.0 model show that the existing water quality based effluent limits for ammonia-nitrogen are appropriate. In order to obtain the winter limits, a seasonal multiplier of three times the summer limit will be applied in

accordance with the *Implementation Guidance for Chapter 93.7 Ammonia Criteria* (391-2000-013). However, since these values would be significantly greater that what is considered to be the conventional influent ammonia-nitrogen concentrations, only monitoring shall be required for the winter months.

Total Residual Chlorine (TRC)
A TRC model evaluation was conducted by using the technology-based effluent limitations recommended as input. (See the Appendix for the spreadsheet results.) In accordance with 25 Pa. Code § 92a.48(b)(2), a value of 0.5 mg/l was used used in the model as BAT. The TRC evaluation reveals that effluent limits of 0.5 mg/L (Average Monthly) and 1.6 mg/L (Instantaneous Maximum) are still adequate.

Dissolved Oxygen (DO)
Given results of the WQM 7.0 model, a discharge of effluent from this facility with a DO concentration of 3 mg/l would not result in an exceedance of water quality requirements for this stream. It is anticipated, based on similar technology, that the DO concentration in the effluent would be greater than 3.0 mg/l. Therefore, based on BPJ, only monitoring will be required for this facility.

Outfalls 002 and 003

General Information
The existing monitoring frequencies and sample types for these parameters correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-4 and will remain.

Temperature
In accordance with the Department's *Implementation Guidance for Temperature Criteria* (391-2000-017), the daily maximum temperature limit will remain. Additionally, the Part C conditions will include special condition C15 – Temperature 2 Degree Hourly Change.

IMPs 201 and 301

Flow
Reporting of maximum daily flow and monthly average is appropriate for this type of facility and consistent with similar facility types.

pH
The existing permit limits for pH were implemented in accordance with 25 PA Code §95.2(1), which provide the basis of effluent limitations for pH, and shall remain.

Oil and Grease
The existing permit limits for oil and grease were implemented in accordance with 25 PA Code §95.2(2)(ii), which provide the basis of effluent limitations for oil and grease.

Outfalls 002, 003, and 004 Stormwater Requirements
Stormwater monitoring requirements shall be implemented as shown below.

Stormwater Requirements

The industrial activities associated with Hoeganaes Corporation's facility are identified in 40 CFR 122.26(b)(14)(ix) and thus the facility required to obtain an NPDES permit to discharge stormwater into waters of the Commonwealth of Pennsylvania. The facility is classified under SIC Codes 3399- Establishments primarily engaged in manufacturing metal products, not elsewhere classified, such as nonferrous nails, brads, and spikes, and metal powder, flakes, and paste. The facility manufactures powered steel products. Appendix B Monitoring Requirements and Best Management Practices (BMPs) are applicable to this facility. These requirements have changed since the previous permit issuance. The following stormwater requirements will be incorporated into this permit:

DISCHARGE PARAMETER	UNITS	SAMPLE TYPE	MEASUREMENT FREQUENCY
Total Suspended Solids	mg/L	1 Grab	1/6 months
Lead (Total)	mg/L	1 Grab	1/6 months
Zinc (Total)	mg/L	1 Grab	1/6 months
Copper (Total)	mg/L	1 Grab	1/6 months
Aluminum (Total)	mg/L	1 Grab	1/6 months
Iron (Total)	mg/L	1 Grab	1/6 months
Effluent Guideline Pollutants[4]	mg/L	1 Grab	1/6 months

Note: There are no associated ELGs for this facility. The other discharge parameters will be applied in part A of the permit for each outfall.

Chemical Additives

Hoeganaes Corp. had previously listed GE Bets, Inc. products in their chemical additive usage sheets. However, the chemical additive sheets were not included in the permit application. The permittee will be required to provide clarification regarding the usage of the chemical additives during the comment period. Part "C" condition C 118 will be placed in the draft permit to address chemical additives.

Compliance History

Summary of Inspections -The last facility inspection was conducted by the Department on 3/31/2020 which reveals that there were no issues and the facility was operating normally.

WMS Query Summary - A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the permit (per CSL Section 609). This query revealed one (1) open violation in the Air Quality Program. This program will be contacted regarding the following open violation:

CLIENT ID	CLIENT	FACILITY	INSP PROGRAM	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
64029	HOEGANAES CORP	HOEGANAES CORP/WATSONTOWN PLT	Air Quality	3230974	925649	08/06/2021	127.444	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements,

[4] Any pollutant limited in an effluent guideline, to which the facility is subject.

								Compliance requirements.

eDMR Summary- Upon conducting a review of the eDMR data below, no effluent exceedances were noted.

Compliance History

DMR Data for Outfall 001 (from July 1, 2020 to June 30, 2021)

Parameter	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20
Flow (MGD) Average Monthly	0.005016	0.004836	0.004955	0.005120	0.005158	0.004938	0.004966	0.004864	0.004774	0.004994	0.004995	0.004650
Flow (MGD) Daily Maximum	0.005713	0.005713	0.005713	0.005716	0.005713	0.005713	0.005713	0.006155	0.005713	0.005713	0.006155	0.005713
pH (S.U.) Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.) Maximum	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
DO (mg/L) Minimum	6.1	6.3	6.6	6.6	6.4	6.4	6.5	6.1	6.5	6.4	6.3	6.2
TRC (mg/L) Average Monthly	0.39	0.43	0.41	0.37	0.39	0.43	0.44	0.37	0.4	0.43	0.4	0.4
TRC (mg/L) Instantaneous Maximum	0.5	0.8	0.7	0.5	0.7	0.9	0.9	0.50	0.7	0.8	0.7	0.5
CBOD5 (mg/L) Average Monthly	2.7	< 2.2	< 2.6	< 2.2	< 2.2	< 2.2	< 2.1	< 2.2	< 2.2	< 2.1	< 2.2	< 2.2
TSS (lbs/day) Daily Maximum	< 0.1389	< 0.1765	< 0.1768	< 0.1957	< 0.1010	< 0.1698	< 0.1698	< 0.1765	< 0.1010	< 0.1836	< 0.1765	< 0.1630
TSS (mg/L) Average Monthly	< 6.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Oil and Grease (mg/L) Average Monthly	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
Oil and Grease (mg/L) Instantaneous Maximum	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Nitrogen (lbs/day) Annual Average							0.07					

Total Nitrogen (lbs/day) Total Annual							0.07					
Total Nitrogen (mg/L) Annual Average							1.7					
Ammonia (mg/L) Average Monthly	0.27	0.42	0.74	0.22	0.64	0.63	0.20	0.23	0.42	0.29	0.21	0.35
Total Phosphorus (lbs/day) Annual Average							0.006					
Total Phosphorus (lbs/day) Total Annual							0.006					
Total Phosphorus (mg/L) Annual Average							0.15					

DMR Data for Outfall 002 (from July 1, 2020 to June 30, 2021)

Parameter	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20
TSS (mg/L) Daily Maximum	5.0						4.0					
Total Arsenic (mg/L) Daily Maximum	< 0.020						< 0.005					
Total Cadmium (mg/L) Daily Maximum	< 0.0010						< 0.003					
Total Chromium (mg/L) Daily Maximum	< 0.0050						< 0.005					
Total Copper (mg/L) Daily Maximum	0.039						< 0.005					
Total Iron (mg/L) Daily Maximum	0.11						0.172					
Total Lead (mg/L) Daily Maximum	< 0.010						< 0.005					

DMR Data for Outfall 003 (from July 1, 2020 to June 30, 2021)

Parameter	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20
TSS (mg/L) Daily Maximum	9.0						8.0					
Total Arsenic (mg/L) Daily Maximum	< 0.020						< 0.005					

Total Cadmium (mg/L) Daily Maximum	< 0.0010						< 0.003					
Total Chromium (mg/L) Daily Maximum	< 0.0050						< 0.005					
Total Copper (mg/L) Daily Maximum	0.023						< 0.005					
Total Iron (mg/L) Daily Maximum	0.056						0.29					
Total Lead (mg/L) Daily Maximum	< 0.010						< 0.005					

DMR Data for Outfall 004 (from July 1, 2020 to June 30, 2021)

Parameter	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20
TSS (mg/L) Daily Maximum	5.0						7.0					
Total Arsenic (mg/L) Daily Maximum	< 0.020						< 0.005					
Total Cadmium (mg/L) Daily Maximum	< 0.0010						< 0.003					
Total Chromium (mg/L) Daily Maximum	< 0.0050						< 0.005					
Total Copper (mg/L) Daily Maximum	0.039						< 0.005					
Total Iron (mg/L) Daily Maximum	0.11						0.113					
Total Lead (mg/L) Daily Maximum	< 0.010						< 0.005					

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☒	Toxics Management Spreadsheet (see Attachment **C**)
☒	TRC Model Spreadsheet (see Attachment **D**)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 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:
☐	Other:

APPENDIX A

STREAM DATA AND Q^{7-10} ANALYSIS

USGS
science for a changing world

Prepared in cooperation with the Pennsylvania Department of Environmental Protection

Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Open-File Report 2011–1070

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

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	[2]1971–2008	38	28.2	109	151	131	172	153
01547500	[3]1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	[2]1971–2000	25	142	151	206	178	241	223
01548005	[3]1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	[2]1963–2008	46	520	578	1,020	678	1,330	919
01551500	[3]1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	[2]1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	[3]1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	[2]1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	[3]1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	[2]1974–2008	35	—	—	—	112	266	129
01563200	[3]1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	[2]1974–2008	35	384	415	519	441	580	493
01563500	[3]1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

Q_{7-10} Analysis

Facility: Hoeganaes Corp.
Outfall: 001, 002, 003

NPDES Permit No.: PA0035777
RMI at Outfall: 1.73

Reference Stream Gage Information	
Stream Name	Sand Spring Run
Reference Gage	1553130
Station Name	Sand Spring Run near White Deer, PA
Gage Drainage Area (sq. mi.)	4.93
Q_{7-10} at gage (cfs)	1.1
Yield Ratio (cfs/mi^2)	0.2231

Was BaSE Used?	
Correlation From Ecoflows	

Check Dilution Ratio		
Discharge at Outfall (wf) (mgd)	0.001	
	sf (cfs)	wf (cfs)
Dilution Ratio = sf/wf	0.2410	0.001547229
Dilution Ratio =	155.745316 to 1	

Q_{7-10} at Outfall	
Drainage Area at site (sq. mi.)	1.08
Q_{7-10} at discharge site (cfs)	0.2410
Q_{7-10} at discharge site (mgd)	0.1557
Low Flow Yield Ratio of 0.1 cfs/mi^2 (For Approx. Comparison Only)	
Q_{7-10} at discharge site (cfs)	0.1080
Q_{7-10} at discharge site (mgd)	0.0698

Q_{7-10} at Downstream Reach #1	
Drainage Area at Reach (sq. mi.)	11.37
RMI	0
Q_{7-10} at reach (cfs)	2.5369
Q_{7-10} at reach (mgd)	1.6397
	Elev. 460'

Q_{7-10} at Downstream Reach #2	
Drainage Area at Reach (sq. mi.)	[Drainage Area @ Reach #2]
RMI	[RMI @ Reach #2]
Q_{7-10} at reach (cfs)	#VALUE!
Q_{7-10} at reach (mgd)	#VALUE!

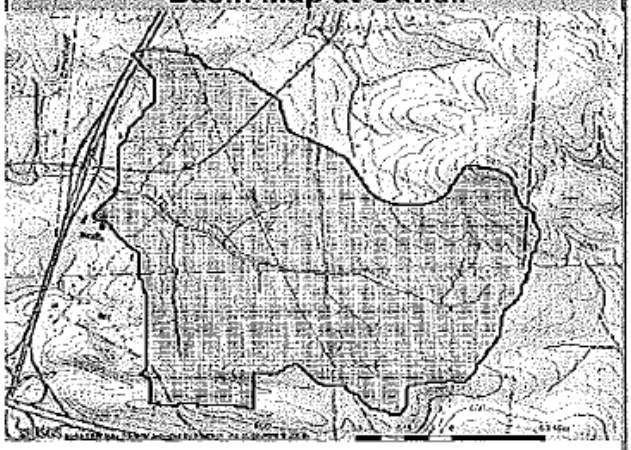
Q_{7-10} at Downstream Reach #3	
Drainage Area at Reach (sq. mi.)	[Drainage Area @ Reach #3]
RMI	[RMI @ Reach #3]
Q_{7-10} at reach (cfs)	#VALUE!
Q_{7-10} at reach (mgd)	#VALUE!

Basin Characteristics Report at Site

Date: Mon Apr 6 2015 08:31:45 Mountain Daylight Time
NAD27 Latitude: 41.0603 (41 03 37)
NAD27 Longitude: -76.8337 (-76 50 01)
NAD83 Latitude: 41.0603 (41 03 37)
NAD83 Longitude: -76.8334 (-76 50 00)

Parameter	Value
Area in square miles	1.08
Mean Basin Elevation in feet	561
Unadjusted basin slope, in degrees	2.88
Adjusted basin slope, in degrees	2.7
Total stream length in miles	1.46
Stream density (miles/square mile)	1.36
Percent of area covered by lakes, ponds, reservoirs and wetlands	0
Percent of area covered by carbonate bedrock	0
Percent of area covered by glacial activity	0
Depth to rock in feet	4.5
Mean annual precipitation in inches	41
Maximum Daily Temperature in degrees F	60
Percent of area covered by forest	11
Percentage of impervious area determined from NLCD 2001 impervious dataset	3
Percent of area covered by urban land according to an enhanced version of NLCD 1992	6
Percentage of urban land cover determined from NLCD 2001 land cover dataset	10
Drainage quality index from STATSGO	3.1
X coordinate of the centroid, in map projection, meters	98981.7
Y coordinate of the centroid, in map projection, meters	229065.2
X coordinate of the outlet, in map projection, meters	98045
Y coordinate of the outlet, in map projection, meters	229415
Longitude of the outlet, in decimal degrees	-76.8334

Basin Map at Outfall



APPENDIX B

WQM 7.0 MODEL INPUT/OUTPUT

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10D	19126	Trib 19126 to Muddy Run	1.730	495.00	1.08	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.24	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hoeganaes Corp	PA0035777	0.0110	0.0110	0.0110	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	20.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10D	19126	Trib 19126 to Muddy Run	0.000	460.00	11.37	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	2.50	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
10D	19126	Trib 19126 to Muddy Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.730	0.24	0.00	0.24	.017	0.00383	.413	6.59	15.94	0.09	1.120	20.33	7.00
Q1-10 Flow												
1.730	0.22	0.00	0.22	.017	0.00383	NA	NA	NA	0.09	1.177	20.36	7.00
Q30-10 Flow												
1.730	0.28	0.00	0.28	.017	0.00383	NA	NA	NA	0.10	1.026	20.28	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.909	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.18	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
10D	19126	Trib 19126 to Muddy Run

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.730	Hoeganaes Corp	9.42	40	9.42	40	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.730	Hoeganaes Corp	1.88	20	1.88	20	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.73	Hoeganaes Corp	25	25	20	20	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
10D	19126	Trib 19126 to Muddy Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.730	0.011	20.331	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.587	0.413	15.938	0.094
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.52	0.427	1.32	0.718
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.896	23.073	Owens	5
Reach Travel Time (days)			
1.120			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.112	3.36	1.22	8.19
0.224	3.20	1.13	8.19
0.336	3.05	1.04	8.19
0.448	2.90	0.96	8.19
0.560	2.76	0.89	8.19
0.672	2.63	0.82	8.19
0.784	2.51	0.75	8.19
0.896	2.39	0.70	8.19
1.008	2.28	0.64	8.19
1.120	2.17	0.59	8.19

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
10D	19126	Trib 19126 to Muddy Run

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.730	Hoeganaes Corp	PA0035777	0.011	CBOD5	25		
				NH3-N	20	40	
				Dissolved Oxygen			3

APPENDIX C

TOXICS MANAGEMENT SPREADSHEET

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Hoeganaes** NPDES Permit No.: **PA0035777** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-Contact Cooling Water**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.009	100	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		0.00005									
	Total Antimony	µg/L		0.0000055									
	Total Arsenic	µg/L		0.0000045									
	Total Barium	µg/L		0.000045									
	Total Beryllium	µg/L		0.00000026									
	Total Boron	µg/L		0.00022									
	Total Cadmium	µg/L		0.00000034									
	Total Chromium (III)	µg/L		0.00000066									
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L		0.00000045									
	Total Copper	µg/L		0.000029									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		0.0000082									
	Dissolved Iron	µg/L		90.8									
	Total Iron	µg/L		0.0003									
	Total Lead	µg/L		0.0000024									
	Total Manganese	µg/L		0.000011									
	Total Mercury	µg/L		0.03									
	Total Nickel	µg/L		0.000021									
	Total Phenols (Phenolics) (PWS)	µg/L		0.000016									
	Total Selenium	µg/L		0.0000038									
	Total Silver	µg/L		0.0000011									
	Total Thallium	µg/L		0.0000033									
	Total Zinc	µg/L		0.000043									
	Total Molybdenum	µg/L		0.000021									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Hoeganaes, NPDES Permit No. PA0035777, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Unnamed Tributary of Muddy Run**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	019126	1.73	495	1.08			Yes
End of Reach 1	019126	0	460	11.37			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.73	0.1	0.24									100	7		
End of Reach 1	0	0.1	2.5												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.73														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Hoeganaes, NPDES Permit No. PA0035777, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 3.218 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	13,678	
Total Antimony	0	0		0	1,100	1,100	20,061	
Total Arsenic	0	0		0	340	340	6,201	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	382,991	
Total Boron	0	0		0	8,100	8,100	147,725	
Total Cadmium	0	0		0	2.014	2.13	38.9	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	32,883	Chem Translator of 0.316 applied
Total Cobalt	0	0		0	95	95.0	1,733	
Total Copper	0	0		0	13.439	14.0	255	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	1,489	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	30.0	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	8,557	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	69.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,185	
Total Zinc	0	0		0	117.180	120	2,185	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 3.218 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	

Total Antimony	0	0		0	220	220	4,012	
Total Arsenic	0	0		0	150	150	2,736	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	74,774	
Total Boron	0	0		0	1,600	1,600	29,180	
Total Cadmium	0	0		0	0.246	0.27	4.94	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	1,572	Chem Translator of 0.86 applied
Total Cobalt	0	0		0	19	19.0	347	
Total Copper	0	0		0	8.956	9.33	170	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	27,356	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	58.0	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	16.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	951	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	91.0	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	237	
Total Zinc	0	0		0	118.139	120	2,185	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 3.218 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	102	
Total Arsenic	0	0		0	10	10.0	182	
Total Barium	0	0		0	2,400	2,400	43,770	
Total Boron	0	0		0	3,100	3,100	56,537	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	5,471	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	18,238	
Total Mercury	0	0		0	0.050	0.05	0.91	
Total Nickel	0	0		0	610	610	11,125	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	4.38	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.869 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Aluminum	8,767	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	102	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	182	µg/L	Discharge Conc ≤ 10% WQBEL

Total Barium	43,770	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	29,180	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	4.94	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	1,572	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	347	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	164	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	5,471	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	27,356	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	58.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	18,238	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.91	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	951	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	91.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	44.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	4.38	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	1,401	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

APPENDIX D

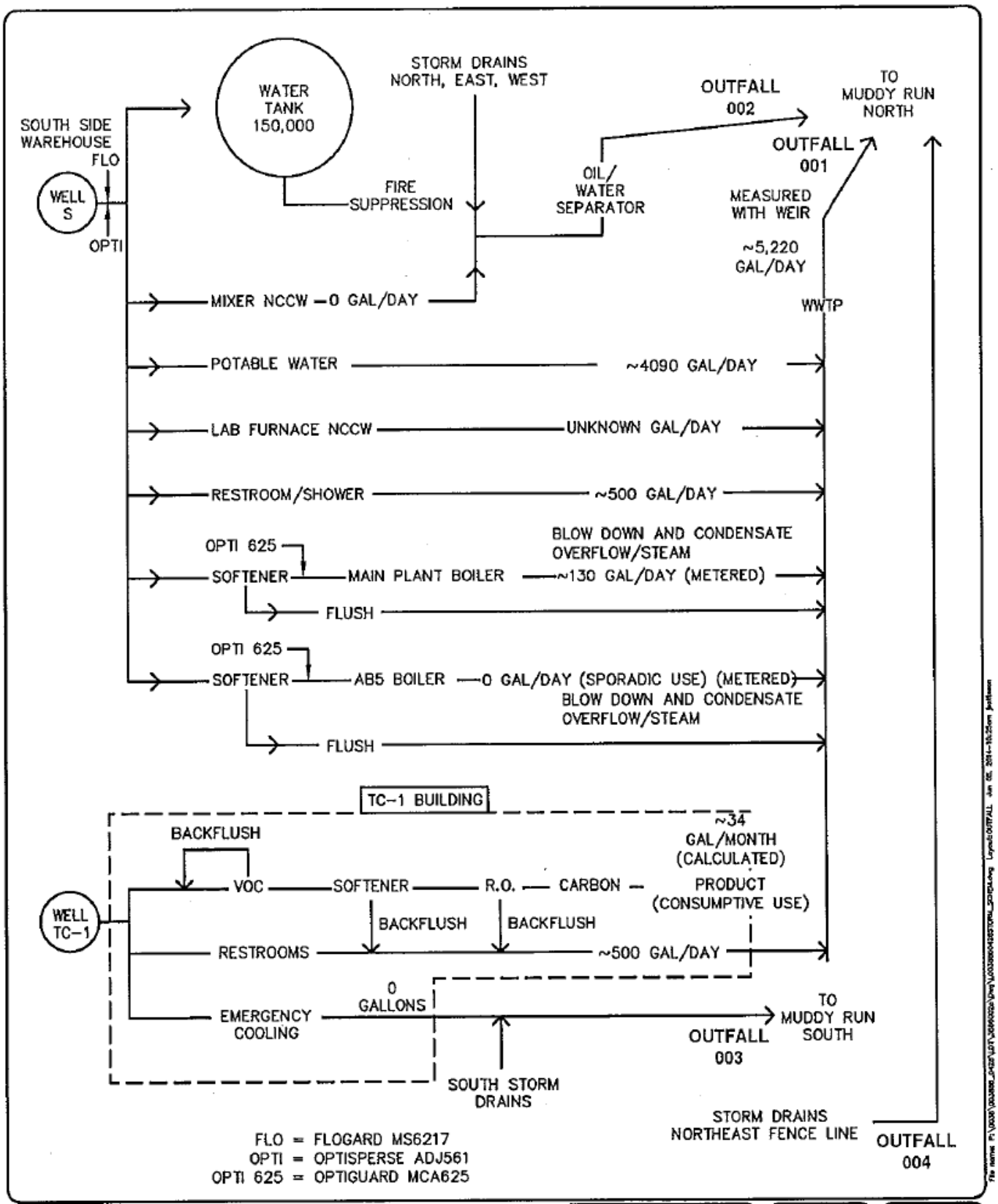
TRC MODEL

1A	B	C	D	E	F	G
2	**TRC EVALUATION**	Hoeganaes PA0035777				
3	Input appropriate values in B4:B8 and E4:E7					
4	0.24	= Q stream (cfs)		0.5	= CV Daily	
5	0.011	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 4.518		1.3.2.iii	WLA cfc = 4.397
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 1.684		5.1d	LTA_cfc = 2.556
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

APPENDIX E

FACILITY MAP AND SCHEMATIC



HRG
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AN EMPLOYEE-OWNED COMPANY

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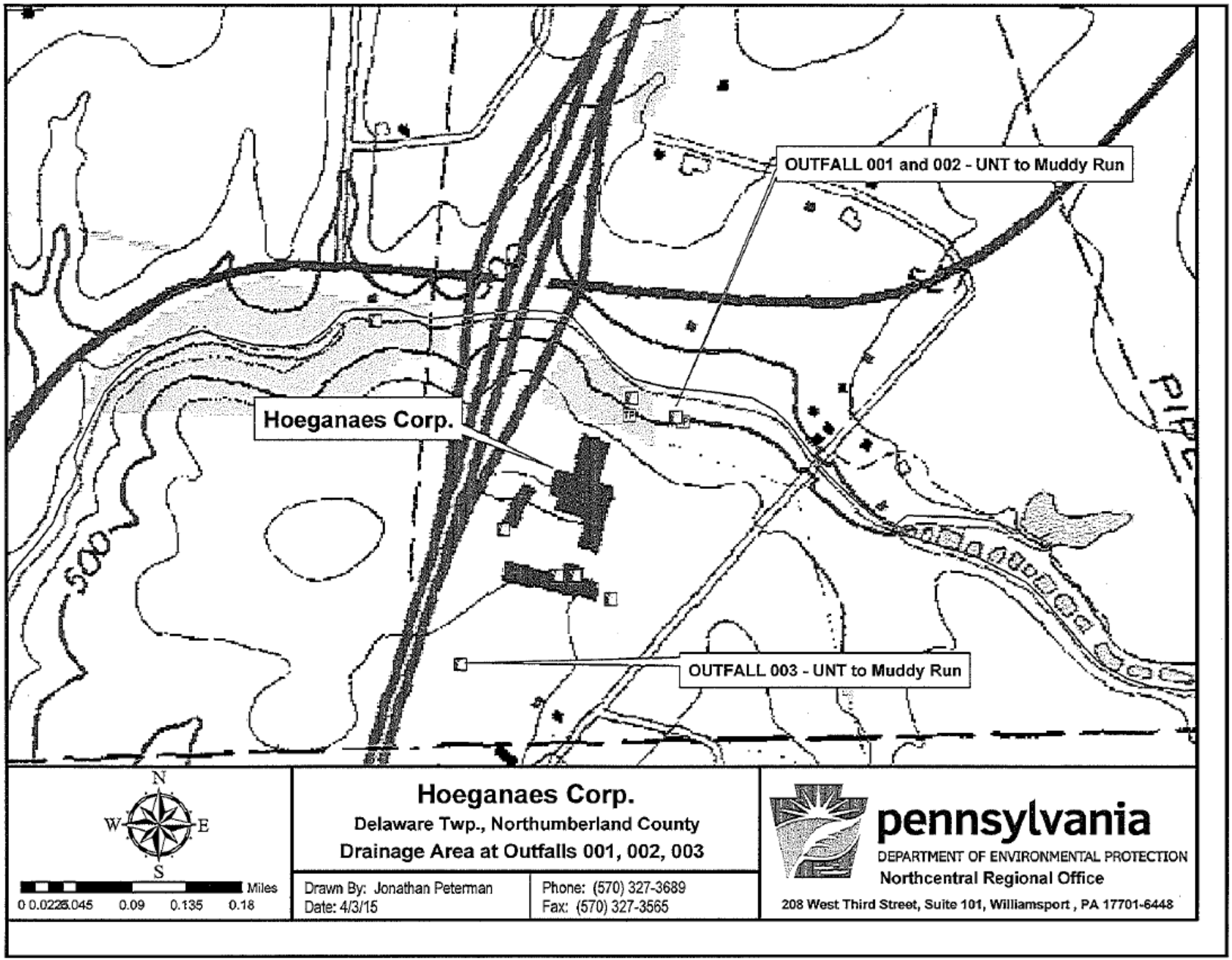
hrg@hrg-inc.com
www.hrg-inc.com

LINE DRAWING AND WATER BALANCE
FOR
HOEGANAES CORPORATION

PROJ. MGR. – JLS	
DESIGN– JLS	
CADD– MRV	
CHECKED– JLS	
SCALE– N.T.S.	
DATE– 6/2/14	

DRAWING NO. 1
SHEET NO. 1 OF 1
PROJECT 3686.0428


OUTFALL 001 and 002 - UNT to Muddy Run
Hoeganaes Corp.
OUTFALL 003 - UNT to Muddy Run
500
N
W
E
S
0 0.0225.045 0.09 0.135 0.18
Miles
Hoeganaes Corp.
Delaware Twp., Northumberland County
Drainage Area at Outfalls 001, 002, 003
Drawn By: Jonathan Peterman
Date: 4/3/15
Phone: (570) 327-3689
Fax: (570) 327-3565
pennsylvania
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