pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

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

Application Type	**Renewal**	Application No.	**PA0004766**
Facility Type	**Industrial**	APS ID	**980134**
Major / Minor	**Minor**	Authorization ID	**1250529**

Applicant and Facility Information

Applicant Name	**Ellwood National Forge Company**	Facility Name	**Ellwood National Forge**
Applicant Address	1 Front Street	Facility Address	1 Front Street
	Irvine, PA 16329-1801		Irvine, PA 16329-1801
Applicant Contact	Dennis Ritter	Facility Contact	
Applicant Phone	(724) 510-3418	Facility Phone	
Client ID	208903	Site ID	614967
SIC Code	3462	Municipality	Brokenstraw Township
SIC Description	Manufacturing - Iron And Steel Forgings	County	Warren
Date Application Received	October 2, 2018	EPA Waived?	Yes
Date Application Accepted	November 9, 2018	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of industrial waste.

Summary of Review

This facility engaged in the manufacture of steel forgings, crankshafts, and various large tubular machine components.

The Stormwater Outfalls were assigned new numbers for this renewal. Two of those outfalls no longer fall under a condition of “No Exposure,” and will be given monitoring requirements.

The permittee proposed a new process wastestream, waterjet machining wastewater, contributing to Outfall 001 as part of this renewal. Water jet machining utilizes a very high-pressure stream of water and an abrasive mixture to cut a multitude of materials in varying thickness. The permittee plans to add a water jet system for cutting mechanical samples out of material from our production pieces for mechanical testing for properties in the plant laboratory. Further discussion regarding this wastestream can be found on Page 2, 6, and 7 of this Fact Sheet.

There is currently one open violation listed in EFACTS listed in EFACTS for this permittee under the NWRO Air Quality Program. There is a plan in place for them to come into compliance.

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.

Approve	Deny	Signatures	Date
X		Adam J. Pesek, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.5514
Latitude	41º 50' 44.3"	Longitude	79º 16' 43.4"
Quad Name	Youngsville	Quad Code	0411
Wastewater Description:	Contact cooling (quench) water, boiler blowdown, softener backwash, steam condensate, non-contact cooling water, suboutfall 101, and stormwater		
Receiving Waters	Brokenstraw Creek	Stream Code	55847
NHD Com ID	112375747	RMI	1.0
Drainage Area	328	Yield (cfs/mi^2)	0.1038
Q_{7-10} Flow (cfs)	34.046	Q_{7-10} Basis	Brokenstraw Creek @ Youngsville Gage
Elevation (ft)	1204	Slope (ft/ft)	0.0015
Watershed No.	16-B	Chapter 93 Class.	CWF
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	

Background/Ambient Data		Data Source
pH (SU)		WQN 831 (2005-2015)(July-Sept)(Geomean)
Temperature (°F)		
Hardness (mg/L)		WQN 831 (2005-2015)(90th %)
Other:		

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. – Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	
PWS RMI	90.0	Distance from Outfall (mi)	78

Changes Since Last Permit Issuance: Wastewater from waterjet machining in the plant laboratory was proposed in this renewal to discharge to Outfall 001. Discharge from this wastestream is expected to be 5 gpm (max) with an average discharge of <2 gpm for approximately 6 hours/day on average. For purposes of determining the additional design flow to Outfall 001 from this wastestream for modeling purposes, the 2 gpm flowrate was converted to a gpd flowrate because flow equalization is not utilized at outfall 001. The resulting flowrate is 0.001388888 gpd rounded to 0.0014 gpd. This will result in a minuscule addition to the overall wasteflow at Outfall 001.

Other Comments: Stormwater Outfalls 002-005 also discharge to Brokenstraw Creek in the vicinity of the main plant grounds.

Treatment Facility Summary

Treatment Facility Name: Ellwood National Forge

WQM Permit No.	Issuance Date
6205201	5/10/2005
6297201 T-1	5/02/2003
6285201 T-1	5/02/2003
6272201 T-1	5/02/2003

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Chemical (Industrial Waste)	Chemical Precipitation	No Disinfection	2.2 (main outfall treatment)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
			Gravity Thickening	Landfill

Other Comments: **WQM Permit No. 6205201**: (2) sequential batch reactors with chemical feed to aid in precipitation of soluble metals, sludge transfer pumps, sludge thickening/holding tank, filter pump wet well, cartridge filter feed pumps and cartridge filters.

WQM Permit No. 6297201 T-1: Constructed wetland w/ a discharge to groundwater.

WQM Permit No. 6285201 T-1: Segmented sludge drying bed and lagoon sludge platform with pump.

WQM Permit No. 6272201 T-1: Oil skimmer, sedimentation lagoons and chlorination.

Compliance History

DMR Data for Outfall 001 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	1.183	1.342	1.252	1.4	1448	1.347	1.2483	1.277	1.502	1.478	1.494	< 1.385
pH (S.U.) Minimum	7.8	7.7	7.8	7.4	7.0	7.4	7.4	7.4	7.6	7.5	7.5	7.5
pH (S.U.) Maximum	8.1	8.2	8.6	7.9	7.0	7.7	7.7	7.6	7.7	7.8	7.7	7.8
Oil and Grease (mg/L) Average Monthly	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	7	7

DMR Data for Outfall 101 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.009	0.009					0.009	0.009	0.009	0.009	0.009	0.009
Flow (MGD) Daily Maximum	0.009	0.009					0.009	0.009	0.009	0.009	0.009	0.009
TSS (lbs/day) Average Monthly	0.5	< 1.0					1.3	1.2	< 1.4	< 0.9	1.4	1.7
TSS (lbs/day) Daily Maximum	0.6	2.0					3.0	2.0	< 3.0	1.0	2.0	4.0
TSS (mg/L) Average Monthly	6.4	< 12.9					18	16	< 19.1	< 12	18.6	23.08
TSS (mg/L) Daily Maximum	8.5	29					36	20	< 34.0	14	25.5	50.0
Total Lead (lbs/day) Average Monthly	< 0.0005	< 0.005					< 0.004	< 0.008	< 0.004	< 0.008	0.008	0.004
Total Lead (lbs/day) Daily Maximum	< 0.0005	< 0.005					< 0.008	< 0.008	< 0.008	< 0.008	0.008	0.004
Total Lead (mg/L) Average Monthly	< 0.007	0.007					< 0.06	< 0.1	< 0.06	< 0.1	0.1	0.05
Total Lead (mg/L) Daily Maximum	< 0.007	0.007					< 0.01	< 0.1	< 0.1	< 0.1	0.1	0.05
Total Zinc (lbs/day) Average Monthly	< 0.001	0.02					0.005	0.008	< 0.006	< 0.004	0.008	0.009
Total Zinc (lbs/day) Daily Maximum	0.002	0.03					0.009	0.02	< 0.008	< 0.01	0.01	0.01

Total Zinc (mg/L) Average Monthly	< 0.013	0.027					0.0652	0.1099	< 0.0758	< 0.05	0.112	0.122
Total Zinc (mg/L) Daily Maximum	0.02	0.042					0.117	0.23	< 0.106	< 0.100	0.169	0.149

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	1.5514
Latitude	41º 50' 26"	**Longitude**	79º 16' 06"

Wastewater Description: Contact cooling (quench) water, boiler blowdown, softener backwash, steam condensate, non-contact cooling water, waterjet machining wastewater, Suboutfall 101 and stormwater

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
	15	Average Monthly		95.2(2)(ii)
Oil & Grease	30	Daily Maximum		95.2(2)(ii)
pH	6.0 – 9.0 S.U.	Min – Max		95.2(1)

Comments: The waterjet machining process is one of the listed operations in 40 CFR 433 (Metal Finishing Operations). ELGs found in 40 CFR 433 are not applicable to the waterjet machining wastewater because the facility does not perform electroplating, electroless plating, anodizing, coating, chemical etching and milling, or printed circuit board manufacture (40 CFR 4333.10(a).

ELGs are applied at Suboutfall 101 for vacuum degassing wastewater.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment A) determined the following parameters were candidates for limitations: Total cadmium, total copper, total phenols, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, 1,2-dichloroethane, 1,3-dichloropropylene, 1,1,2,2-tetrachloroethylene, tetrachloroethylene, 1,1,2-Trichloroethylene, and hexachlorobutadiene.

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
None			

Comments: As a result of a preliminary toxic screen analysis and associated PENTOXSD modeling, numerous parameters were recommended to get monitoring or limits in the renewed permit. Since all of these parameters were "non-detect" in application sampling but not tested down to the quantification limits for those parameters listed in the application instructions, the permittee was given the opportunity to do additional sampling using lower quantification limits to demonstrate that monitoring or effluent limits for identified pollutants is not needed. With inclusion of the additional sampling done by the permittee, the above parameters were identified as candidates for limitations.

The Toxic Screening Analysis Spreadsheet recommended monitoring for total cadmium and total copper in the renewed permit. Monitoring for either parameter is not being placed in the permit though because 1) the calculated WQBEL for total cadmium was over four times the highest non-detect reporting limit in application sampling of the effluent and 2) the calculated WQBEL for total copper was over three times the highest reported effluent concentration reported in the application. Additionally, 21 samples were tested for copper at Outfall 001, and they were all non-detect at a detection limit of 0.01 mg/l (four times less than the calculated limit).

PENTOXSD Modeling was not rerun to include the additional discharge flow from the new waterjet machining wastewater, which was proposed late in the permit review process, due to the belief that the additional flow would not make a measurable difference in calculated effluent limits nor contribute any new pollutant or significant increase in existing pollutant loads to that outfall.

Due to this outfall receiving thermal waste streams, the need for temperature limits or monitoring was considered. Application effluent sampling indicated a maximum wintertime temperature of 14.2°F, which is way less than any temperature criteria in 25 Pa Code Chapter 93. Therefore, not monitoring or limits will be imposed for temperature at Outfall 001.

TRC was not evaluated due it not currently being used in operations or treatment, even though chlorination is permitted in WQM Permit No. 6272201 T-1 as a treatment unit.

Best Professional Judgment (BPJ) Limitations

Comments: Imposing technology-based limits found in 40 CFR 433.16 (New Source Performance Standards) as BPJ limits to the waterjet machining wastewater was considered but not implemented due to the only material being machined (carbon and alloy steels (total iron)) only has one metal component with an ELG (total chromium), no toxic organic material (TTO) is expected, there is already technology based limits for oil and grease and pH technology-based limits at Outfall 001 which are more stringent or just as stringent as those found in the ELG for those parameters, and this wastestream makes up only a miniscule contribution to the overall wastestream discharging to Outfall 001.

Anti-Backsliding

N/A

Development of Effluent Limitations

Outfall No. 101 **Design Flow (MGD)** 0.009
Latitude 41º 50' 32.5" **Longitude** 79º 16' 8.8"
Wastewater Description: Vacuum degassing operations process water

Technology-Based Limitations

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

Parameter	Limit (lbs/day))	SBC	Federal Regulation	State Regulation
TSS	4.28	Average Monthly	40 CFR 420.52	
	12.82	Daily Maximum	40 CFR 420.52	
Lead	0.03	Average Monthly	40 CFR 420.53	
	0.08	Daily Maximum	40 CFR 420.53	
Zinc	0.04	Average Monthly	40 CFR 420.53	
	0.12	Daily Maximum	40 CFR 420.53	
pH	6.0 – 9.0 S.U.	Min – Max	40 CFR 420.52	95.2(1)

Comments: The production rate used to determine allowable mass limits for the Federal ELGs is related to the company's Title V Air Permit, which allows a throughput of 150,000 tons/year.

EPA previously indicated that the pH technology-based limits were not required to be applied at this internal outfall and be placed at the main outfall (Outfall 001) instead.

Water Quality-Based Limitations

Comments: N/A – This is an internal outfall.

Best Professional Judgment (BPJ) Limitations

Comments: N/A

Anti-Backsliding

N/A

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	41º 50' 26.40"	**Longitude**	79º 16' 13.41"
Wastewater Description:	Stormwater Associated with Industrial Activities		

Outfall No.	005	**Design Flow (MGD)**	0
Latitude	41º 50' 35.29"	**Longitude**	79º 16' 26.05"
Wastewater Description:	Stormwater		

Technlogy-Based Limitations

Comments: N/A

Water Quality-Based Limitations

Comments: N/A

Best Professional Judgment (BPJ) Limitations

Comments: Monitoring requirements and bench mark value found in the PAG-03 General Permit, Appendix U – Fabricated Metal Products will be placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Industrial Permits."

Anti-Backsliding

N/A

Other Considerations

Outfall 002 and 004 were certified by the permittee to have a condition of "No Exposure." Therefore, they will not have any monitoring requirements in the draft permit.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/week	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	2/month	Grab

Compliance Sampling Location: Outfall 001 (prior to mixing with any other waters)

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 002 (prior to mixing with any other waters)

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 004 (prior to mixing with any other waters)

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 101, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD) Internal Monitoring Point	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
TSS Internal Monitoring Point	4.3	12.8	XXX	Report	Report	384	4/month	Composite
Total Lead Internal Monitoring Point	0.03	0.08	XXX	Report	Report	2.3	4/month	Composite
Total Zinc Internal Monitoring Point	0.04	0.12	XXX	Report	Report	3.5	4/month	Composite

Compliance Sampling Location: Suboutfall 101 (prior to mixing with any other waters)

Other Comments:

ATTACHMENT A

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Figure 1 - Tech-Based Limit Calculations

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Figure 2 - Toxic Screening Analysis Spreadsheet

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Figure 3 - PENTOXSD Modeling

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Figure 4 - Discharge pH