pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0003239** |
| Facility Type | **Industrial** | APS ID | **939915** |
| Major / Minor | **Major** | Authorization ID | **1180529** |

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

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Swagelok Processing Corporation** | Facility Name | **Swagelok Processing Corporation** |
| Applicant Address | 7544 Rte 18 North | Facility Address | 7544 Rte 18 N |
| | Koppel, PA 16136 | | Koppel, PA 16136 |
| Applicant Contact | Joe Kononpinski | Facility Contact | Same as Applicant |
| Applicant Phone | (724) 847-4623 | Facility Phone | Same as Applicant |
| Client ID | 335297 | Site ID | 459056 |
| SIC Code | 3317 | Municipality | Koppel Borough |
| SIC Description | Manufacturing - Steel Pipe And Tubes | County | Beaver |
| Date Application Received | April 24, 2017 | EPA Waived? | No |
| Date Application Accepted | April 17, 2019 | If No, Reason | Major Facility |

Purpose of Application: Transfer and Renewal of NPDES permit

## Summary of Review

The Department received an NPDES permit transfer application from Swagelok Processing Corporation on April 24, 2017 to transfer NPDES permit PA0003239 from Penn State Special Metals, LLC to Swagelok Processing Corporation. The Department has a pending renewal application for the facility from September 29, 2011 submitted by Penn State Special Metals, LLC. The transfer of the NPDES permit will be incorporated in the NPDES Permit renewal.

Swagelok Processing Corporation Facility, formerly the Penn State Special Metals, LLC Facility, draws, cuts, anneals, cleans and otherwise processes steel bar/tube to manufacture cold drawn metal products. Part of the facility operations consists or alkaline cleaning and acid pickling operations. Wastewater is generated from these processes when the materials are dipped into rise water tubs. The rinse water from the tubs overflow and is collected for treatment. The wastewater from these operations, along with boiler blowdown, cooling tower blowdown and fume scrubber wastewater, get treated through an onsite wastewater treatment plant. The wastewater treatment plant consists of flow equalization, neutralization, chemical precipitation, flocculation, sedimentation, rapid sand filtration and neutralization. The treated wastewater then enters the site's storm sewer system via internal monitoring point 113. From the storm sewer system, the treated wastewater is combined with stormwater and discharges via Outfall 013 to the Beaver River, designated in PA 25 Chapter 93 as a Warm Water Fishery.

The permittee also noted that they were concerned with their ability to meet the current Oil and Grease loading limits at IMP 113. When the permittee uses the method detection limit of 5.0 mg/L and their current discharge flow, the discharge load exceeds the load limitation, implying that even if they have sample results that come back as non-detect they will not be in compliance with the load limit. The Department notes that Swagelok's discharge is nearly three times the Production Normalizing Flow (PNF), for which the loading limits in the ELG were developed. The EPA has studied the typical volume of wastewater generated at similar manufacturing facilities across the country to define the PNF. The Department recommends that Swagelok evaluate ways to reduce the volume of water used at the site.

The site was last inspected on June 14, 2019; no violations were noted. The permittee has no open violations.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | Adam Olesnanik / Environmental Engineering Specialist | 9-25-19 |
| ✓ | | Michael E. Fifth, P.E. / Environmental Engineer Manager | 9/25/19 |

**Summary of Review**

It is recommended that a Draft NPDES Permit be published for public comment in response to this application.

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. | 013 | Design Flow (MGD) | 0.021 |
| Latitude | 40º 50' 33.0" | Longitude | -80º 19' 17.0" |
| Quad Name | Beaver Falls | Quad Code | 1203 |
| Wastewater Description: | IW Process Effluent with ELG | | |

| | | | |
|---|---|---|---|
| Receiving Waters | Beaver River (WWF) | Stream Code | 33953 |
| NHD Com ID | 123918297 | RMI | 11.8 |
| Drainage Area | 3090 | Yield (cfs/mi$^2$) | 0.207 |
| $Q_{7-10}$ Flow (cfs) | 640 | $Q_{7-10}$ Basis | US Army Corp of Engineers |
| Elevation (ft) | 724 | Slope (ft/ft) | 0.0001 |
| Watershed No. | 20-B | Chapter 93 Class. | WWF |
| Existing Use | | Existing Use Qualifier | |
| Exceptions to Use | | Exceptions to Criteria | |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Cause Unknown, Polychlorinated Biphenyls (PCBs) | | |
| Source(s) of Impairment | Source Unknown, | | |
| TMDL Status | | Name | |

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | Beaver Falls Municipal Authority | | |
| PWS Waters | Beaver River | Flow at Intake (cfs) | 640 |
| PWS RMI | 5.6 | Distance from Outfall (mi) | 6.2 |

## Development of Effluent Limitations

| | | | |
|---|---|---|---|
| **Outfall No.** | 013 | **Design Flow (MGD)** | |
| **Latitude** | 40º 50' 33.0" | **Longitude** | -80º 19' 17.0" |

**Wastewater Description:** Treated Industrial Wastewater and Stormwater

Outfall 013 receives the discharge from the wastewater treatment plant and stormwater. The waste stream that Outfall 013 receives is mixed; therefore, an internal monitoring point is used to monitor the isolated wastewater. The Industrial wastewater discharge from the wastewater treatment plant will be monitored at IMP 113.

**Development of Effluent Limitations**

| | | | |
|---|---|---|---|
| **IMP No.** | 113 | **Design Flow (MGD)** | 0.021 |
| **Latitude** | 40º 50' 33.0" | **Longitude** | -80º 19' 17.0" |

**Wastewater Description:** Acid Pickling Wastewater, Alkaline Cleaning Wastewater, Fume Scrubber Wastewater, Cooling Tower Blowdown and Boiler Blowdown

**Technology-Based Limitations**

Federal Effluent Limitation Guidelines (ELGs)

IMP 113 is subject to Federal Effluent Limitation Guidelines (ELGs) under 40 CFR 420.92 (c) (5) (Iron and Steel Manufacturing Subpart I- Acid Pickling Subcategory), 40 CFR 420.92 (c) (6) (Iron and Steel Manufacturing Subpart I- Fume Scrubbers, and 40 CFR 420.112 (a) (Iron and Steel Manufacturing Subpart K- Alkaline Cleaning Subcategory). IMP 113 also receives boiler blowdown and cooling tower blowdown. Boiler blowdown is considered a low volume waste source and is subject to 40 CFR 423.12 and cooling tower blowdown is subject to 40 CFR 423.12. Each subcategory is broken down below. The discharge from IMP 113 is from multiple sources, therefore the comingling of the wastewater must be considered when developing the effluent limitations. To do this, the final limitations from the ELGs were derived using the building block approach, taking each subpart that applies to the facility into consideration. The production used in determining the loading limitations is the final, out the door, production rate. The current production rate at the site is 17,500 lbs/day.

The limits in the ELG for 40 CFR 420.92 (c) (5) (Iron and Steel Manufacturing Subpart I- Acid Pickling Subcategory) are determined through production data. Based upon the average daily production that was included in the permit application, the effluent limits from the ELG for Combination Acid Picking (pipe, tube, and other products) are shown below in Table 1. Swagelok does not generate cold rolling wastewater; therefore, credit for oil and grease cannot be given for this waste stream.

**Table 1: Mass Limitation Calculation – Iron and Steel - Combination Acid Pickling (Pipe, Tube, and Other Products)**

| Parameter | Limitations in ELGs [3] | | Production Rate (lbs/day) | Mass-Based Effluent Limits (lbs/day) | |
|---|---|---|---|---|---|
| | Monthly Average | Maximum Daily | | Monthly Average | Maximum Daily |
| Total Suspended Solids | 0.0964[1] | 0.225[1] | 17,500 | 1.69 | 3.94 |
| Oil & Grease [2] | 0.0322[1] | 0.0964[1] | | - | - |
| Chromium | 0.00129[1] | 0.00322[1] | | 0.0226 | 0.0564 |
| Nickel | 0.000964[1] | 0.00289[1] | | 0.0169 | 0.0506 |
| pH | Within the range of 6.0 to 9.0 | | | Within the range of 6.0 to 9.0 | |

[1]Pounds per 1000 lbs (or g/kg) of product.
[2] The limitations for oil and grease shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters.
[3]40 CFR 420.92(c)(5)

The limits in the 40 CFR 420.112 (a) (Iron and Steel Manufacturing Subpart K- Alkaline Cleaning Subcategory) are determined through production data. Based upon the average annual production that was included in the permit application, the effluent limits from 40 CFR 420.112 (a) (Iron and Steel Manufacturing Subpart K- Alkaline Cleaning Subcategory) are shown below in Table 2.

**Table 2: Mass Limitation Calculation – Iron and Steel - Alkaline Cleaning (Batch)**

| Parameter | Limitations in ELGs [2] | | Production Rate (lbs/day) | Mass-Based Effluent Limits (lbs/day) | |
|---|---|---|---|---|---|
| | Monthly Average | Maximum Daily | | Monthly Average | Maximum Daily |
| Total Suspended Solids | 0.0313[1] | 0.0730[1] | 17,500 | 0.548 | 1.28 |
| Oil & Grease [2] | 0.0104[1] | 0.0313[1] | | 0.182 | 0.548 |
| pH | Within the range of 6.0 to 9.0 | | | Within the range of 6.0 to 9.0 | |

[1]Pounds per 1000 lbs (or g/kg) of product.
[2]40 CFR 420.112 (a)

The limits in 40 CFR 420.92 (c) (6) (Iron and Steel Manufacturing Subpart I- Fume Scrubbers) are in Kg/day and will need to be converted to lbs/day by multiplying the limit in the ELG by the unit conversion of 2.2046 lbs/kg. Additionally, the site has three fume scrubbers, and the limitations in the ELG are per fume scrubber; so, these values will need to be multiplied by the number of scrubbers. The limits from 40 CFR 420.92 (c) (6) (Iron and Steel Manufacturing Subpart I- Fume Scrubbers) converted to lbs/day and multiplied by the total number of scrubbers (3) are displayed below in Table 3. Swagelok does not generate cold rolling wastewater; therefore, credit for oil and grease cannot be given for this waste stream.

**Table 3: Mass Limitation Calculations – Iron and Steel - Acid Pickling (Fume Scrubbers)**

| Parameter | Limitation in ELGs [2] (Kg/d) | | Number of Fume Scrubbers | Mass-Based Effluent Limits (lbs/day) | |
|---|---|---|---|---|---|
| | Monthly Average | Maximum Daily | | Monthly Average | Maximum Daily |
| Total Suspended Solids | 2.45 | 5.72 | 3 | 16.2 | 37.8 |
| Oil & Grease [1] | 0.819 | 2.45 | | - | - |
| Chromium | 0.0327 | 0.0819 | | 0.216 | 0.542 |
| Nickel | 0.0245 | 0.0735 | | 0.162 | 0.486 |
| pH | Within the range of 6.0 to 9.0 | | | | |

[1] The limitations for oil and grease shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters
[2] 40 CFR 420.92(c)(6)

The limits in 40 CFR 423.12 for boiler blowdown is shown in Table 4 below. As discussed above, the boiler blowdown comingles with the other process wastewater, therefore, load allocations must be given to this waste stream for the pollutants that received allocations for the other waste streams and that have concentration limitations on the boiler blowdown. The load allocations were determined by converting the concentrations limits to mass-based limits using the average discharge flow of the boiler blowdown (0.003 MGD) and a conversion factor (8.34).

**Table 4. Boiler Blowdown Limitations**

| Parameter | Mass-Based Limitations (lbs/day) | | Concentration Limitations (mg/l) | |
|---|---|---|---|---|
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum |
| Total Suspended Solids | 0.751 | 2.50 | 30.0 | 100.0 |
| Oil and Grease | 0.375 | 0.500 | 15.0 | 20.0 |

The limits in 40 CFR 423.12 for cooling tower blowdown is shown in Table 5 below.

**Table 5. Cooling Tower Blowdown Limitations**

| Parameter | BPT effluent Limitations (mg/l) | |
|---|---|---|
| | Monthly Average | Daily Maximum |
| Free available chlorine | 0.2 | 0.5 |

The waste waters are all combined together for treatment; therefore, the building block approach must be used to determine the total ELG effluent limits. Using the building block approach, by adding all subparts together, the total loading limitations were determined and are displayed below in Table 6. A summary of the loads used in determining the total load limitations are included in Attachment L of this Fact Sheet.

The Department has determined that it is beneficial to include concentration-based limitations to supplement the mass-based limitations at IMP 113. Expression of limitations in terms of both concentration and mass encourages proper operation of a treatment facility at all times. Where limitations are expressed in more than one unit, the permittee must comply with both the mass-based limitations in the ELG were developed using Production Normalizing Flow and concentrations. The Production Normalizing Flow is an estimate of water use based on the quantity of “off-pounds” of product removed from a production line at the end of a specific process cycle. The EPA has studied the typical volume of wastewater generated at similar manufacturing facilities across the country to define the Production Normalizing Flow. The concentrations that were used to develop the mass-based limitations are included in Attachment J and were taken from Table I-1 on page 16 of the 1982 Iron and Steel ELG Development Document. The final concentration limits will need to be evaluated using a mass balance

equation to take all of the comingling wastewater into consideration. When no load allocation for specific parameters are given to a contributing wastewater, it is assumed that the parameter is not present in the discharge. Therefore, these wastewaters are considered to be diluting the discharge and must be considered when determining the concentrations limits. Using the flow from the water flow diagram that was included in the application, which is include in Attachment H of this Fact Sheet, and the concentrations discussed above, the final Concentrations limits were determined and are shown in Table 6 below. An example of the calculations and the figures used in the calculations are included in Attachment L.

**Table 6: Proposed ELG Limitations**

| Parameter | Mass Based (lbs/day) | | Concentration Based (mg/L) | |
|---|---|---|---|---|
| | Monthly Average | Maximum Daily | Monthly Average | Maximum Daily |
| Total Suspended Solids | 19.2 | 45.5 | 25.6 | 62.4 |
| Oil & Grease | 0.56 | 1.05 | 7.94 | 21.7 |
| Chromium | 0.239 | 0.598 | 0.307 | 0.768 |
| Nickel | 0.179 | 0.537 | 0.231 | 0.691 |
| Free Available Chlorine | - | - | 0.2 | 0.5 |
| pH (S.U.) | Within the range of 6.0 to 9.0 | | | |

Using the average monthly loading limit for oil and grease, the average discharge flow from IMP 113, and a conversion factor of 8.3435; the concentration Swagelok must achieve to be in compliance with the loading limit is 3.20 mg/L. Currently, the method detection limit for Oil and Grease using the most sensitive method, (EPA Method 1664), is 5.0 m/L. Furthermore, if Swagelok sampled the discharge and reported the resolve as non-detect at the method detection limit, they will not be in compliance with the loading limit. Therefore, a monthly average and a daily maximum limit of 5.0 mg/L will be imposed as the concentration limitations at IMP 113 for oil and grease. Load monitoring for Oil and Grease will be imposed as well. Even though there are no loading limitations, this is more stringent than the ELG requirements because the Oil and Grease limits are imposed as non-detect in the discharge.

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

As oil-bearing wastewaters, discharges from IMP 113 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2)

Industrial waste discharges cannot contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes an Instantaneous maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 7.

**Table 7: Regulatory Effluent Standards and Monitoring Requirements for IMP 113**

| Parameter | Monthly Average | Daily Maximum | IMAX | Units |
|---|---|---|---|---|
| Flow | Monitor and Report | | XXX | MGD |
| Dissolved Iron | - | 7.0 | XXX | mg/L |
| Oil & Grease | 15 | 30 | XXX | mg/L |
| Temperature | - | XXX | 110 | °F |
| Total Residual Chlorine | 0.5 | 1.0 | XXX | mg/L |
| pH | Not less than 6.0 nor greater than 9.0 | | | S.U. |

**Water Quality-Based Limitations**

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

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW 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 "<MDL" where the method detection limit for the analytical method used by the applicant 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 C).

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 are collected on a spreadsheet titled "Toxics Screening Analysis." (Attachment C).

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 may also 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, 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 may recommend average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 113

**Table 8: PENTOXSD Inputs**

| **Parameter** | **Value** |
|---|---|
| River Mile Index | 11.8 |
| Discharge Flow (MGD) | 0.021 |
| **Basin/Stream Characteristics** | |
| **Parameter** | **Value** |
| Area in Square Miles | 3090 |
| $Q_{7-10}$ (cfs) | 640 |
| Low-flow yield (cfs/mi$^2$) | 0.207 |
| Elevation (ft) | 724 |
| Slope | 0.0001 |

Discharges from IMP 113 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are used for toxics screening as described above. The PENTOXSD model is run with the discharge and receiving stream characteristics shown in Table 8. The pollutants selected for analysis include those identified as candidates for modeling by the Toxics Screening Analysis spreadsheet (in accordance with Step 2 of the Toxics Screening Analysis procedure discussed above). Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis.

The WQBELs calculated using PENTOXSD are compared to the maximum reported effluent concentrations as described in the Toxics Screening Analysis section above to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of the Toxics Screening Analysis, IMP 113 received no new WQBELs. The PENTOXSD model run is included in Attachment D.

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment E, indicate that no WQBELs are required for TRC.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using a DEP program called "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate ($Q_{7\text{-}10}$ or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from IMP 113 are classified under Case 2 because water is obtained from municipal water supply. The flow rate used for modeling is 0.021 MGD, which is the average discharge flow from IMP 113. The results of the thermal analysis, included in Attachment F, indicate that no WQBELs for temperature are required at IMP 113. Therefore, the 110°F daily maximum temperature limit will be imposed at IMP 113

## Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 9. The mass-based limitations for total suspended solids, oil and grease, total chromium, and total nickel were developed using the ELGs in 40 CFR 420.92 and 420.112 and previous production data. These limitations will be replaced with the new production-based mass limitations to reflect how the site is currently operating. The concentration limitations for these parameters were imposed based on model treatment system effluent quality and are from the 1982 Iron and Steel Development Document, pages 281, 285, and 288. These concentrations will remain unchanged in the renewal permit.

**Table 9: Effluent Limitations in the Current Permit for IMP 113**

| Parameter | Average Monthly (lbs/day) | Daily Maximum (lbs/day) | Average Monthly (mg/L) | Daily Maximum (mg/L) | Instant. Maximum (mg/L) | Sample Frequency | Sample Type |
|---|---|---|---|---|---|---|---|
| Flow (MGD) | Report | Report | XXX | XXX | XXX | 1/week | Recorded |
| Total Suspended Solids | 34.0 | 79.4 | 15.0 | 40.0 | XXX | 1/week | 24-hr composite |
| Oil and Grease | 0.805 | 2.42 | 10.0 | 30.0 | XXX | 1/week | Grab |
| Total Chromium | 0.423 | 1.056 | 0.1 | 0.3 | XXX | 1/week | 24-hr composite |
| Total Nickel | 0.316 | 0.948 | 0.1 | 0.3 | XXX | 1/week | 24-hr composite |
| Total Residual Chlorine | XXX | XXX | 0.5 | XXX | 1.0 | 1/week | Grab |
| Fluoride | XXX | XXX | 26.4 | 59.5 | XXX | 1/week | 24-hr composite |
| pH (S.U.) | Not less than 6.0 nor greater than 9.0 | | | | | 1/week | Grab |

**Proposed Effluent Limitations and Monitoring Requirements**

The proposed effluent limitations for IMP 113 are displayed in Table 10 below, they are the most stringent values from the above effluent limitation development.

**Table 10: Proposed Effluent Limitations for IMP 113**

| Parameter | Average Monthly (lbs/day) | Daily Maximum (lbs/day) | Average Monthly (mg/L) | Daily Maximum (mg/L) | Instant. Maximum (mg/L) | Sample Frequency | Sample Type |
|---|---|---|---|---|---|---|---|
| Flow (MGD) | Report | Report | XXX | XXX | XXX | 1/week | Recorded |
| Total Suspended Solids | 19.2 | 45.5 | 15.0 | 40.0 | XXX | 1/week | 24-hr composite |
| Oil and Grease* | Report | Report | 5.0 | 5.0 | XXX | 1/week | Grab |
| Total Chromium | 0.239 | 0.598 | 0.1 | 0.3 | XXX | 1/week | 24-hr composite |
| Total Nickel | 0.179 | 0.537 | 0.1 | 0.3 | XXX | 1/week | 24-hr composite |
| Total Residual Chlorine | XXX | XXX | 0.5 | XXX | 1.0 | 1/week | Grab |
| Fluoride | XXX | XXX | 26.4 | 59.5 | XXX | 1/week | 24-hr composite |
| Dissolved Iron | XXX | XXX | XXX | 7.0 | XXX | 1/week | Grab |
| Temperature (°F) | XXX | XXX | XXX | XXX | 110 | 1/week | i-s |
| Free Available Chlorine | XXX | XXX | 0.20 | 0.50 | XXX | 1/week | Grab |
| pH (S.U.) | Not less than 6.0 nor greater than 9.0 | | | | | 1/week | Grab |

*To be in compliance, Oil and Grease shall be reported as less than 5.0 mg/L, indicating a non-detect result.

| Tools and References Used to Develop Permit | |
|---|---|
| | |
| ☐ | WQM for Windows Model (see Attachment ) |
| ☒ | PENTOXSD for Windows Model (see Attachment **D**) |
| ☒ | TRC Model Spreadsheet (see Attachment **E**) |
| ☒ | Temperature Model Spreadsheet (see Attachment **F**) |
| ☒ | Toxics Screening Analysis Spreadsheet (see Attachment **C**) |
| ☐ | 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: |

## Attachments

Attachment A: USGS Stream Stats Data for Outfall 013 / IMP113

Attachment B: Federal Effluent Limitation Guidelines References

Attachment C: Toxics Screening Analysis Results for IMP 113

Attachment D: PENTOXSD Modeling Results for IMP 113

Attachment E: TRC Evaluation for Outfall 013 / IMP 113

Attachment F: Thermal Discharge Evaluation for Outfall 013 / IMP 113

Attachment G: Site Map

Attachment H: Water Flow Schematic

Attachment I: Treatment System Process Flow Diagram

Attachment J: Iron and Steel Effluent Guidelines Development Document Concentration Tables

Attachment K: NPDES Permit Rating Work Sheet

Attachment L: ELG Limitation Calculations

## Attachment A:

## USGS Stream Stats Data for Outfalls 013 / IMP 113

# StreamStats Report

| | |
|---|---|
| **Region ID:** | PA |
| **Workspace ID:** | PA20190417164232300000 |
| **Clicked Point (Latitude, Longitude):** | 40.84458, -80.32066 |
| **Time:** | 2019-04-17 12:42:48 -0400 |


Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 3090 | square miles |
| ELEV | Mean Basin Elevation | 1128.1 | feet |

Low-Flow Statistics Parameters [100 Percent (3090 square miles) Low Flow Region 4]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 3090 | square miles | 2.26 | 1400 |
| ELEV | Mean Basin Elevation | 1128.1 | feet | 1050 | 2580 |

Low-Flow Statistics Disclaimers [100 Percent (3090 square miles) Low Flow Region 4]

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

Low-Flow Statistics Flow Report [100 Percent (3090 square miles) Low Flow Region 4]

| Statistic | Value | Unit |
|---|---|---|
| 7 Day 2 Year Low Flow | 252 | ft^3/s |
| 30 Day 2 Year Low Flow | 333 | ft^3/s |
| 7 Day 10 Year Low Flow | 160 | ft^3/s |
| 30 Day 10 Year Low Flow | 186 | ft^3/s |
| 90 Day 10 Year Low Flow | 254 | ft^3/s |

*Low-Flow Statistics Citations*

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

## Attachment B:

## Federal Effluent Limitation Guidelines References

## Subpart I—Acid Pickling Subcategory

Back to Top

**§420.90 Applicability; description of the acid pickling subcategory.**

The provisions of this subpart are applicable to discharges and to the introduction of pollutants into publicly owned treatment works resulting from sulfuric acid, hydrochloric acid, or combination acid pickling operations.

### §420.91 Specialized definitions.

(c) The term *combination acid pickling* means those operations in which steel products are immersed in solutions of more than one acid to chemically remove scale and oxides, and those rinsing steps associated with such immersions.

**§420.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

(c) *Combination acid pickling (spent acid solution and rinse waters).*

(5) *Pipe, tube, and other products.*

SUBPART I

| Pollutant or pollutant property | BPT effluent limitations | |
|---|---|---|
| | Maximum for any 1 day | Average of daily values for 30 consecutive days |
| | Kg/kkg (pounds per 1,000 lb) of product | |
| TSS | 0.225 | 0.0964 |
| O&G[1] | 0.0964 | 0.0322 |
| Chromium | 0.00322 | 0.00129 |
| Nickel | 0.00289 | 0.000964 |
| pH | ([2]) | ([2]) |

[1]The limitations for oil and grease shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters.

[2]Within the range of 6.0 to 9.0.

(6) *Fume scrubbers.*

SUBPART I

| Pollutant or pollutant property | BPT effluent limitations | |
|---|---|---|
| | Maximum for any 1 day | Average of daily values for 30 consecutive days |
| | Kilograms per day | |
| TSS | 5.72 | 2.45 |
| O&G[1] | 2.45 | 0.819 |
| Chromium | 0.0819 | 0.0327 |
| Nickel | 0.0735 | 0.0245 |
| pH | ([2]) | ([2]) |

[1]The limitations for oil and grease shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters.

[2]Within the range of 6.0 to 9.0.

The above limitations shall be applicable to each fume scrubber associated with a combination acid pickling operation.

## Subpart K—Alkaline Cleaning Subcategory

Back to Top

**§420.110 Applicability; description of the alkaline cleaning subcategory.**

The provisions of this subpart are applicable to discharges and to the introduction of pollutants into publicly owned treatment works resulting from operations in which steel and steel products are immersed in alkaline cleaning baths to remove mineral and animal fats or oils from the steel, and those rinsing operations which follow such immersion.

**§420.111 Specialized definitions.**

(a) The term *batch* means those alkaline cleaning operations which process steel products such as coiled wire, rods, and tubes in discrete batches or bundles.

**§420.112 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

(a) *Batch.*

**SUBPART K**

| Pollutant or pollutant property | BPT effluent limitations | |
|---|---|---|
| | Maximum for any 1 day | Average of daily values for 30 consecutive days |
| | Kg/kkg (pounds per 1,000 lb) of product | |
| TSS | 0.0730 | 0.0313 |
| O&G | 0.0313 | 0.0104 |
| pH | ([1]) | ([1]) |

[1]Within the range of 6.0 to 9.0.

**§423.10 Applicability.**

The provisions of this part apply to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation, and whose generation of electricity results primarily from a process utilizing fossil-type fuel (coal, oil, or gas), fuel derived from fossil fuel (e.g., petroleum coke, synthesis gas), or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium. This part applies to discharges associated with both the combustion turbine and steam turbine portions of a combined cycle generating unit.

**§423.11 Specialized definitions.**

In addition to the definitions set forth in 40 CFR part 401, the following definitions apply to this part:

(b) The term *low volume waste sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in this part. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.

**§423.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

(a) In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, utilization of facilities, raw materials, manufacturing processes, non-water quality environmental impacts, control and treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES Permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The phrase "other such factors" appearing above may include significant cost differentials. In no event may a discharger's impact on receiving water quality be considered as a factor under this paragraph.

(b) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction by the application of the best practicable control technology currently available (BPT):

(1) The pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0.

(2) There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

(3) The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration lised in the following table:

| Pollutant or pollutant property | BPT effluent limitations | |
|---|---|---|
| | Maximum for any 1 day (mg/l) | Average of daily values for 30 consecutive days shall not exceed (mg/l) |
| TSS | 100.0 | 30.0 |
| Oil and grease | 20.0 | 15.0 |

(7) The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown sources times the concentration listed in the following table:

| Pollutant or pollutant property | BPT effluent limitations | |
|---|---|---|
| | Maximum concentration (mg/l) | Average concentration (mg/l) |
| Free available chlorine | 0.5 | 0.2 |

## Attachment C:

## Toxics Screening Analysis Results for IMP 113

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.6

CLEAR FORM

Facility: **Swagelok**
NPDES Permit No.: **PA0003239**
Outfall: **113**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.021**
Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **640**

| | 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 |
|---|---|---|---|---|---|---|---|
| Group 1 | Total Dissolved Solids | | 384000 | 500000 | No | | |
| | Chloride | | 46600 | 250000 | No | | |
| | Bromide | | 240 | N/A | No | | |
| | Sulfate | | 128000 | 250000 | No | | |
| | Fluoride | | 22400 | 2000 | Yes | 39460000 | No Limits/Monitoring |
| Group 2 | Total Aluminum | | 10.9 | 750 | No | | |
| | Total Antimony | | 1.2 | 5.6 | No | | |
| | Total Arsenic | | 0.39 | 10 | No | | |
| | Total Barium | | 20.3 | 2400 | No | | |
| | Total Beryllium | | 0.054 | N/A | No | | |
| | Total Boron | | 124 | 1600 | No | | |
| | Total Cadmium | | 0.014 | 0.271 | No | | |
| | Total Chromium | | 26 | N/A | No | | |
| | Hexavalent Chromium | | 0.028 | 10.4 | No | | |
| | Total Cobalt | | 0.013 | 19 | No | | |
| | Total Copper | | 1 | 9.3 | No | | |
| | Total Cyanide | | 0.0046 | N/A | No | | |
| | Total Iron | | 15.6 | 1500 | No | | |
| | Dissolved Iron | | 11.1 | 300 | No | | |
| | Total Lead | | 0.11 | 3.2 | No | | |
| | Total Manganese | | 0.66 | 1000 | No | | |
| | Total Mercury | | 0.054 | 0.05 | Yes | 985.059 | No Limits/Monitoring |
| | Total Molybdenum | | 795 | N/A | No | | |
| | Total Nickel | | 2.8 | 52.2 | No | | |
| | Total Phenols (Phenolics) | | 0.016 | 5 | No | | |
| | Total Selenium | | 0.2 | 5.0 | No | | |
| | Total Silver | | 0.15 | 3.8 | No | | |
| | Total Thallium | | 0.026 | 0.24 | No | | |
| | Total Zinc | | 2.1 | 119.8 | No | | |

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.6

CLEAR FORM

Facility: **Swagelok**
NPDES Permit No.: **PA0003239**
Outfall: **113**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.021**
Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **640**

| | 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 |
|---|---|---|---|---|---|---|---|
| Group 3 | Acrolein | < | 2 | 3 | No (Value < QL) | | |
| | Acrylamide | < | | 0.07 | | | |
| | Acrylonitrile | < | 0.63 | 0.051 | No (Value < QL) | | |
| | Benzene | < | 0.24 | 1.2 | No (Value < QL) | | |
| | Bromoform | < | 0.32 | 4.3 | No (Value < QL) | | |
| | Carbon Tetrachloride | < | 0.34 | 0.23 | No (Value < QL) | | |
| | Chlorobenzene | < | 0.15 | 130 | No (Value < QL) | | |
| | Chlorodibromomethane | | 1.3 | 0.4 | Yes | 25938.64 | No Limits/Monitoring |
| | Chloroethane | < | 0.55 | N/A | No | | |
| | 2-Chloroethyl Vinyl Ether | < | 0.41 | 3500 | No (Value < QL) | | |
| | Chloroform | | 4.4 | 5.7 | No | | |
| | Dichlorobromomethane | | 1.3 | 0.55 | Yes | 35665.63 | No Limits/Monitoring |
| | 1,1-Dichloroethane | < | 0.19 | N/A | No | | |
| | 1,2-Dichloroethane | < | 0.25 | 0.38 | No (Value < QL) | | |
| | 1,1-Dichloroethylene | < | 0.31 | 33 | No (Value < QL) | | |
| | 1,2-Dichloropropane | < | 0.21 | 2200 | No (Value < QL) | | |
| | 1,3-Dichloropropylene | < | 0.25 | 0.34 | No (Value < QL) | | |
| | Ethylbenzene | < | 0.31 | 530 | No (Value < QL) | | |
| | Methyl Bromide | | 0.93 | 47 | No | | |
| | Methyl Chloride | < | 0.68 | 5500 | No | | |
| | Methylene Chloride | < | 0.77 | 4.6 | No | | |
| | 1,1,2,2-Tetrachloroethane | < | 0.34 | 0.17 | No (Value < QL) | | |
| | Tetrachloroethylene | < | 0.32 | 0.69 | No (Value < QL) | | |
| | Toluene | < | 0.3 | 330 | No (Value < QL) | | |
| | 1,2-trans-Dichloroethylene | < | 0.22 | 140 | No (Value < QL) | | |
| | 1,1,1-Trichloroethane | < | 0.28 | 610 | No (Value < QL) | | |
| | 1,1,2-Trichloroethane | < | 0.2 | 0.59 | No (Value < QL) | | |
| | Trichloroethylene | < | 0.39 | 2.5 | No (Value < QL) | | |
| | Vinyl Chloride | < | 0.31 | 0.025 | No (Value < QL) | | |

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.6

CLEAR FORM

Facility: **Swagelok**
NPDES Permit No.: **PA0003239**
Outfall: **113**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.021**
Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **640**

| | 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 |
|---|---|---|---|---|---|---|---|
| Group 4 | 2-Chlorophenol | < | 0.13 | 81 | No (Value < QL) | | |
| | 2,4-Dichlorophenol | < | 0.12 | 77 | No (Value < QL) | | |
| | 2,4-Dimethylphenol | < | 0.14 | 130 | No (Value < QL) | | |
| | 4,6-Dinitro-o-Cresol | < | 0.81 | 13 | No (Value < QL) | | |
| | 2,4-Dinitrophenol | < | 0.72 | 69 | No (Value < QL) | | |
| | 2-Nitrophenol | < | 0.13 | 1600 | No (Value < QL) | | |
| | 4-Nitrophenol | < | 0.11 | 470 | No (Value < QL) | | |
| | p-Chloro-m-Cresol | < | 0.13 | 30 | No (Value < QL) | | |
| | Pentachlorophenol | < | 0.84 | 0.27 | No (Value < QL) | | |
| | Phenol | | 0.76 | 10400 | No | | |
| | 2,4,6-Trichlorophenol | < | 0.15 | 1.4 | No (Value < QL) | | |

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.6

CLEAR FORM

Facility: **Swagelok**
NPDES Permit No.: **PA0003239**
Outfall: **113**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.021**
Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **640**

| | 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 |
|---|---|---|---|---|---|---|---|
| Group 5 | Acenaphthene | < | 0.13 | 17 | No (Value < QL) | | |
| | Acenaphthylene | < | 0.11 | N/A | No | | |
| | Anthracene | < | 0.11 | 8300 | No (Value < QL) | | |
| | Benzidine | < | 27.8 | 0.000086 | No (Value < QL) | | |
| | Benzo(a)Anthracene | < | 0.11 | 0.0038 | No (Value < QL) | | |
| | Benzo(a)Pyrene | < | 0.12 | 0.0038 | No (Value < QL) | | |
| | 3,4-Benzofluoranthene | < | 0.23 | 0.0038 | No (Value < QL) | | |
| | Benzo(ghi)Perylene | < | 0.35 | N/A | No | | |
| | Benzo(k)Fluoranthene | < | 0.092 | 0.0038 | No (Value < QL) | | |
| | Bis(2-Chloroethoxy)Methane | < | 0.13 | N/A | No | | |
| | Bis(2-Chloroethyl)Ether | < | 0.11 | 0.03 | No (Value < QL) | | |
| | Bis(2-Chloroisopropyl)Ether | < | 0.12 | 1400 | No (Value < QL) | | |
| | Bis(2-Ethylhexyl)Phthalate | | 0.15 | 1.2 | No | | |
| | 4-Bromophenyl Phenyl Ether | < | 0.16 | 54 | No (Value < QL) | | |
| | Butyl Benzyl Phthalate | < | 0.13 | 35 | No (Value < QL) | | |
| | 2-Chloronaphthalene | < | 0.1 | 1000 | No (Value < QL) | | |
| | 4-Chlorophenyl Phenyl Ether | < | 0.14 | N/A | No | | |
| | Chrysene | < | 0.14 | 0.0038 | No (Value < QL) | | |
| | Dibenzo(a,h)Anthrancene | < | 0.3 | 0.0038 | No (Value < QL) | | |
| | 1,2-Dichlorobenzene | < | 0.097 | 160 | No (Value < QL) | | |
| | 1,3-Dichlorobenzene | < | 0.12 | 69 | No (Value < QL) | | |
| | 1,4-Dichlorobenzene | < | 0.1 | 150 | No (Value < QL) | | |
| | 3,3-Dichlorobenzidine | < | 0.17 | 0.021 | No (Value < QL) | | |
| | Diethyl Phthalate | < | 0.19 | 800 | No (Value < QL) | | |
| | Dimethyl Phthalate | < | 0.15 | 500 | No (Value < QL) | | |
| | Di-n-Butyl Phthalate | | 0.28 | 21 | No | | |
| | 2,4-Dinitrotoluene | < | 0.13 | 0.05 | No (Value < QL) | | |
| | 2,6-Dinitrotoluene | < | 0.14 | 0.05 | No (Value < QL) | | |
| | 1,4-Dioxane | < | 0.31 | N/A | No | | |
| | Di-n-Octyl Phthalate | < | 0.14 | N/A | No | | |
| | 1,2-Diphenylhydrazine | < | 0.16 | 0.036 | No (Value < QL) | | |
| | Fluoranthene | < | 0.081 | 40 | No (Value < QL) | | |
| | Fluorene | < | 0.14 | 1100 | No (Value < QL) | | |

## TOXICS SCREENING ANALYSIS
## WATER QUALITY POLLUTANTS OF CONCERN
## VERSION 2.6

CLEAR FORM

Facility: **Swagelok**
Analysis Hardness (mg/L): **100**
Stream Flow, $Q_{7-10}$ (cfs): **640**

NPDES Permit No.: **PA0003239**
Discharge Flow (MGD): **0.021**

Outfall: **113**
Analysis pH (SU): **7**

| 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 |
|---|---|---|---|---|---|---|
| Hexachlorobenzene | < | 0.14 | 0.00028 | No (Value < QL) | | |
| Hexachlorobutadiene | < | 0.11 | 0.44 | No (Value < QL) | | |
| Hexachlorocyclopentadiene | < | 0.11 | 1 | No (Value < QL) | | |
| Hexachloroethane | < | 0.12 | 1.4 | No (Value < QL) | | |
| Indeno(1,2,3-cd)Pyrene | < | 0.3 | 0.0038 | No (Value < QL) | | |
| Isophorone | < | 0.11 | 35 | No (Value < QL) | | |
| Naphthalene | < | 0.11 | 43 | No (Value < QL) | | |
| Nitrobenzene | < | 0.11 | 17 | No (Value < QL) | | |
| n-Nitrosodimethylamine | < | 0.066 | 0.00069 | No (Value < QL) | | |
| n-Nitrosodi-n-Propylamine | < | 0.12 | 0.005 | No (Value < QL) | | |
| n-Nitrosodiphenylamine | < | 0.12 | 3.3 | No (Value < QL) | | |
| Phenanthrene | < | 0.16 | 1 | No (Value < QL) | | |
| Pyrene | < | 0.15 | 830 | No (Value < QL) | | |
| 1,2,4-Trichlorobenzene | < | 0.12 | 26 | No (Value < QL) | | |

## Attachment D:

## PENTOXSD Modeling Results for IMP 113

| Stream Code | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope | PWS With (mgd) | Apply FC |
|---|---|---|---|---|---|---|
| 33953 | 5.60 | 733.00 | 3095.00 | 0.00100 | 10.00 | ☑ |

**Stream Data**

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

**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) |
|---|---|---|---|---|---|---|---|---|---|---|
| CHLORODIBROMOMETHANE | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| DICHLOROBROMOMETHANE | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| FLUORIDE (PWS) | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| MERCURY | 0 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |

## PENTOXSD

### Modeling Input Data

| Stream Code | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope | PWS With (mgd) | Apply FC |
|---|---|---|---|---|---|---|
| 33953 | 11.80 | 734.00 | 3090.00 | 0.00100 | 0.00 | ☑ |

**Stream Data**

| | LFY | Trib Flow | Stream Flow | WD Ratio | Rch Width | Rch Depth | Rch Velocity | Rch Trav Time | Tributary Hard | Tributary pH | Stream Hard | Stream pH | Analysis Hard | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (cfsm) | (cfs) | (cfs) | | (ft) | (ft) | (fps) | (days) | (mg/L) | | (mg/L) | | (mg/L) | |
| Q7-10 | 0.1 | 0 | 640 | 0 | 300 | 15 | 0 | 0 | 100 | 7 | 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 | Permitted Disc Flow | Design Disc Flow | Reserve Factor | AFC PMF | CFC PMF | THH PMF | CRL PMF | Disc Hard | Disc pH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (mgd) | (mgd) | (mgd) | | | | | | (mg/L) | |
| IMP 113 | PA0003239 | 0.021 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| CHLORODIBROMOMETHANE | 1E+10 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| DICHLOROBROMOMETHANE | 1E+10 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| FLUORIDE (PWS) | 1E+10 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |
| MERCURY | 1E+10 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 1 | 0 |

## PENTOXSD Analysis Results

### Hydrodynamics

| SWP Basin | Stream Code: | Stream Name: |
|---|---|---|
| 20B | 33953 | BEAVER 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** | | | | | | | | | | | |
| 11.800 | 640 | 0 | 640 | 0.03248 | 0.001 | 15 | 300 | 20 | 0.1422 | 2.6639 | 67.141 |
| 5.600 | 640.5 | 15.47 | 625.03 | NA | 0 | 0 | 0 | 0 | 0 | 0 | NA |
| **Qh Hydrodynamics** | | | | | | | | | | | |
| 11.800 | 2106.6 | 0 | 2106.6 | 0.03248 | 0.001 | 25.336 | 300 | 11.841 | 0.2772 | 1.3670 | 30.587 |
| 5.600 | 2108.1 | 15.47 | 2092.6 | NA | 0 | 0 | 0 | 0 | 0 | 0 | NA |

## PENTOXSD Analysis Results

### Wasteload Allocations

| RMI | Name | Permit Number |
|---|---|---|
| **11.80** | **IMP 113** | **PA0003239** |

**AFC**

**Q7-10:** **CCT (min)** 15 **PMF** 0.472 **Analysis pH** 7 **Analysis Hardness** 100

| Parameter | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| DICHLOROBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| CHLORODIBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| FLUORIDE (PWS) | 0 | 0 | 0 | 0 | NA | NA | NA |
| MERCURY | 0 | 0 | 0 | 0 | 1.4 | 1.647 | 15338.3 |

Dissolved WQC. Chemical translator of 0.85 applied.

**CFC**

**Q7-10:** **CCT (min)** 67.141 **PMF** 1 **Analysis pH** 7 **Analysis Hardness** 100

| Parameter | Stream Conc. (µg/L) | Stream CV | Trib Conc. (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| DICHLOROBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| CHLORODIBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| FLUORIDE (PWS) | 0 | 0 | 0 | 0 | NA | NA | NA |
| MERCURY | 0 | 0 | 0 | 0 | 0.77 | 0.906 | 17846.96 |

Dissolved WQC. Chemical translator of 0.85 applied.

**THH**

**Q7-10:** **CCT (min)** 67.141 **PMF** 1 **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) |
|---|---|---|---|---|---|---|---|
| DICHLOROBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| CHLORODIBROMOMETHANE | 0 | 0 | 0 | 0 | NA | NA | NA |
| FLUORIDE (PWS) | 0 | 0 | 0 | 0 | 2000 | 2000 | 3.943E+07 |

WQC applied at RMI 5.6 with a design stream flow of 640.5.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MERCURY | 0 | 0 | 0 | 0 | 0.05 | 0.05 | 985.059 |

**CRL**

**Qh:** **CCT (min)** 30.587 **PMF** 1

## PENTOXSD Analysis Results

### Wasteload Allocations

| RMI | Name | Permit Number |
|---|---|---|
| **11.80** | **IMP 113** | **PA0003239** |

| Parameter | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) |
|---|---|---|---|---|---|---|---|
| DICHLOROBROMOMETHANE | 0 | 0 | 0 | 0 | 0.55 | 0.55 | 35665.63 |
| CHLORODIBROMOMETHANE | 0 | 0 | 0 | 0 | 0.4 | 0.4 | 25938.64 |
| FLUORIDE (PWS) | 0 | 0 | 0 | 0 | NA | NA | NA |
| MERCURY | 0 | 0 | 0 | 0 | NA | NA | NA |

## PENTOXSD Analysis Results

### Wasteload Allocations

| RMI | Name | Permit Number |
|---|---|---|
| **11.80** | **IMP 113** | **PA0003239** |

## PENTOXSD Analysis Results

### Recommended Effluent Limitations

| SWP Basin | Stream Code: | Stream Name: |
|---|---|---|
| 20B | 33953 | BEAVER RIVER |

| RMI | Name | Permit Number | Disc Flow (mgd) |
|---|---|---|---|
| 11.80 | IMP 113 | PA0003239 | 0.0210 |

| Parameter | Effluent Limit (µg/L) | Governing Criterion | Max. Daily Limit (µg/L) | Most Stringent WQBEL (µg/L) | Most Stringent WQBEL Criterion |
|---|---|---|---|---|---|
| CHLORODIBROMOMETHANE | 25938.64 | CRL | 40468.45 | 25938.64 | CRL |
| DICHLOROBROMOMETHANE | 35665.63 | CRL | 55644.11 | 35665.63 | CRL |
| FLUORIDE (PWS) | 3.943E+07 | THH | 6.152E+07 | 3.943E+07 | THH |
| MERCURY | 985.059 | THH | 1536.851 | 985.059 | THH |

## Attachment E:

## TRC Evaluation for Outfall 013 / IMP 113

## TRC EVALUATION

| | | | |
|---|---|---|---|
| 640 | = Q stream (cfs) | 0.5 | = CV Daily |
| 0.021 | = Q discharge (MGD) | 0.5 | = CV Hourly |
| 4 | = no. samples | 0.1 | = AFC_Partial Mix Factor |
| 0.3 | = Chlorine Demand of Stream | 0.1 | = CFC_Partial Mix Factor |
| 0 | = Chlorine Demand of Discharge | 15 | = AFC_Criteria Compliance Time (min) |
| 0.5 | = BAT/BPJ Value | 720 | = CFC_Criteria Compliance Time (min) |
| | = %Factor of Safety (FOS) | | =Decay Coefficient (K) |

| Source | Reference | AFC Calculations | | Reference | CFC Calculations | |
|---|---|---|---|---|---|---|
| TRC | **1.3.2.iii** | WLA afc = | 628.455 | **1.3.2.iii** | WLA cfc = | 612.687 |
| PENTOXSD TRG | **5.1a** | LTAMULT afc = | 0.373 | **5.1c** | LTAMULT cfc = | 0.581 |
| PENTOXSD TRG | **5.1b** | LTA_afc= | 234.177 | **5.1d** | LTA_cfc = | 356.187 |

| Source | | Effluent Limit Calculations | | |
|---|---|---|---|---|
| PENTOXSD TRG | 5.1f | AML MULT = | 1.720 | |
| PENTOXSD TRG | 5.1g | AVG MON LIMIT (mg/l) = | 0.500 | BAT/BPJ |
| | | INST MAX LIMIT (mg/l) = | 1.170 | |

| | |
|---|---|
| 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)** |

## Attachment F:

## Thermal Discharge Evaluation for Outfall 013 / IMP 113

**Facility:** Swagelok Processing Corporation
**Permit Number:** PA0003239
**Stream Name:** Beaver River
**Analyst/Engineer:** Adam Olesnanik
**Stream Q7-10 (cfs):** 640

| | Facility Flows[1] | | | | Stream Flows | |
|---|---|---|---|---|---|---|
| | Stream (Intake) (MGD) | External (Intake) (MGD) | Consumptive (Loss) (MGD) | Discharge (MGD) | Adj. Q7-10 Stream Flow (cfs) | Downstream[2] Stream Flow (cfs) |
| Jan 1-31 | 0 | 0.021 | 0 | 0.021 | 2048.0 | 2048.0 |
| Feb 1-29 | 0 | 0.021 | 0 | 0.021 | 2240.0 | 2240.0 |
| Mar 1-31 | 0 | 0.021 | 0 | 0.021 | 4480.0 | 4480.0 |
| Apr 1-15 | 0 | 0.021 | 0 | 0.021 | 5952.0 | 5952.0 |
| Apr 16-30 | 0 | 0.021 | 0 | 0.021 | 5952.0 | 5952.0 |
| May 1-15 | 0 | 0.021 | 0 | 0.021 | 3264.0 | 3264.0 |
| May 16-31 | 0 | 0.021 | 0 | 0.021 | 3264.0 | 3264.0 |
| Jun 1-15 | 0 | 0.021 | 0 | 0.021 | 1920.0 | 1920.0 |
| Jun 16-30 | 0 | 0.021 | 0 | 0.021 | 1920.0 | 1920.0 |
| Jul 1-31 | 0 | 0.021 | 0 | 0.021 | 1088.0 | 1088.0 |
| Aug 1-15 | 0 | 0.021 | 0 | 0.021 | 896.0 | 896.0 |
| Aug 16-31 | 0 | 0.021 | 0 | 0.021 | 896.0 | 896.0 |
| Sep 1-15 | 0 | 0.021 | 0 | 0.021 | 704.0 | 704.0 |
| Sep 16-30 | 0 | 0.021 | 0 | 0.021 | 704.0 | 704.0 |
| Oct 1-15 | 0 | 0.021 | 0 | 0.021 | 768.0 | 768.0 |
| Oct 16-31 | 0 | 0.021 | 0 | 0.021 | 768.0 | 768.0 |
| Nov 1-15 | 0 | 0.021 | 0 | 0.021 | 1024.0 | 1024.0 |
| Nov 16-30 | 0 | 0.021 | 0 | 0.021 | 1024.0 | 1024.0 |
| Dec 1-31 | 0 | 0.021 | 0 | 0.021 | 1536.0 | 1536.0 |

[1] Facility flows are not required (and will not affect the permit limits) if all intake flow is from the receiving stream (Case 1), consumptive losses are small, and permit limits will be expressed as Million BTUs/day.
[2] Downstream Stream Flow includes the discharge flow.

*Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.*
Version 1.0 -- 08/01/2004 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017
NOTE: The user can only edit fields that are blue.
NOTE: MGD x 1.547 = cfs.

Facility: **Swagelok Processing Corporation**
Permit Number: PA0003239
Stream: Beaver River

| | **WWF Criteria** (ºF) | **CWF Criteria** (ºF) | **TSF Criteria** (ºF) | **316 Criteria** (ºF) | **Q7-10 Multipliers** (Used in Analysis) | **Q7-10 Multipliers** (Default - Info Only) |
|---|---|---|---|---|---|---|
| Jan 1-31 | 40 | 38 | 40 | 0 | 3.2 | 3.2 |
| Feb 1-29 | 40 | 38 | 40 | 0 | 3.5 | 3.5 |
| Mar 1-31 | 46 | 42 | 46 | 0 | 7 | 7 |
| Apr 1-15 | 52 | 48 | 52 | 0 | 9.3 | 9.3 |
| Apr 16-30 | 58 | 52 | 58 | 0 | 9.3 | 9.3 |
| May 1-15 | 64 | 54 | 64 | 0 | 5.1 | 5.1 |
| May 16-30 | 72 | 58 | 68 | 0 | 5.1 | 5.1 |
| Jun 1-15 | 80 | 60 | 70 | 0 | 3 | 3 |
| Jun 16-30 | 84 | 64 | 72 | 0 | 3 | 3 |
| Jul 1-31 | 87 | 66 | 74 | 0 | 1.7 | 1.7 |
| Aug 1-15 | 87 | 66 | 80 | 0 | 1.4 | 1.4 |
| Aug 16-31 | 87 | 66 | 87 | 0 | 1.4 | 1.4 |
| Sep 1-15 | 84 | 64 | 84 | 0 | 1.1 | 1.1 |
| Sep 16-30 | 78 | 60 | 78 | 0 | 1.1 | 1.1 |
| Oct 1-15 | 72 | 54 | 72 | 0 | 1.2 | 1.2 |
| Oct 16-31 | 66 | 50 | 66 | 0 | 1.2 | 1.2 |
| Nov 1-15 | 58 | 46 | 58 | 0 | 1.6 | 1.6 |
| Nov 16-30 | 50 | 42 | 50 | 0 | 1.6 | 1.6 |
| Dec 1-31 | 42 | 40 | 42 | 0 | 2.4 | 2.4 |

NOTES:
WWF= Warm water fishes
CWF= Cold water fishes
TSF= Trout stocking

Facility: **Swagelok Processing Corporation**
Permit Number: PA0003239
Stream: Beaver River

| | **WWF** Ambient Stream Temperature (ºF) (Default) | Ambient Stream Temperature (ºF) (Site-specific data) | Target Maximum Stream Temp.[1] (ºF) | **WWF** Daily WLA[2] (Million BTUs/day) | **WWF** Daily WLA[3] (ºF) | at Discharge Flow (MGD) |
|---|---|---|---|---|---|---|
| Jan 1-31 | 35 | 0 | 40 | N/A -- Case 2 | 110.0 | 0.021 |
| Feb 1-29 | 35 | 0 | 40 | N/A -- Case 2 | 110.0 | 0.021 |
| Mar 1-31 | 40 | 0 | 46 | N/A -- Case 2 | 110.0 | 0.021 |
| Apr 1-15 | 47 | 0 | 52 | N/A -- Case 2 | 110.0 | 0.021 |
| Apr 16-30 | 53 | 0 | 58 | N/A -- Case 2 | 110.0 | 0.021 |
| May 1-15 | 58 | 0 | 64 | N/A -- Case 2 | 110.0 | 0.021 |
| May 16-30 | 62 | 0 | 72 | N/A -- Case 2 | 110.0 | 0.021 |
| Jun 1-15 | 67 | 0 | 80 | N/A -- Case 2 | 110.0 | 0.021 |
| Jun 16-30 | 71 | 0 | 84 | N/A -- Case 2 | 110.0 | 0.021 |
| Jul 1-31 | 75 | 0 | 87 | N/A -- Case 2 | 110.0 | 0.021 |
| Aug 1-15 | 74 | 0 | 87 | N/A -- Case 2 | 110.0 | 0.021 |
| Aug 16-31 | 74 | 0 | 87 | N/A -- Case 2 | 110.0 | 0.021 |
| Sep 1-15 | 71 | 0 | 84 | N/A -- Case 2 | 110.0 | 0.021 |
| Sep 16-30 | 65 | 0 | 78 | N/A -- Case 2 | 110.0 | 0.021 |
| Oct 1-15 | 60 | 0 | 72 | N/A -- Case 2 | 110.0 | 0.021 |
| Oct 16-31 | 54 | 0 | 66 | N/A -- Case 2 | 110.0 | 0.021 |
| Nov 1-15 | 48 | 0 | 58 | N/A -- Case 2 | 110.0 | 0.021 |
| Nov 16-30 | 42 | 0 | 50 | N/A -- Case 2 | 110.0 | 0.021 |
| Dec 1-31 | 37 | 0 | 42 | N/A -- Case 2 | 110.0 | 0.021 |

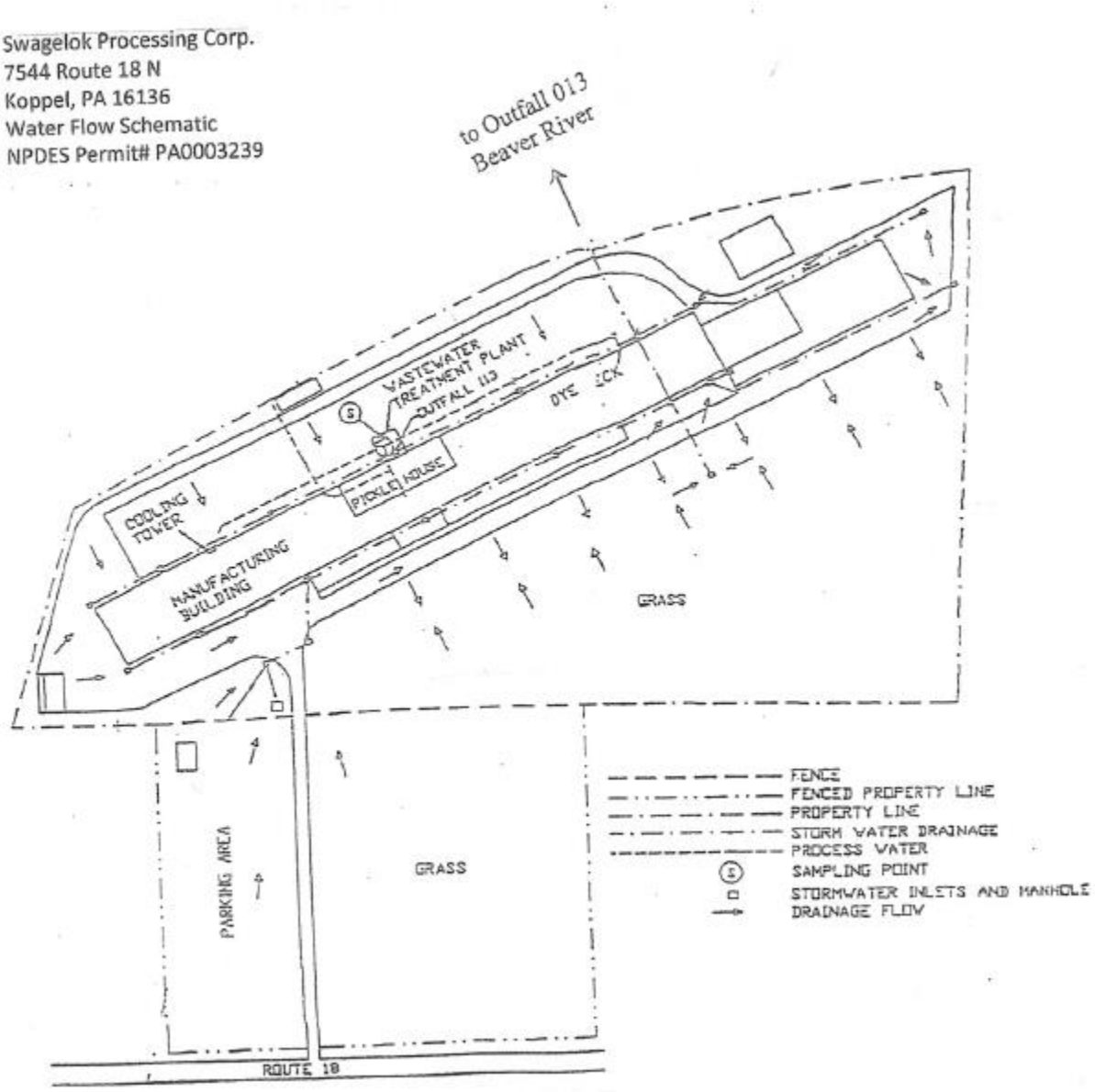
[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

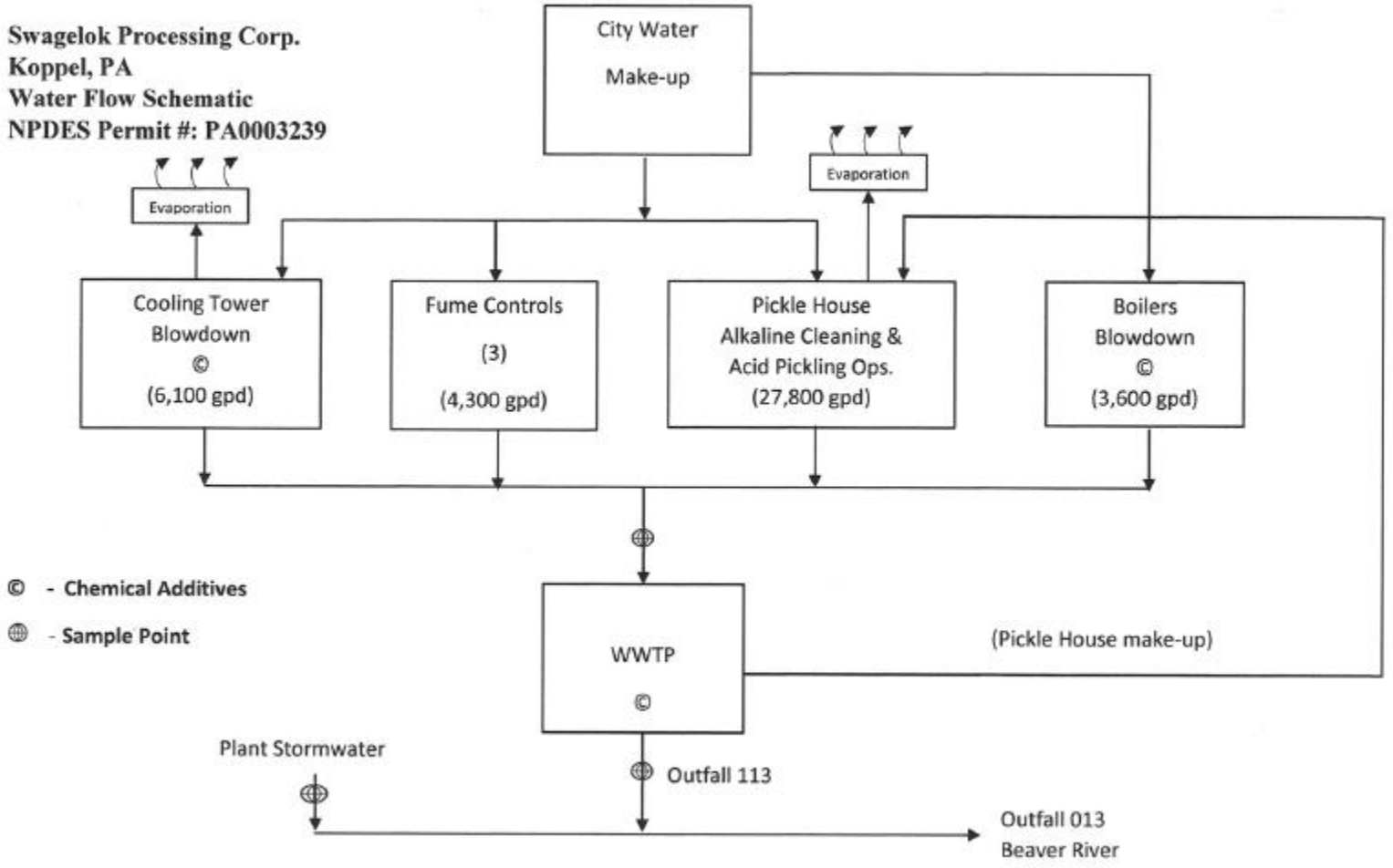
## Attachment G:

## Site Map


Swagelok Processing Corp.
7544 Route 18 N
Koppel, PA 16136
Water Flow Schematic
NPDES Permit# PA0003239
to Outfall 013
Beaver River
WASTEWATER TREATMENT PLANT
OUTFALL 113
DYE TANK
PICKLE HOUSE
COOLING TOWER
MANUFACTURING BUILDING
GRASS
PARKING AREA
GRASS
ROUTE 18
FENCE
FENCED PROPERTY LINE
PROPERTY LINE
STORM WATER DRAINAGE
PROCESS WATER
SAMPLING POINT
STORMWATER INLETS AND MANHOLE
DRAINAGE FLOW

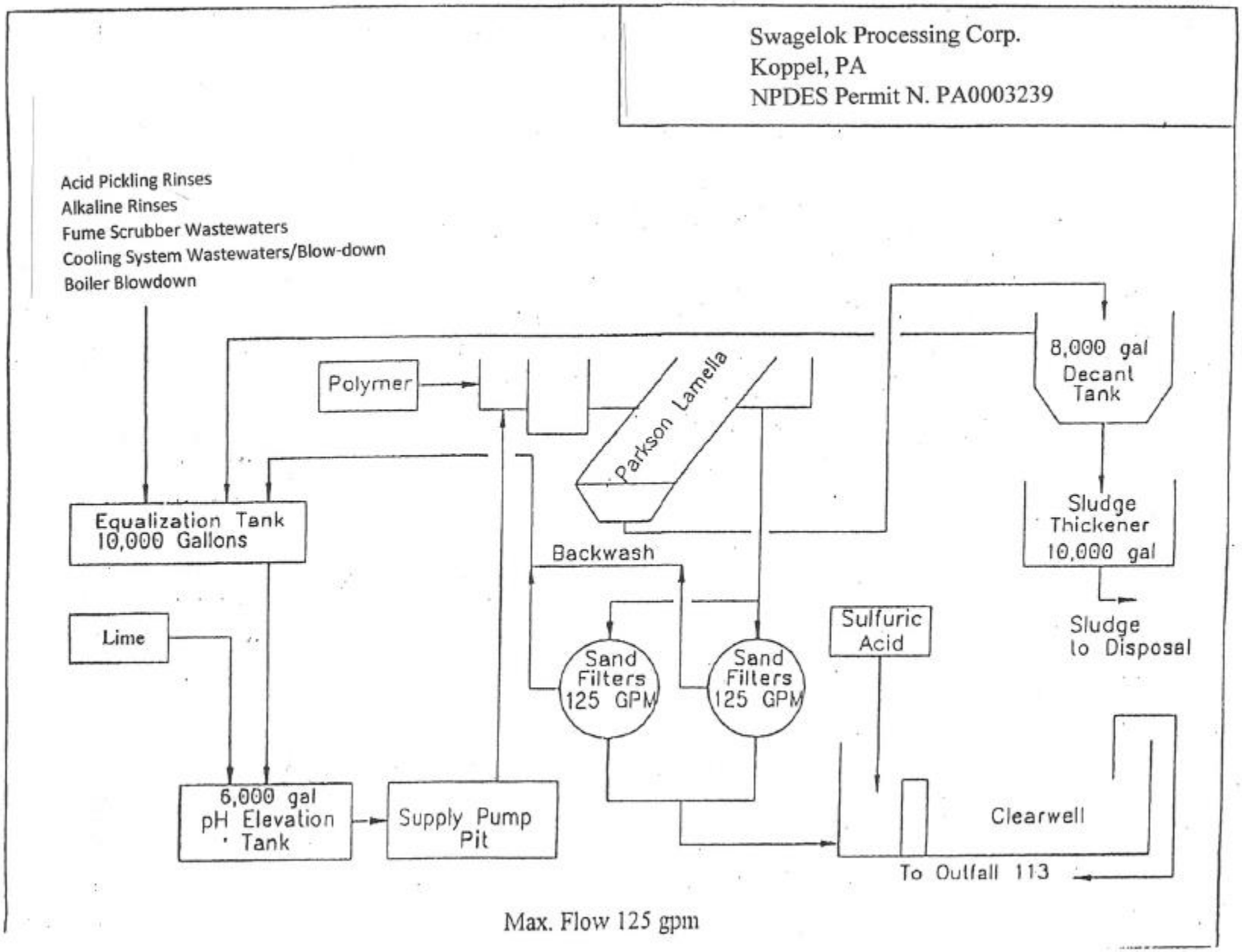
## Attachment H:

## Water Flow Schematic


Swagelok Processing Corp.
Koppel, PA
Water Flow Schematic
NPDES Permit #: PA0003239
City Water
Make-up
Evaporation
Evaporation
Cooling Tower
Blowdown
©
(6,100 gpd)
Fume Controls
(3)
(4,300 gpd)
Pickle House
Alkaline Cleaning &
Acid Pickling Ops.
(27,800 gpd)
Boilers
Blowdown
©
(3,600 gpd)
© - Chemical Additives
- Sample Point
WWTP
©
(Pickle House make-up)
Plant Stormwater
Outfall 113
Outfall 013
Beaver River

## Attachment I:

## Treatment System Process Flow Diagram


Swagelok Processing Corp.
Koppel, PA
NPDES Permit N. PA0003239
Acid Pickling Rinses
Alkaline Rinses
Fume Scrubber Wastewaters
Cooling System Wastewaters/Blow-down
Boiler Blowdown
Polymer
Parkson Lamella
8,000 gal Decant Tank
Equalization Tank 10,000 Gallons
Backwash
Sludge Thickener 10,000 gal
Sludge to Disposal
Lime
Sand Filters 125 GPM
Sand Filters 125 GPM
Sulfuric Acid
6,000 gal pH Elevation Tank
Supply Pump Pit
Clearwell
To Outfall 113
Max. Flow 125 gpm

## Attachment J:

## Iron and Steel Effluent Guidelines Development Document Concentration Tables

TABLE I-1
BPT CONCENTRATION AND FLOW SUMMARY
IRON AND STEEL INDUSTRY
PAGE 4

| Subcategory | | Discharge Flow (GPT) | BPT Effluent Concentrations (mg/l) TSS | O&G | Ammonia | Phenol (4AAP) | CN-T | $Cr^{+6}$ | Cr | Ni | Pb | Zn | Toxic Organics 55 | Toxic Organics 85 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Comb. Acid Pickling (Cont.) | | | | | | | | | | | | | | |
| Cont.-Strip, Sheet & Plate | Avg | 1500 | 30 | 10(1) | | | | | 0.4 | 0.3 | | | | |
| | Max | | 70 | 30(1) | | | | | 1.0 | 0.9 | | | | |
| Batch-Strip, Sheet & Plate | Avg | 460 | 30 | 10(1) | | | | | 0.4 | 0.3 | | | | |
| | Max | | 70 | 30(1) | | | | | 1.0 | 0.9 | | | | |
| Pipe, Tube & Other | Avg | 770 | 30 | 10(1) | | | | | 0.4 | 0.3 | | | | |
| | Max | | 70 | 30(1) | | | | | 1.0 | 0.9 | | | | |
| Fume Scrubber(2) | Avg | 15 GPM | 30 | 10(1) | | | | | 0.4 | 0.3 | | | | |
| | Max | | 70 | 30(1) | | | | | 1.0 | 0.9 | | | | |
| Cold Forming | | | | | | | | | | | | | | |
| Cold Rolling: Recir Single Stand | Avg | 5 | 30 | 10 | | | | | 0.4(3) | 0.3(3) | 0.15 | 0.1 | - | - |
| | Max | | 60 | 25 | | | | | 1.0(3) | 0.9(3) | 0.45 | 0.3 | 0.1 | 0.15 |
| Cold Rolling: Recir Multi Stand | Avg | 25 | 30 | 10 | | | | | 0.4(3) | 0.3(3) | 0.15 | 0.1 | - | - |
| | Max | | 60 | 25 | | | | | 1.0(3) | 0.9(3) | 0.45 | 0.3 | 0.1 | 0.15 |
| Cold Rolling: Combination | Avg | 300 | 30 | 10 | | | | | 0.4(3) | 0.3(3) | 0.15 | 0.1 | - | - |
| | Max | | 60 | 25 | | | | | 1.0(3) | 0.9(3) | 0.45 | 0.3 | 0.1 | 0.15 |
| Cold Rolling: Direct Appl. Single Stand | Avg | 90 | 30 | 10 | | | | | 0.4(3) | 0.3(3) | 0.15 | 0.1 | - | - |
| | Max | | 60 | 25 | | | | | 1.0(3) | 0.9(3) | 0.45 | 0.3 | 0.1 | 0.15 |
| Cold Rolling: Direct Appl. Multi Stand | Avg | 400 | 30 | 10 | | | | | 0.4(3) | 0.3(3) | 0.15 | 0.1 | - | - |
| | Max | | 60 | 25 | | | | | 1.0(3) | 0.9(3) | 0.45 | 0.3 | 0.1 | 0.15 |
| Pipe & Tube | Avg | 0 | | | | | | | | | | | | |
| | Max | | | | | | | | | | | | | |
| Alkaline Cleaning | | | | | | | | | | | | | | |
| Batch | Avg | 250 | 30 | 10 | | | | | | | | | | |
| | Max | | 70 | 30 | | | | | | | | | | |
| Continuous | Avg | 350 | 30 | 10 | | | | | | | | | | |
| | Max | | 70 | 30 | | | | | | | | | | |

TABLE A-2

LONG-TERM DATA ANALYSIS
FILTRATION SYSTEMS
TOTAL SUSPENDED SOLIDS

| Plant | Number of Sample Points | Average (mg/1) | Variability Factors | |
|---|---|---|---|---|
| | | | Average | Maximum* |
| 0112C-334 | 415 | 2.3 | 1.4 | 6.8 |
| 0112I-5A | 59 | 3.6 | 1.5 | 8.9 |
| 0112C-617 | 399 | 4.8 | 1.3 | 5.4 |
| 0684H-EF | 40 | 6.0 | 1.3 | 5.3 |
| 0112C-011 | 580 | 8.9 | 1.3 | 3.5 |
| 0112B-5A | 87 | 10.6 | 1.1 | 2.3 |
| 0384A-4L | 289 | 10.8 | 1.3 | 3.0 |
| 0112C-122 | 496 | 13.3 | 1.3 | 4.0 |
| 0384A-3E | 305 | 17.4 | 1.2 | 2.5 |
| 0684F-4I | 78 | 22.2 | 1.2 | 3.7 |
| Median Values | | 9.8 | 1.3 | 3.9 |

30-Day Average Concentration Basis = (9.8 mg/1) (1.3) = 12.7 mg/1

Daily Maximum Concentration Basis = (9.8 mg/1) (3.9) = 38.2 mg/1

---

Note: For the purposes of developing effluent limitations and standards, the following values were used for total suspended solids.

Average = 15 mg/1
Maximum = 40 mg/1

* For plants with more than 100 observations:

$$\text{Daily Variability Factor} = \frac{\text{99th Percentile}}{\text{Average}}$$

TABLE A-5
DERIVATION OF VARIABILITY FACTORS AND PROPOSED LIMITS
FILTRATION SYSTEMS
REGULATED METALLIC POLLUTANTS
PAGE 2

Derivation of Concentration Values

A. Chromium

30-Day Average Concentration Basis = (0.03)(1.3) = 0.04
Daily Maximum Concentration Basis = (0.03)(4.0) = 0.12

B. Copper

30-Day Average Concentration Basis = (0.03)(1.3) = 0.04
Daily Maximum Concentration Basis = (0.03)(4.0) = 0.12

C. Lead

30-Day Average Concentration Basis = (0.06)(1.3) = 0.08
Daily Maximum Concentration Basis = (0.06)(4.0) = 0.24

D Nickel

30-Day Average Concentration Basis = (0.04)(1.3) = 0.05
Daily Maximum Concentration Basis = (0.04)(4.0) = 0.16

E. Zinc

30-Day Average Concentration Basis = (0.10)(1.3) = 0.13
Daily Maximum Concentration Basis = (0.10)(4.0) = 0.40

Note: For the purposes of developing effluent limitations and standards, the following values were used for all metals except zinc:

Average = 0.10 mg/l
Maximum = 0.30 mg/l

For zinc, the following values have been used:

Average = 0.15 mg/l
Maximum = 0.45 mg/l

All concentration values are in mg/l.

TABLE A-7

CLARIFICATION/OIL SKIMMING SYSTEMS
OIL AND GREASE

| Plant | Number of Sample Points | Average (mg/l) | Variability Factors | |
|---|---|---|---|---|
| | | | Average | Maximum* |
| 0320-5A | 35 | 0.1 | 1.2 | 4.0 |
| 0584E | 853 | 1.6 | 1.2 | 3.7 |
| 0684F-5E | 5 | 2.8 | 1.1 | 2.3 |
| 0856D | 17 | 4.0 | 1.1 | 1.7 |
| 0860B | 260 | 4.8 | 1.1 | 3.3 |
| 0584A-5F | 98 | 5.9 | 1.2 | 6.7 |
| 0856N-5B | 103 | 7.0 | 1.1 | 2.0 |
| 0584B-5F | 58 | 8.4 | 1.2 | 2.9 |
| MEDIAN VALUES | | 4.4 | 1.2 | 3.1 |

30-Day Average Concentration Basis = (4.4 mg/l)(1.2) = 5.3 mg/l
Daily Maximum Concentration Basis = (4.4 mg/l)(3.1) = 13.6 mg/l

---

Note: For the purposes of developing effluent limitations and standards, the following values were used for oil and grease:

Average = 10 mg/l
Maximum = 30 mg/l

* For plants with more than 100 observations:

$$\text{Daily Variability Factor} = \frac{\text{99th Percentile}}{\text{Average}}$$

## Attachment K:

## NPDES Permit Rating Work Sheet

## *NPDES Permit Rating Work Sheet*

☐ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status change
☐ Deletion

NPDES No.: PA0003239

Facility Name: Swagelok Processing Corporation

City: Koppel, PA 16136

Receiving Water: Beaver River

Reach Number: _____

***Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?***

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 **(stop here)** ☑ NO (continue)

***Is this permit for a municipal separate storm sewer serving a population greater than 100,000?***

☐ YES; score is 700 **(stop here)**
☑ NO (continue)

### FACTOR 1:Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: 3317

Other SIC Codes: _____ _____ _____ _____

Industrial Subcategory Code: _____ (Code 000 if no subcategory)

***Determine the Toxicity potential from Appendix A.*** *(Be sure to use the TOTAL toxicity potential column and* ***check one****)*

| Toxicity Group | Code | Points | Toxicity Group | Code | Points | Toxicity Group | Code | Points |
|---|---|---|---|---|---|---|---|---|
| ☐ No process waste streams | 0 | 0 | ☐ 3. | 3 | 15 | ☐ 7 | 7 | 35 |
| ☐ 1. | 1 | 5 | ☐ 4. | 4 | 20 | ☐ 8. | 8 | 40 |
| ☐ 2. | 2 | 10 | ☐ 5. | 5 | 25 | ☐ 9. | 9 | 45 |
| | | | ☐ 6. | 6 | 30 | ☑ 10. | 10 | 50 |

Code Number Checked: 10

Total Points Factor 1: 50

### FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B;* ***check only one****)*

**Section A** - Wastewater Flow Only Considered

| Wastewater type (See Instructions) | | | Code | Points |
|---|---|---|---|---|
| Type I: | Flow < 5 MGD | ☐ | 11 | 0 |
| | Flow 5 to 10 MGD | ☐ | 12 | 10 |
| | Flow>10 to 50 MGD | ☐ | 13 | 20 |
| | Flow> 50 MGD | ☐ | 14 | 30 |
| Type II: | Flow<1 MGD | ☑ | 21 | 10 |
| | Flow 1 to 5 MGD | ☐ | 22 | 20 |
| | Flow >5 to 10 MGD | ☐ | 23 | 30 |
| | Flow>10 MGD | ☐ | 24 | 50 |
| Type III: | Flow <1 MGD | ☐ | 31 | 0 |
| | Flow 1 to 5 MGD | ☐ | 32 | 10 |
| | Flow >5 to 10 MGD | ☐ | 33 | 20 |
| | Flow >10 MGD | ☐ | 34 | 30 |

**Section B** - Wastewater and Stream Flow Considered

| Wastewater type (See Instructions) | Percent of Instream Wastewater Concentration at Receiving Stream Low Flow | | Code | Points |
|---|---|---|---|---|
| Type I/III: | <10% | ☐ | 41 | 0 |
| | ≥10% to <50% | ☐ | 42 | 10 |
| | ≥50% | ☐ | 43 | 20 |
| Type II | <10% | ☐ | 51 | 0 |
| | ≥10% to <50% | ☐ | 52 | 20 |
| | ≥50% | ☐ | 53 | 30 |

Code Checked from Section A or B: 21

Total Points Factor 2: 10

## *NPDES Permit Rating Work Sheet*

**FACTOR 3: Conventional Pollutants**
*(only when limited by the permit)*

NPDES No.: PA0003239

**A. Oxygen Demanding Pollutants** (check one) ☐ BOD ☐ COD ☐ OTHER: _____

| Permit Limits (**check one**) | | Code | Points |
|---|---|---|---|
| ☐ | <100 lbs/day | 1 | 0 |
| ☐ | 100 to 1000 lbs/day | 2 | 5 |
| ☐ | >1000 to 3000 lbs/day | 3 | 15 |
| ☐ | >3000 lbs/day | 4 | 20 |

Code Checked: ____
Points Scored: 0

**B. Total Suspended Solids (TSS)**

| Permit Limits (**check one**) | | Code | Points |
|---|---|---|---|
| ☑ | <100 lbs/day | 1 | 0 |
| ☐ | 100 to 1000 lbs/day | 2 | 5 |
| ☐ | >1000 to 5000 lbs/day | 3 | 15 |
| ☐ | >5000 lbs/day | 4 | 20 |

Code Checked: 1
Points Scored: 0

**C. Nitrogen Pollutants (check one)** ☐ Ammonia ☐ OTHER: _____

| Permit Limits (**check one**) | Nitrogen Equivalent | Code | Points |
|---|---|---|---|
| ☐ | <300 lbs/day | 1 | 0 |
| ☐ | 300 to 1000 lbs/day | 2 | 5 |
| ☐ | >1000 to 3000 lbs/day | 3 | 15 |
| ☐ | >3000 lbs/day | 4 | 20 |

Code Checked: ____
Points Scored: 0
Total Points Factor 3: 0

---

**FACTOR 4: Public Health Impact**

*Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.*

☑ YES (if yes, check toxicity potential number below)
☐ NO (**if no, go to Factor 5**)

*Determine the human health toxicity potential from Appendix A. Use the same SIC Code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column and **check one below**)*

| Toxicity Group | Code | Points | Toxicity Group | Code | Points | Toxicity Group | Code | Points |
|---|---|---|---|---|---|---|---|---|
| ☐ No process waste streams | 0 | 0 | ☐ 3. | 3 | 0 | ☐ 7. | 7 | 15 |
| ☐ 1. | 1 | 0 | ☐ 4. | 4 | 0 | ☐ 8. | 8 | 20 |
| ☐ 2. | 2 | 0 | ☐ 5. | 5 | 5 | ☐ 9. | 9 | 25 |
| | | | ☐ 6. | 6 | 10 | ☑ 10. | 10 | 30 |

Code Number Checked: 10
Total Points Factor 4: 30

## *NPDES Permit Rating Work Sheet*

**FACTOR 5: Water Quality Factors** NPDES No.: PA0003239

*A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge?*

| | Code | Points |
|---|---|---|
| ☐ YES | 1 | 10 |
| ☑ NO | 2 | 0 |

*B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

| | Code | Points |
|---|---|---|
| ☑ YES | 1 | 0 |
| ☐ NO | 2 | 5 |

*C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

| | Code | Points |
|---|---|---|
| ☐ YES | 1 | 10 |
| ☑ NO | 2 | 0 |

Code Number Checked: *A.* 2 *B.* 1 *C.* 2

Total Points Factor 5 *A.* 0 +*B.* 0 +*C.* 0 = 0

---

**FACTOR 6: Proximity to Near Coastal Waters**

*A. Base Score: Enter flow code here (from Factor 2):* 21

*Enter the multiplication factor that corresponds to the flow code:* 0.00

Check appropriate facility HPRI Code (from PCS):

| | HPRI# | Code | HPRI Score |
|---|---|---|---|
| ☐ | 1 | 1 | 20 |
| ☐ | 2 | 2 | 0 |
| ☐ | 3 | 3 | 30 |
| ☐ | 4 | 4 | 0 |
| ☐ | 5 | 5 | 20 |

| Flow code | Multiplication Factor |
|---|---|
| 11, 31, or 41 | 0.00 |
| 12, 32, or 42 | 0.05 |
| 13, 33, or 43 | 0.10 |
| 14 or 34 | 0.15 |
| 21 or 51 | 0.10 |
| 22 or 52 | 0.30 |
| 23 or 53 | 0.60 |
| 24 | 1.00 |

HPRI Code Checked:

Base Score (HPRI Score) 0 x (Multiplication Factor) 0.00 = 0 (Total Points)

*B. Additional Points – NEP Program*

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

| | Code | Points |
|---|---|---|
| ☐ YES | 1 | 10 |
| ☐ NO | 2 | 0 |

*C. Additional Points – Great Lakes Area of Concern*

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

| | Code | Points |
|---|---|---|
| ☐ YES | 1 | 10 |
| ☐ NO | 2 | 0 |

Code Number Checked: *A.* ___ *B.* ___ *C.* ___

Total Points Factor 6 *A.* 0 +*B.* 0 +*C.* 0 = 0

## *NPDES Permit Rating Work Sheet*

**Score Summary**

NPDES No.: PA0003239

| Factor | Description | Total Points |
|---|---|---|
| 1. | Toxic Pollutant Potential | 50 |
| 2. | Flow/Streamflow Volume | 10 |
| 3. | Conventional Pollutants | 0 |
| 4. | Public Health Impacts | 30 |
| 5. | Water Quality Factors | 0 |
| 6. | Proximity to Near Coastal Waters | 0 |
| | **TOTAL** (Factors 1 through 6) | 90 |

**S1**. Is the total score equal to or greater than 80? ☑ YES (Facility is a major) ☐ NO

**S2**. If the answer to the above question is no, would you like this facility to be discretionary major?

☐ NO

☐ YES (Add 500 points to the above score and provide reason below.

Reason: _____

**NEW SCORE**: 90

**OLD SCORE**: _____

Adam Olesnanik
Permit Reviewer's Name

(412) 442-4254
Phone Number

05/14/2019
Date

# Attachment L:

# ELG Limitation Calculations

**CONCENTRATION LIMITATIONS**

| Waste Stream | Contributing flow (MGD) | TSS (mg/L) | | OG (mg/L) | | Cr (mg/L) | | Ni (mg/L) | |
|---|---|---|---|---|---|---|---|---|---|
| | | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum |
| **Cooling Tower Blowdown** | 0.0061 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Fume Scrubber** | 0.0043 | 30 | 70 | 0 | 0 | 0.4 | 1 | 0.3 | 0.9 |
| **Acid Pickling & Alkaline Cleaning** | 0.0278 | 30 | 70 | 10 | 30 | 0.4 | 1 | 0.3 | 0.9 |
| **Boiler Blowdown** | 0.0036 | 30 | 100 | 15 | 20 | 0 | 0 | 0 | 0 |
| | **Total Flow (MGD)** | **Final Concentration Limits (mg/L)** | | | | | | | |
| **IMP 113 Concentration Limits** | 0.0418 | 25.6 | 62.4 | 7.94 | 21.7 | 0.307 | 0.768 | 0.230 | 0.691 |

Final Concentration Limit = [(Cooling Tower Blowdown Discharge Flow * Cooling Tower Blowdown Concentration Limit) + (Fume Scrubber Discharge Flow * Fume Scrubber Concentration Limit) + (Acid Pickling and Alkaline Cleaning Discharge Flow * Acid Pickling and Alkaline Cleaning Concentration Limit) + (Boiler Blowdown Discharge Flow * Boiler Blowdown Concentration Limit)] / (Total Combined Discharge Flow)

TSS Final Concentration Limit = [(0.0061 * 0) + (0.0043 * 30.0) + (0.0278 * 30.0) + (0.0036 * 30.0)] / (0.0418)

TSS Final Concentration Limit = 25.91

**MASS BASED LIMITATIONS**

| Waste Stream | TSS (lbs/day) | | OG (lbs/day) | | Cr (lbs/day) | | Ni (lbs/day) | |
|---|---|---|---|---|---|---|---|---|
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum |
| Cooling Tower Blowdown | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fume Scrubber | 16.2 | 37.8 | 0.00 | 0.00 | 0.216 | 0.542 | 0.162 | 0.486 |
| Acid Pickling | 1.69 | 3.94 | 0.00 | 0.00 | 0.0226 | 0.0564 | 0.0169 | 0.0506 |
| Alkaline Cleaning | 0.548 | 1.28 | 0.182 | 0.548 | 0.00 | 0.00 | 0.00 | 0.00 |
| Boiler Blowdown | 0.751 | 2.50 | 0.375 | 0.500 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total Load Allocations** | 19.2 | 45.5 | 0.56 | 1.05 | 0.239 | 0.598 | 0.179 | 0.537 |