

United States Steel Corporation
Midwest Consent Decree
March 14, 2019 Semi-Annual Report

This is the second semi-annual progress report that satisfies Section VIII Paragraph 18 of the Midwest Consent Decree (effective date March 1, 2018) which states the following:

“U. S. Steel shall submit a semi-annual progress report no later than March 15 and September 15 of each year, with the first semi-annual report due on the first March 15 or September 15 that occurs more than ninety (90) Days after the Effective Date. Each semi-annual report shall contain the following information with respect to, respectively, the half-year between July 1 and December 31, or the half-year between January 1 and June 30, commencing on the date of Entry of the Consent Decree:”

This semi-annual progress report covers the time period between July 1, 2018 and December 31, 2018.

- a) ***Identification of Work performed and progress made toward implementing the requirements of Section VI (Compliance Requirements), including a narrative description of activities undertaken, the status of any construction or compliance measures, and the completion of any milestones;***

Section VI, Paragraph 9.a-d items are complete.

Section VI, Paragraph 10.a-d items are complete.

As per Section VI, Paragraph 10.e, the results of the annual review and revisions to the O&M Plan will be documented in a revision log contained within the O&M Plan. The annual review has not been completed as of this writing but will be completed prior to April 13, 2019 as the O&M Plan was submitted for review and approval on April 13, 2018. The revisions will be summarized in the next semi-annual report.

As per Section VI, Paragraph 10.f, at the time of the next NPDES renewal application, U. S. Steel will request that the renewed permit include the requirements to develop, implement, and review the O&M Plan pursuant to Paragraph 10(a) – (e) of the Consent Decree.

Section VI, Paragraph 11.a-b are complete.

As per Section VI, Paragraph 11.c, U. S. Steel shall complete the installation of enhanced monitoring technologies and equipment and begin operating the enhanced wastewater process monitoring at the wastewater treatment works within 5 months of approval of the plan, which is May 28, 2019. See the Enhanced Monitoring Assessment Summary attachment for an update on status of each action item.

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As per Section VI, Paragraph 11.d, Within 5 months (May 28, 2019), the visual inspection and maintenance of enhanced wastewater process monitoring equipment will be incorporated into the O&M Plan.

As per Section VI, Paragraph 11.e, U. S. Steel is maintaining the results of the enhanced wastewater process monitoring in accordance with its NPDES Permit.

Section VI, Paragraph 12.a item is complete. The Paragraph 12.b item will be included at the time the NPDES permit renewal application is submitted.

b) *Any significant problems encountered or anticipated in complying with the requirements of Section VI (Compliance Requirements), including implemented or proposed solutions;*

The Chemsan inline hexavalent chromium monitoring trials at the Final Treatment Plant determined that the units are not capable of the required detection limits or general accuracy to identify possible permit exceedances at this location.

The Chemsan inline hexavalent chromium monitoring trials are now assessing the detection capabilities at the Chrome Treatment Plant and heat exchangers. See the Enhanced Monitoring Assessment Summary attachment for details at each location. Those items in bold are the remaining tasks U. S. Steel is completing.

c) *Identification and description of all non-compliance with any of the requirements under Section VI (Compliance Requirements), including description of the likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such noncompliance;*

There were no issues of non-compliance with any of the requirements under Section VI (Compliance Requirements) of the Consent Decree from the period of July 1, 2018 through December 31, 2018.

d) *A statement of any exceedances of its NPDES Permit limitations;*

There were no NPDES Permit limitation exceedances at the Midwest Plant for the period of July 1, 2018 through December 31, 2018.

e) *A summary of any spills and unpermitted Discharges occurring within the reporting period, and reported pursuant to the requirements included in Appendix B of this Decree, including the actual or estimated frequency, duration, and volume of each spill, unpermitted discharge or Permit limit exceedance; and*

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There were no spills that occurred at the Midwest facility between July 1, 2018 and December 31, 2018.

During the period of July 1, 2018 through December 31, 2018, there were two incidents of foaming action that occurred at Outfall 004. The first incident occurred on November 28, 2018 and the second occurred on December 18, 2019. See the attached 5-day letters for more detail on the incidents. Also attached is a 30-day response stemming from IDEM's inspection related to the above incidents. It was determined that there was no unpermitted discharge or permit limit exceedance related to these events, but rather an insufficient delivery of anti-foam chemical. No unauthorized or bypassed material was released from the facility.

f) *The results of any O&M Plan review, conducted pursuant to paragraph 10, completed within the reporting period.*

Revisions to the O&M plan during this report period were made to address EPA and IDEM's concerns. The O&M revision log is attached to this report and below is a summary of the revisions made relative to EPA and IDEM comments. The first annual review pursuant to paragraph 10 will be conducted prior to April 15, 2019 and will be included in the next semi-annual report.

10/4/2018 revision

- II.B.5, II.C.5, II.D.5, II.E.5 – Added lubrication to Preventative Maintenance Program
- VIII – Added Appendices section and Appendix IV

10/26/2018 revision

- II.D.5 – Motor thermal testing changed from semi-annual to quarterly
- VI - Modified language in Preventative Maintenance Plan section

11/14/2018 revision

- II.A – Incorporated language regarding key equipment
- II.G – Added a section on training
- VI – Modified language in Preventative Maintenance Plan section

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false

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information, including the possibility of fine and imprisonment for knowing violations. This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

Signature: 

Name: Alexis S. Piscitelli

Title: Director, Environmental, Great Lakes and Midwest

Date: March 14, 2019

ATTACHMENTS

1. Enhanced Monitoring Assessment Summary Update
2. Five Day Letter – Foam Incident 11/28/18
3. Five Day Letter – Foam Incident 12/18/18
4. IDEM Inspection Summary Response
5. O&M Manual/Preventative Maintenance Program Plan Revision Log

**United States Steel Corporation - Midwest Plant
Enhanced Monitoring Assessment Summary**

UPDATE FOR SEMI-ANNUAL REPORT

As required by Paragraph 11(a) of the March 2018 Consent Decree, U. S. Steel completed an evaluation the Midwest Plant Facility (Midwest). That investigation included a review of enhanced monitoring technologies and equipment for early detection of conditions that may lead to spills such as the April 11, 2017 Spill, and conditions that may lead to unauthorized discharges in exceedance of Permit limits, at Midwest's wastewater treatment works.

This table provides the summary for all improvements made and/or to be made at the Midwest Facility as a result of the Enhanced Monitoring Assessment. The evaluation was developed from documented technologies and equipment, but the design may change based off of actual performance of equipment once installed.

Investigation of Enhanced Monitoring Technologies and Equipment

Equipment Area	Issue	Correction/Investigation	Action Plan	Status of Completion as of March 14, 2019
Chrome containment trench	Trench concrete floor integrity is deteriorated.	Clean trench and evaluate required repairs.	The trench was cleaned, reformed bottom with new concrete. Trench slope re-established to direct flow into the sump.	The trench was cleaned, and the bottom was reformed with new concrete. Trench slope re-established to direct flow into the sump.
Chrome containment trench	Trench concrete protective coating has failed.	Chemical resistant protective epoxy coating to be installed over bottom and sides of the trench.	Developing schedule subject to atmospheric conditions. Date of application weather dependent.	The protective epoxy coating was applied.
Chrome containment trench	Installation of flow meters on chrome transfer pipeline will allow for indication of a leak.	Install flow meters (1 inlet and 1 outlet) on chrome transfer pipeline.	Completed installation. Ongoing evaluation of flow variances to alert and the appropriate alarm levels.	Evaluation of flow variances is complete. Determination of alert/alarm level is ongoing.
Chrome containment trench sump	Small pipeline leaks may not be obvious by comparing flowmeter differences.	Install conductivity probe to help detect potential small leaks of chrome wastewater from pipeline.	Install probe. Connect output to plant alert/alarm system. Establish response procedures.	Probe was installed and output connected to plant system. Probe is currently operating, however the normal sump conductivity is higher than the readings of chrome bearing wastewater in the pipeline. Evaluation of trench sump conductivity/alert/alarm level applicability is ongoing. The routine testing of the sump for chrome by the Chrome Plant Operators would be a better identifier of a pipeline leak of the low conductivity chrome wastewater. A more significant leak would be detected by the flow meter differential and/or the trench sump high level switch, both of which will initiate an alert/alarm.
Chrome containment trench sump	Confirm conductivity probe readings.	Chrome Plant Operator to test sump contents once per day.	Incorporate bench testing of sump contents for hexavalent chrome. Establish response procedures.	Operators conducting bench testing of sump for hex chromium at least once per day. Operator follows SOP NSCS-M-P-7093-02-11.
Chrome containment trench sump	Failure of sump pump could cause chrome containment trench overflow to ground.	Install high level float to trigger alarm.	Install float. Determine alarm response actions.	Float was installed. When a high level alarm is triggered, operator visually verifies high level condition and follows SOP NSCS-M-P-7093-02-11.
Chrome containment trench	Need to establish regular visual inspection of the integrity of the trench and pipeline running through the trench.	Develop inspection form. Schedule personnel to visually inspect the trench.	As additional monitoring steps are established continue to revise inspection functions and frequencies. Annually perform a detailed trench inspection and perform necessary repairs.	Conducting detailed trench inspection annually.
Final Treatment Plant Discharge	Monitor plant effluent for hexavalent chrome presence.	Have Final Treat Operator test for hexavalent chrome.	Initiate once daily testing for hexavalent chrome bench testing to be performed by the Final Treat Operator.	Bench testing is conducted daily.

**United States Steel Corporation - Midwest Plant
Enhanced Monitoring Assessment Summary**

UPDATE FOR SEMI-ANNUAL REPORT

<i>Equipment Area</i>	<i>Issue</i>	<i>Correction/Investigation</i>	<i>Action Plan</i>	<i>Status of Completion as of March 14, 2019</i>
Final Treatment Plant Discharge	Inability to detect hexavalent chromium outside of laboratory analysis.	Install online hexavalent chromium monitoring equipment. Bench testing Final Treat effluent water indicates successful hexavalent chrome detection.	Purchase ChemScan Unit(s), determine location for installation. Field trial unit to confirm proper operation. If field testing successful establish alarm levels and required response.	The first unit trialed was MetalGuard by Aqua Metrology Systems. This unit was unreliable and had multiple interferences. The second unit that was trialed is the Chemscan unit. The trial results indicate that the unit is not capable of reliably detecting hexavalent chromium to $\leq 6 \mu\text{g/L}$, the concentration equivalent to the effluent mass loading limit of 0.51 lbs/day. Spiked samples to determine accuracy and possible interferences did not resolve the detection accuracy. Although the Final Treat wastewater used in the trial is compliant and within NPDES limits, constituents found in the discharge water are interfering or interacting with the detection method and equipment capability. The trial is now completed and the Chemscan unit has been determined to not be a viable option at Final Treat.
Chrome Plant Discharge	Inability to detect/monitor for hexavalent chromium continuously.	Investigate installation of ChemScan Unit(s) with online hexavalent chromium monitoring capability.	Further investigate interference(s) in Chrome plant effluent using matrix spikes. If poor bench testing results can be resolved then install unit to monitor plant effluent. Determine alarm levels and required response.	The Chemscan unit has been moved to the onsite laboratory. Trials of the Chrome Treatment Plant discharge are ongoing.
Chrome Line Plater and Chemtreat Heat Exchangers	Testing frequency of non-contact cooling water from ChemTreat and Plater heat exchangers.	Heat exchanger non-contact cooling water is tested once a week for hexavalent chrome in onsite laboratory.	Increase frequency of onsite laboratory testing of non-contact cooling water from the ChemTreat and Plater heat exchangers to once a day.	Testing of heat exchangers is conducted daily.
Chrome Line Plater and Chemtreat Heat Exchangers	Inability to detect hexavalent chromium outside of laboratory analysis.	Consider installation of ChemScan Unit(s) with online hexavalent chromium monitoring of non-contact cooling water as an alternative to once a day onsite lab testing.	Research potential location and number of units for installation. If field testing is successful, tie into plant alert/alarm system. Determine alarm levels and train personnel to implement required response.	The Chemscan unit has been moved to the onsite laboratory. Trials of the heat exchanger discharge are ongoing.
Chrome Line Evaporators	Evaporator operating parameters are not monitored to shut down unit to prevent overflow to chrome wastewater system.	Install redundant level sensors that will detect high-high levels in the evaporator.	The level sensors will initiate commands for various shutdown steps.	Level sensors are installed.
Chrome Line Evaporators	Evaporator operating parameters are not monitored to shut down unit to prevent overflow.	When high-high level detected stop flow of solution to evaporator.	Install a relay to open the vacuum breaker valve which will prevent the vaporator from drawing solution into the vessel.	Installed the relay to open the vacuum breaker.
Chrome Line Evaporators	Evaporator operating parameters are not monitored to shut down unit to prevent overflow.	When high-high level detected stop flow of solution to evaporator.	Install an interlock to shut down pumps that feed solution to the evaporators.	Interlock was installed.
Chrome Line Evaporators	Evaporator operating parameters are not monitored to shut down unit to prevent overflow.	When high-high level detected empty the vessel.	Send a signal to the vessel solution level control valve to force it 100% open. This will allow the Return Pumps to pull solution out of the vessel and return it to the storage tank.	Signal to control valve established.
Final Treatment Plant	Local alarms are not relayed back to plant alert/alarm system.	Determine with Process Control Department what equipment may need to be installed to relay signals into the plant alert/alarm system.	Evaluate which monitoring points should be integrated into the system. Review hardware and software requirements to deliver signals.	Key parameters have been assigned acceptable process ranges and are incorporated into the following response procedure NSCS-M-P-7093-02-47.

**United States Steel Corporation – Midwest Plant
Enhanced Monitoring Assessment Summary**

UPDATE FOR SEMI-ANNUAL REPORT

Equipment Area	Issue	Correction/Investigation	Action Plan	Status of Completion as of March 14, 2019
Final Treatment Plant Effluent	Are there other tests and equipment that would be beneficial to implement and install to add in treatment?	Review NPDES limits and average results to identify other parameters that would benefit effective treatment.	Study plant performance effectiveness indicators. Investigate options to monitor important parameters for treatment control. Work with our treatment chemical vendor and consultant to review improved equipment, controls and chemical additives.	Options are included in the Enhanced Wastewater Process Monitoring Design.
Tin Line ChemTreat sump	If the existing conductivity probe should experience calibration drift the sump shutdown controls may not function properly.	Install an additional conductivity probe in the sump.	Install an additional conductivity probe which will act independently of the existing probe to alert for high chrome concentrations and shutdown sump pumps.	Probe was installed.
Chrome Line Plater sump	If the existing conductivity probe should experience drift from calibration the sump shutdown controls may not function properly.	Install an additional conductivity probe in the sump.	Install an additional conductivity probe which will act independently of the existing probe to alert for high chrome concentrations and shutdown sump pumps.	Probe was installed.
Chrome Line Plater sump	Chrome wastewater enters the sump from 2 separate areas. The existing conductivity probe may not detect high chrome concentrations quickly.	Install an additional conductivity probe in the sump.	Install an additional conductivity probe so that each influent source can be monitored rapidly. This will allow a detection of high chrome concentration from either influent source and shutdown the sump pumps. Each probe will act independently to alert for high chrome concentrations and shutdown sump pumps.	Probes were installed.

Potential Unauthorized Discharges

Equipment Area	Issue	Correction/Investigation	Action Plan	Status of Completion as of March 14, 2019
Tin Line Annex	Leaking acid tanks could discharge large volume of acid to open top of DIW vault. The surge of acid could upset treatment at Final Treat.	Repair eroded concrete around top of DIW vault to prevent acid leaks from accessing the vault.	Arrange for contractor to perform repair to the DIW vault.	Repairs to vault were completed eliminating access point
Tin Line Looper Pit Sump	Split of discharge piping configuration will direct the discharge to either Final Treat via the DIW system or the Chrome Plant. Discharge potentially contains hexavalent chromium.	Prevent discharge from the sump to the DIW system.	Modify the piping system to eliminate access to the DIW system.	Piping modifications were completed

Discharges in Exceedance of Permit Limits

Equipment Area	Issue	Correction/Investigation	Action Plan	Status of Completion as of March 14, 2019
Chrome Plant Lamellas	Turbidimeter measures one effluent trough, no monitoring of other two. Solids may be carried over without detection.	Install a turbidimeter in each trough (purchase two additional turbidimeters for each train).	Completed installation of the additional turbidimeters. Determine alarm levels and required response.	Turbidimeters were installed. Alarms and responses are automated.

**United States Steel Corporation - Midwest Plant
Enhanced Monitoring Assessment Summary**

UPDATE FOR SEMI-ANNUAL REPORT

<i>Equipment Area</i>	<i>Issue</i>	<i>Correction/Investigation</i>	<i>Action Plan</i>	<i>Status of Completion as of March 14, 2019</i>
Chrome Plant Lamellas	Safety and ergonomic difficulty in accessing lamella plates for maintenance and cleaning.	Extend the access platform to allow operators safe access to the entire lamella plate and effluent trough area.	Additional platforms have been installed. Evaluate if additional improvements are necessary so operators can properly service the Lamellas.	Additional platforms were installed for operator access.
Chrome Line Heat Exchangers	Single-walled heat exchangers developed leak into non-contacting cooling water side.	Replace the single-walled heat exchangers with double-walled heat exchangers.	Completed - replacement of ChemTreat single walled HX. Outstanding - Install backup double walled ChemTreat and Plater heat exchangers.	Completed - replacement of ChemTreat and Plater single walled HX. And double walled redundants.



United States Steel Corporation – Midwest Plant
U. S. Highway 12
Portage, IN 46368

VIA ELECTRONIC SUBMITTAL

December 3, 2018

David Greinke
Office of Water Quality
Indiana Department of Environmental Management (IDEM)
100 North Senate Avenue – Post Office Box 6015
Indianapolis, IN 46206

Subject: United States Steel Corporation Gary Works – Midwest Plant
NPDES Permit IN0000337
Foaming at Outfall 004

Dear Mr. Greinke:

This letter is the written five-day submission regarding foaming at Outfall 004 at the U. S. Steel Corporation – Midwest Plant (“Midwest”) which occurred on November 28, 2018. Outfall 004 is a permitted outfall to the Portage-Burns Waterway under NPDES Permit IN0000337 effective April 1, 2016. Outfall 004 sources includes the Final Treatment Plant (internal Outfall 104) and the Chrome Treatment Plant (internal Outfall 204). As described below, the foam was found to be due to insufficient defoamer addition, and was not attributed to any pollutant regulated under the NPDES permit, including chromium.

On November 28, 2018 IDEM visited the Midwest facility outfalls in response to a public report of a “white discharge” to Burns Waterway from the facility, which was submitted to IDEM on that same day. David Greinke, IDEM Emergency Response, contacted Midwest regarding the report at approximately 1:37 p.m. and arrived at the facility at approximately 1:45 p.m. Mr. Greinke and a Midwest Environmental Manager observed Outfall 004 and saw evidence of foam extending approximately 40 yards into the Burns Waterway before dissipating. Midwest Environmental attempted to collect a grab sample of the foam, but by the time personnel were able to access the waterway for sampling, the foam was no longer present in the receiving stream. A grab sample was collected at Outfall 004 and analyzed for surfactants by a third-party laboratory. The result of the analysis is attached.

The effluent discharge channel of the Final Treatment Plant (internal Outfall 104) was observed with no visible indication of foaming. A 24-hour composite sample and a grab sample were collected and expedited for analysis by Midwest’s contracted third-party laboratory. Both results were found to be non-detect for hexavalent chromium and well below permit limits for all other constituents.

U. S. Steel made notification to the National Response Center as is required in the current draft of the Operations and Maintenance Plan Appendix B This notification was made at approximately 4:15pm, and complied with both permit requirements and the current Operations and Maintenance Manual Notification List. IDEM was already made aware through the phone call and site visit.

On November 29, 2018 David Greinke, Nick Ream (IDEM NPDES inspector), and Rick Massoels (IDEM Deputy Director) visited Midwest again as a follow up. There was no foaming observed at Outfall 004. U. S. Steel made several observations of Outfall 004 throughout the day on November 29th, and on subsequent days as well, and has not observed any more foaming.

Upon completion of the initial observation and sampling efforts on November 28th, U. S. Steel began an investigation into the cause of the Outfall 004 foam, and continues to evaluate the potential interactions between the Outfall 004 and Burns Waterway. The Chrome Treatment Plant was found to be operating normally. Internal process monitoring indicated no issues or elevated chromium levels. The Final Treatment Plant was operating normally.

If you have any questions about this matter, please call me at (313) 749-3900 or email me at APiscitelli@uss.com.

Sincerely,



Alexis Piscitelli
Director – Environmental Compliance
United States Steel Corporation
Great Lakes Works, Midwest Plant

cc: Nicholas Ream, IDEM
Tim Sullivan, U. S. Steel
Eric Williams, U. S. Steel
Nicole Benoit, P.E., U. S. Steel



United States Steel Corporation – Midwest Plant
U. S. Highway 12
Portage, IN 46368

VIA ELECTRONIC SUBMITTAL

December 21, 2018

Mr. Nicholas Ream
Office of Water Quality
Indiana Department of Environmental Management (IDEM)
100 North Senate Avenue – Post Office Box 6015
Indianapolis, IN 46206

Subject: United States Steel Corporation Gary Works – Midwest Plant
NPDES Permit IN0000337
Foaming at Outfall 004

Dear Mr. Ream:

This letter is the written five-day submission regarding foaming at Outfall 004 at the U. S. Steel Corporation – Midwest Plant (“Midwest”) which occurred on December 18, 2018. Outfall 004 is a permitted outfall to the Portage-Burns Waterway under NPDES Permit IN0000337 effective April 1, 2016. Outfall 004 sources includes the Final Treatment Plant (internal Outfall 104) and the Chrome Treatment Plant (internal Outfall 204). As described below, the foam was found to be due to insufficient defoamer addition, and was not attributed to any pollutant regulated under the NPDES permit, including chromium.

On December 18, 2018 IDEM visited the Midwest facility outfalls in response to a public report of foaming emanating from the facility to Burns Waterway, which was submitted to IDEM on that same day. Mr. Ream and Mr. Rick Mossoels from IDEM arrived at the facility at approximately 11:00 a.m. Mr. Ream, Mr. Mossoels and a Midwest Environmental Manager observed Outfall 004 and saw evidence of slight foaming that lasted approximately 30 seconds extending approximately 10 feet into the Burns Waterway before dissipating. No samples were taken due to the short duration of the incident. A 24-hour composite sample and a grab sample were collected and expedited for analysis of NPDES effluent limitations by Midwest’s contracted third-party laboratory. Both results were found to be non-detect for hexavalent chromium and well below permit limits for all other constituents.

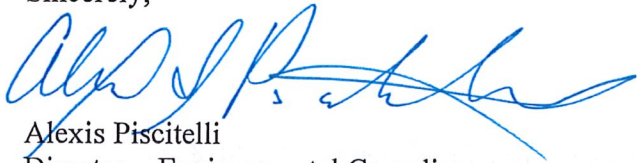
U. S. Steel made notification to the National Response Center as is required in the current draft of the Operations and Maintenance Plan Appendix B for a non-compliance with the narrative standards of the NPDES permit. This notification was made at approximately 3:40 pm on December 18, 2018, and complied with both the permit requirements and the current Operations and Maintenance Manual Notification List. IDEM was already made aware through the phone call and site visit.

U. S. Steel made several observations of Outfall 004 throughout the day on December 18th, and on subsequent days as well, and has not observed another narrative standard non-compliance incident since that date.

As corrective actions for the previous November 28th, 2018 foaming incident, U. S. Steel has installed a redundant defoaming system at Outfall 004 that includes a new PolyBlend mixing and pumping system. U. S. Steel is still in the process of optimizing the defoamer system feed rates required to mitigate the potential of foaming at Outfall 004. It is believed that the defoamer addition at the time of the December 18th incident was marginal, so the feed rates were adjusted accordingly. U. S. Steel will continue to monitor and optimize the defoam feed system. Increased observations of Outfall 004 will continue during this process so that chemical feed adjustments are made quickly and the potential of a subsequent non-compliant event is minimized.

If you have any questions about this matter, please call me at (313) 749-3900 or email me at APiscitelli@uss.com.

Sincerely,



Alexis Piscitelli
Director – Environmental Compliance
United States Steel Corporation
Great Lakes Works, Midwest Plant

cc: Nicholas Ream, IDEM
Tim Sullivan, U. S. Steel
Eric Williams, U. S. Steel
Nicole Benoit, P.E., U. S. Steel



United States Steel Corporation – Midwest Plant
U. S. Highway 12
Portage, IN 46368

VIA ELECTRONIC SUBMITTAL

January 11, 2019

Bridget S. Murphy
Office of Water Quality
Indiana Department of Environmental Management (IDEM)
100 North Senate Avenue – Post Office Box 6015
Indianapolis, IN 46206

Subject: United States Steel Corporation – Midwest Plant
NPDES Permit IN0000337
Inspection Summary / Noncompliance Letter

Dear Ms. Murphy:

This letter is the written response to the inspection summary for November 29, 2018 and December 3, 2018 at the U. S. Steel Corporation – Midwest Plant (“Midwest”). The inspection summary, dated December 12, 2018 requested the detailed response documenting correction of the concerns and/or a plan for assuring future compliance be submitted to the Department within 30 days of receipt of the letter. The Department’s concerns and U. S. Steel’s corrective actions are detailed below.

The referenced inspection was conducted in response to an anonymous complaint that was made to the IDEM Spill Line on November 28th, 2018 which was forwarded to Dave Greinke of IDEM. Mr. Greinke observed Outfalls 003 and 004 on November 28th. Foaming action was observed at Outfall 004 as well as some minor foaming action at Outfall 003. Outfall 004 is a permitted outfall to the Portage-Burns Waterway under NPDES Permit IN0000337 effective April 1, 2016. Outfall 004 sources includes the Final Treatment Plant (internal Outfall 104) and the Chrome Treatment Plant (internal Outfall 204), as well as non-contact cooling water and stormwater. Outfall 002 and 003 are permitted to discharge non-contact cooling water and stormwater.

The following day, November 29th, Mr. Greinke, along with Nick Ream and Rick Massoels of IDEM observed Outfalls 002, 003 and 004. No foaming action was observed on the 29th by IDEM during their inspection, however IDEM was notified by the National Parks Service that an alleged intermittent discharge of foaming action from Outfall 004 did occur in the afternoon on the 29th. This was attributed to Midwest operators adjusting the defoamer feed rate to optimize the delivery system. A third visit by IDEM was conducted on December 3, 2018. No foaming action issues were observed at the time.

A U. S. Steel representative collected a sample of the Outfall 004 discharge on November 28th which was analyzed for surfactants and oil and grease. No surfactants were detected, and the oil and grease concentration was within normal operating ranges. Additionally, U. S. Steel received the routine NPDES 24-hour composite sample and grab sample results which were all below permit limits for all the constituents, including hexavalent chromium. Both the Chrome Treatment Plant and Final Treatment Plant internal process monitoring logs indicated normal operations with no issues. There were no spills or leaks that occurred in the facility during this time frame that would have contributed to the foaming action. U. S. Steel's investigation concluded the foaming action in the turbulent discharge was due to an insufficient defoamer feed rate for the receiving water conditions at the time of discharge.

U. S. Steel made numerous observations of Outfall 004 and the Burns Waterway throughout the day beginning on November 28th and extending for several days after. Midwest installed a new redundant defoamer PolyBlend mixing system and pump skid shortly after the incident, and the system is now operational. U. S. Steel increased the defoamer addition rate within the IDEM approved dosing range, and has also requested an increase in chemical additive dosing rate from IDEM to account for variable conditions in the receiving water. While optimizing the new pump skid and defoamer addition rate, U. S. Steel will continue to operate the new and existing defoamer skids to ensure sufficient defoamer is introduced to the system, and will continue to work to optimize an efficient dosage rate.

U. S. Steel has proactively requested chemical additive approval to dose ChemTreat FO120 defoamer at Outfalls 002 and 003 as well. U. S. Steel is currently evaluating the feasibility of installing and operating pump skids at these locations.

If you have any questions about this matter, please call me at (313) 749-3900 or email me at APiscitelli@uss.com.

Sincerely,



Alexis Piscitelli
Director – Environmental Compliance
United States Steel Corporation
Great Lakes Works, Midwest Plant

- cc: Nicholas Ream, IDEM
- Tim Sullivan, U. S. Steel
- Eric Williams, U. S. Steel
- Nicole Benoit, P.E., U. S. Steel

REVISION LOG

Revision Number	Revision Date	Sections Revised
0	04/13/2018	Initial Plan
1	06/26/2018	II.B.4, II.C.4, II.D.4, II.E.4, III, IV, V, VI, VII,
2	10/04/2018	II.B.5, II.C.5, II.D.5, II.E.5, VIII, Appendix IV
3	10/26/2018	VI, II.D.5
4	11/14/2018	II.A, II.G, VI