Manila
Levy Plant 6
B4243

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B424358665

FACILITY: EDW C LEVY CO PLANT 6		**SRN / ID:** B4243
LOCATION: 13800 MELLON AVE, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Matt Perko , Environmental Engineer		**ACTIVITY DATE:** 06/22/2021
STAFF: Katherine Koster	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY2021 - Targeted Inspection		
RESOLVED COMPLAINTS:		

Reason for Inspection: Targeted Inspection
Level of Inspection: PCE
Inspected by: Katie Koster, AQD; Jon Lamb, AQD
Personnel Present: Matt Perko, Corporate Environmental Engineer; Tom Green, Corporate Director EHS
Facility phone number: 313-820-4057

FACILITY BACKGROUND

Edw C. Levy Co. Plant 6 is a support facility for Cleveland Cliffs (forrmerly, AK Steel – Dearborn Works and Severstal Dearborn, LLC). All of the plant operations are entirely dependent on AK Steel. The plant operates 24 hours a day, 7 days a week, and handles and processes steel slag such as BOF slag, runway/pit slag, caster/tundish slag, and other miscellaneous slag generated by the AK Steel mill. Blast furnace (BF) slag is not processed here; it is processed at the BF slag pits at Miller and Dix by Levy Co. and desulfurization slag is processed at the recently installed desulfurization slag/kish pot watering station (PTI 70-13). The blast furnace slag pits and kish watering station are not considered part of Plant 6; they are included in Section 2 of the AK Steel ROP. At Plant 6, all metallics are separated from the slag, crushed, screened, and returned to Cliffs. The non metallic portion of the slag is conveyed across the Rouge River to Mellon Street. On the Mellon Street side of the operations, the non metallics are separated into different sizes by screening and sold by Levy.

REGULATORY ANALYSIS

Although this site is a support facility to Cliffs, it was negotiated through a court order that the facility be issued its own ROP. Below is an excerpt from the existing ROP staff report (the Severstal name is used because that was the owner of the facility when this was decided):

"Under Rule 336.1119(r), Edw. C. Levy Co. Plant 6 and the Severstal North America, Inc. are determined and treated as a single stationary source and therefore Edw. C. Levy Co., Plant 6 was originally aggregated in the Severstal North America, Inc.'s Title V permit as Section 2. However, through negotiations that arose from the court judgment of the suit filed by the company against the AQD contesting the aggregation of the Levy Plant 6 with the Severstal ROP, Edw. C. Levy Co., Plant 6 agreed to submit a separate ROP application and will be issued its own ROP." As such, the facility has its own ROP. Plant 6 reports annual emissions under MAERS but it only pays emissions fees and not the facility fee.

Facility is operating under its own Wayne County fugitive dust SIP consent order 18-1993 revised 9/9/94 which is included in the ROP. The ROP was renewed in 2016. A renewal application for the 2016 ROP has been submitted and the application shield was granted.

New Source Performance Standards (NSPS)

The facility is not subject to Subpart OOO. Slag is not considered a non metallic mineral. See file for EPA applicability determination.

I reviewed the list of source categories for NSPS. No other NSPS appear to apply. The regulation for metallic mineral processors (Subpart LL) relates to mining and recovery of materials from ore which is not the situation at Plant 6.

NESHAP/MACT

Facility did not include any MACT subject equipment, such as generators, in the 2016 ROP application. I did not observe this type of equipment while on site.

PROCESS OVERVIEW

The Levy Plant 6 operation handles all of Cliffs steel slag. The steel slag is collected in slag pots from Cliffs Basic Oxygen Facility (BOF). The slag is conveyed by Levy using motorized pot carriers to the EUBOFSLAGPIT where it is poured into one of three pits for air and water cooling before processing. There is fourth pit designated for caster slag. After a pit is full, it is quenched with water sprays for about 16-24 hours. It is very important that during the dumping of molten slag, the area is free of water due to the potential for a thermal explosion. The temperature of the slag and molten steel causes any standing water to instantly expand into steam and the water-slag mixture will "explode". During normal routine steel making operations at the Cliffs BOF Shop, Levy collects and dumps 12 to 16 slag pots per 8-hour shift and digs this dumped slag after 16-24 hours. From the pit, slag is moved by front end loader to another area (aka the watering hole) where it is sprayed with more water. **Previously, the cooled slag was then moved to the staging area for loading into the screening/crushing process. Slag moved through a series of conveyors and screens to remove the metallics on the "Dearborn side" of the plant. Anything metallic from 6 to 60 inches is returned to the mill for reuse. The non metallic portion of the slag was conveyed across the river in the "bridge conveyor" for crushing and separation into various sizes.

However, since the plant shutdown from approximately April – July 2020, the screening equipment on the Dearborn side, the bridge conveyor over the river, and the screening and crushing equipment on the Mellon Street side has all been removed. Now, cooled BOF slag is dug with a front end loader and loaded into trucks for transport off site.

The pot knocking station is still in use. Slag pots usually contain some steel as it is impossible to get a complete separation of steel and slag when tapping a heat at the BOF. After dumping the molten slag out of the pot, a hard accumulation of cooled steel mixed with slag usually remains at the bottom and sides of the pot which is called a "skull". To remove this accumulation, the pot carrier moves to the skull knocking station, tips the pot, and bangs it on the wall of the pit. During the banging, the red-hot skull dislodges from the pot and falls into the pit. This can create a cloud of fugitive emissions. A partial enclosure was constructed at the skull knocking pit several years ago for dust control. In addition, dust boss misters are also in operation inside of the enclosure during knocking. Dislodged skulls are watered and moved to the EUDROPBALLCRANE operation located near the slag pits. The skulls are cracked and broken into smaller pieces by dropping a heavy steel ball with an electromagnetic crane onto the skulls. The broken skulls are returned to Cliffs Steel's BOF for remelting.

This facility has periodically been a source of fallout and opacity complaints. During the shutdown, modification and enhancements were reportedly made to the knock station and the slag pit watering system. Summarized below in Jan 18, 2021, NOV response (also in the file):

"Following EGLE's notification of this alleged fallout event, Levy improved grading and drainage around slag quenching areas to move water away from an area where hot slag is placed; if standing water was in this area, steam that could entrain particulate matter may be produced. In addition to the corrective actions noted in the discussion of the three VNs above, Levy has also been working through a series of other improvements, including: • Using a series of Connex boxes to build a windbreak along Levy's south fenceline and around portions of the pot knocking enclosure; • Extensively using rental dust suppression equipment while working to install two new Dust Bosses which require extension of water and electric utilities; • Upgrading the 2" water lines supplying the knock station Dust Bosses to a 4" water line for increased flow rate and water pressure; • Adding sprinkler heads and water sprays to the stockpile areas to promote cooling and particulate control; • Renting and staffing a water truck from September to November 2020 to provide additional particulate control on roads and spot treatment on material stockpiles as needed. As we work through the changes noted above, we may identify other improvements or process changes that may cause this list to change. Upgrades to the site will be made in addition to, not in place of, the required process controls listed in the Levy Plant 6 ROP."

Levy Plant 6 consists of the following emission units as described in the ROP:

1. EULEVYPLANT6 - Processing equipment associated with Levy Plant 6, including a grizzly feeder, seven conveyors, two screens and a crusher. Equipped with water spray system for air pollution control. It does not include equipment associated with EUCONVEYORSYSTEM and EUDEISTERSCREEN. Note: This emission unit was recently reconstructed as several components were replaced by "temporary" components and is now operating under PTI 5-19.

2. EUDEISTERSCREEN - A 350 ton per hour Deister Screen designed to separate slag and related materials into various finished product sizes. This emission unit includes nine conveyors and four knuckle conveyors. All but two conveyors are located downstream of the screen. Equipped with water spray system and adjustable stacker height mechanism for air pollution control.

3. EUCONVEYORSYSTEM - Five conveyors, located downstream of the Deister Screen (EUDEISTERSCREEN), designed to transfer slag and related materials to finished product stockpiles. Equipped with water spray system for air pollution control. Additional conveyors located downstream of the Deister Screen are not part of this emission unit.

4. EUBOFSLAGPIT - This emission unit comprises the BOF steel slag dumping area with a water spray quench system for slag cooling and fugitive dust control. Also includes a partial enclosure of the pot knocking station for emission control.

5. EUPROCESSNO2 - 1-100 tons per hour hopper and 2-100 tons per hour conveyor used for recycling slag materials back into the screening portion of the existing slag processing plant.

6. EUCOLDCLEANERS – Cold cleaners that meet the applicable requirements of R336.1281(h).

7. EUDROPBALLCRANE - This process consists of dropping a large steel ball from a crane onto scrap steel to break it into small pieces to be reused by adjacent steel mill, AK Steel, Dearborn Works.

8. EUMATRANSCONVEY - 1-200 tons per hour hopper and one conveyor (Pot Slagger).

INSPECTION NARRATIVE

On 6/22/21, AQD inspectors, Katie Koster and Jon Lamb, arrived at Levy Plant 6 around 10:30 a.m. We were driven around the premises by Mr. Matt Perko and Mr. Tom Green, from the Levy corporate office. We met the Plant Manager, Zayd Sufyam (Plant 6) and Brent Swolenski (BF operations) who were in a separate vehicle following us. Just prior to my entrance on the facility, Levy had a fire at their operations.

Regarding Plant 6, no slag pots were being dumped in the slag pits during the inspection. There are four pits; two of the pits are split in two so there is a total of 6 dump stations. Two of the six pits are emergency pits.

New connex boxes are in place along the Mellon Street side. Each box has a pump house for a total of 4 pump houses.

The skull knocking station and drop ball crane were not in operation. The skull knocking station enclosure appeared to be in good condition. Inside the knock station there are two dustboss (DB) 30's. Company reportedly improved the total water flow to the DB30's. Now, each DB has a separate water line. There are two new DB's outside of the knock station as well; one is elevated on a connex box. The other connex boxes have three elevated rain birds. They are turned on for a minimum amount of time before digging for dust suppression.

It appears that dust suppressant had recently been applied to unpaved areas as required. The road has a wet appearance after the suppressant is applied. Roads: Pot carrier road, loader road to crane pit, truck road internal loading.

Next, Mr. Perko drove us to the Mellon Street side of the operations. Again all equipment has been removed from the site. There are several "legacy" piles of material. There is also a pile of levy lite from the blast furnace pits, a pile of BOF slag, and a pile of hot briquetted iron (HBI) from a Cliffs facility in Toledo (?).

Facility obtained reference samples for AQD.

APPLICABLE RULES/PERMIT CONDITIONS

Company was operating under PTI 5-19 EULEVYPLANT6 during last inspection but that permit expired in March 2021. PTI 5-19 was a temporary reconstruction of the EULEVYPLANT6 slag processing plant using a portable aggregate processing plant, due to safety concerns with the existing equipment. The temporary reconstruction would allow Levy to continue processing slag while designing and constructing a permanent replacement plant.

Also, a pti application was received for changes to teh DEISTERSCREEN and PTI 45-20 was issued in May 2020. However, at this time, screen has been removed from the facility.

As such, conditions from the ROP were evaluated for this inspection.

EULEVYPLANT 6 – MI-ROP-B4243-2016

DESCRIPTION Processing equipment associated with Levy Plant 6, including a grizzly feeder, seven conveyors including the bridge conveyor, two screens and a crusher. It does not include equipment associated with EUCONVEYORSYSTEM and EUDEISTERSCREEN.

NOT OPERATING. Plant has been removed on the Detroit side.

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EUCONVEYORSYSTEM: Five conveyors, located downstream of the Deister Screen (EUDEISTERSCREEN), designed to transfer slag and related materials to finished product stockpiles. Additional conveyors located downstream of the Deister Screen are not part of this emission unit.

NOT OPERATING. Equipment has been removed.

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EUDEISTERSCREEN 350 TON PER HOUR Deister Screen designed to separate slag and related materials into various finished product sizes. This emission unit includes seven conveyors and four knuckle conveyors-all but one conveyor is located downstream of the screen.

NOT OPERATING. Equipment has been removed.

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EUBOFSLAGPIT. This is still operating. Conditions evaluated below.

DESCRIPTION: Basic Oxygen Furnace (BOF) slag pit with water spray system for fugitive dust emission control. Also includes a partial enclosure of the pot knocking station for emission control.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Water sprays

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method
1. Fugitive Dust	5% opacity[2]	3-minute average[a,b]	Fugitive dust from any road, lot, storage pile, or material handling activity at a storage pile	SC VI.1,2&3

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method
2. Fugitive Dust	20% opacity[2]	3-minute average	Fugitive dust from any other source	SC VI.1,2&3

I. EMISSION LIMIT(S) - IN COMPLIANCE. Facility has not reported any deviations from the opacity limits based on their interpretation of the slag pits being subject to 20% 3-minute average limit. This is based on applying 20% 3-minute average opacity limit to the slag pits and not treating them as "storage piles". This interpretation has been approved by AQD management related to ongoing negotiations with US Steel regarding their slag pits.

II. MATERIAL LIMIT(S) NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1.The permittee shall quench the dumped slag by water sprays before digging. IN COMPLIANCE. Water sprays in use as evidenced during the inspection.

2. The permittee shall operate and maintain a partial enclosure with water misting at the pot knocking station. IN COMPLIANCE. Enclosure with water sprays is installed and appears to be in good condition.

IV. DESIGN/EQUIPMENT PARAMETER(S) and V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall perform a Method 9D certified visible emission observation of slag dumping or digging operation at least once every calendar week for a minimum of 15 minutes during representative dumping or digging operations. Both operations shall be observed within a month. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written or electronic record of each required observation and corrective action taken.

2. The permittee shall perform a Method 9D certified visible emission observation of the pot knocking station during representative pot knocking operations at least once every calendar week for a minimum of 15 minutes. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written or electronic record of each required observation and corrective action taken.

IN COMPLIANCE. See attached log. Note, facility was shut down from April through July due to Cliffs shut down related to COVID and market conditions.

3. The permittee shall conduct periodic inspections for the purpose of determining the operational condition of the water spray systems on the slag pit dumping areas and the pot knocking station, and if necessary record the reasons for malfunction or failure noted from the inspection. These inspections shall be conducted during scheduled outages or downtimes, and immediately after observing visible emissions, but not less frequently than at least once every calendar week and permittee shall keep a written or electronic record of each inspection and corrective action taken if any.

IN COMPLIANCE. See attached log. Inspections are conducted at the required frequency. Note, facility was shut down from April through July due to Cliffs shut down related to COVID and market conditions.

SOURCE-WIDE CONDITIONS

Levy Plant 6 has an approved fugitive dust control program which is outlined in Consent Order SIP No. 18-1993, revised 9/9/94. The requirements and conditions of the Consent Order were made part of the ROP as Source-wide Requirements. Some of the main elements of the order are summarized below:

- **Paved roads – Cleaned daily with a power flush or wet vac truck.**
- **Unpaved roads - Apply dust suppressant but no frequency specified.**
- **Tarping of all trucks carrying finished product and drop heights no more than 2 feet.**
- **Stock piles – Once per month application of dust suppressant if using lignosulfonate; no frequency specified if using an alternate suppressant.**

Based on the records provided, it appears that the frequency of calcium chloride application is once per month for unpaved roads and stockpiles on the Detroit/Mellon Street side (DS in the records). Facility claims they are not responsible for any paved roads. No trucks were on site at the time of the inspection.

MI-ROP-B4243-2016, Source-Wide Conditions, Condition VII.4 and SIP Consent Order 18-1993 (Revised 9/9/94), Paragraph 11, require the company to submit a quarterly report identifying each day in which an emission limit, operational requirement, or recording requirement, as specified in SIP No. 18-1993 (Revised 9/9/94) Exhibit A (Fugitive Dust Control Plan, Edward C. Levy Co. – Plant #6), was not met. This report shall, for each instance, explain the reason that the emission limit, operational requirement, or recordkeeping requirement was not met, the duration of the event, the remedial action taken, and a description of the steps which were taken to prevent a recurrence. These reports shall be submitted within 30 days following the end of the calendar quarter in which the data was collected.

IN COMPLIANCE.

FGR290. I did not review the records at this time.

FGCOLDCLEANERS. I did not observe cold cleaners while on site.

COMPLIANCE DETERMINATION

At this time, facility appears to be in compliance with conditions evaluated in this report.

Follow up items:

Facility ROP renewal will need to reflect removed equipment.

Facility has fallout issues.

NAME Kyle Kos DATE 2/16/22 SUPERVISOR April L. Wendling 2/28/2022