



May 5, 2014

Ms. Katherine Koster  
Senior Environmental Engineer  
Michigan Department of Environmental Quality  
Air Quality Division  
3058 West Grand Boulevard  
Suite 2-300  
Detroit, Michigan 48202-6058

Subject: Response to Violation Notice  
Severstal Dearborn Facility  
4001 Miller Road  
Dearborn, Michigan 48120-1699  
SRN: A8640, Wayne County

Dear Ms. Koster:

In response to the Department of Environmental Quality's (DEQ) Violation Notice dated April 15, 2014, Severstal Dearborn, LLC (Severstal), provides this response letter to address the alleged violations identified during your review of the semi-annual (July-December) and annual Title V deviations reports for the facility submitted for 2013 on March 14, 2014. Our responses to the alleged violations are provided below:

**#1: No. 1 Ladle Refining Facility – Failure to initiate appropriate maintenance activity when baghouse pressure drop falls outside of the normal operating range.**

**#2: No. 2 Ladle Refining Facility – Failure to initiate appropriate maintenance activity when baghouse pressure drop falls outside of the normal operating range.**

Appropriate maintenance activities were initiated when the baghouse pressure drop fell outside the normal operating range. However, Severstal maintenance personnel did not properly document the activities performed in responding to the event. Severstal has developed a procedure for the operators to fill out an "Environmental Incident Investigation Form" in the event of a differential pressure alarm.

Severstal Dearborn  
14661 Rotunda Drive  
P.O. Box 1699  
Dearborn, MI 48120-1699

T: (313) 317-8955  
F: (313) 337-9040  
E: ron.kostyo@severstal.com  
www.severstalna.com

**#3: C Blast Furnace Casthouse – Failure to perform all required inspections and preventative maintenance on the C furnace baghouse and associated capture system as prescribed in the Integrated Iron and Steel MACT for January – December 2013.**

**#4: C Blast Furnace Casthouse – Failure to maintain records to demonstrate continuous compliance with the operation and maintenance requirements in the Integrated Iron and Steel MACT for January – December 2013.**

**#5: C Blast Furnace Casthouse – Failure to properly maintain and operate the C furnace baghouse and associated capture system based on failure to perform preventative maintenance and inspections at the frequencies required in the Integrated Iron and Steel MACT for January – December 2013.**

Some inspections or preventative maintenance requirements identified in the September 30, 2011 C Blast Furnace MACT plan and the November 21, 2013 plan were not completed because of one of the following: (1) an inspection form for the preventative maintenance requirement had not been created, (2) the frequency of the inspection was incorrectly set in the work order system in which Severstal utilizes to schedule maintenance inspections, or (3) the inspection wasn't completed during the allowed timeline.

Severstal has created or updated already existing inspection forms to account for the inspections or preventative maintenance requirements which were previously not documented. Also, the frequencies of the existing inspections in our work order system have been corrected to reflect the MACT requirements. In addition, Severstal has enhanced its tracking of the preventative maintenance inspections to ensure that they are completed in the timeframes identified in the MACT plan.

In regard to not properly documenting, maintaining and operating the baghouse in relation to the MACT requirements, it should be noted that Severstal performed multiple stack tests in 2013. These tests, for which reports have been submitted to MDEQ, all showed results that demonstrate compliance with the applicable MACT standards.

**#6: C Blast Furnace Casthouse – Failure to meet operating limits for the C furnace baghouse capture system for the dampers and fan amps as specified in the MACT O&M plan for January – December 2013.**

The CPMS portion of the MACT Operation & Maintenance (O&M) Plan did not properly specify all of the operating scenarios used in operating the Blast Furnace, for example when both the north and east casthouses were in slagging modes. The O&M Plan was updated on November 21, 2013 to reflect these scenarios and the proper damper position and fan amp set points. There were no physical changes made to the damper positions or fan amp set points. In addition, Severstal has established alarm set points for instances in which the dampers and/or fan amperage are not reaching their set points which are reported in a daily alarm report.

**#7: Basic Oxygen Furnace (BOF) Electrostatic Precipitator (ESP) – Failure to perform all required inspections and preventative maintenance on the ESP and associated capture system as prescribed in the Integrated Iron and Steel MACT for July – December 2013.**

**#8: BOF ESP – Failure to maintain records to demonstrate continuous compliance with the operation and maintenance requirements in the Integrated Iron and Steel MACT for July – December 2013.**

**#9: BOF ESP – Failure to properly maintain and operate the ESP and associated capture system based on failure to perform preventative maintenance and inspection at the frequencies required in the Integrated Iron and Steel MACT.**

Severstal initially reported several deviations with regard to the ESP O&M plan. However, upon further review after the deviation report was submitted to the MDEQ on March 14, 2014, Steelmaking Operations identified missing documentation for MACT and/or O&M requirements. The identified documentation included: inspection of the water spray system for proper pressure and flow rate, checking and verifying the LED drive amps, inspection for the COMS purge air system filter and dessicator, cleaning of COMS equipment, inspection of COMS thermal, pressure, and electrical instrumentation, inspection of the cross-stack alignment of the Optical Head and Retroreflector Assembly, a manual calibration check of the COMS equipment, inspection of the spray water pump inlet filter differential pressure, inspection of all flues, damper connectors, and roof monitors, ESP lubrication and oil requirements, inspection of ESP rapper operation, inspection of water spray nozzles for clogs and/or damage. These documents are available for your review.

Furthermore, extensive inspections and repairs were made in all 8 ESP compartments during September – November 2013. A detailed report of the completed work was sent to the MDEQ on February 12, 2014.

Some of the inspections or preventative maintenance requirements identified in the BOF MACT Plan and BOF Waste-Gas (ESP) Cleaning System O&M plan were not completed because of one of the following: (1) an inspection form for the preventative maintenance requirement had not been located, or (2) the inspection wasn't completed during the allowed timeline. Severstal has created or updated inspection forms in our work order system to account for the inspections or preventative maintenance requirements which were previously not documented. SNC Lavalin is currently updating the ESP O&M plan with revisions identified by Steelmaking operations. In addition, Severstal has enhanced its tracking of the preventative maintenance inspections to ensure that they are completed in the timeframes identified in the MACT and O&M plans.

In regard to not properly documenting, maintaining and operating the ESP in relation to the MACT requirements, it should be noted that Severstal performed stack testing in 2013. This test, for which a report has been submitted to MDEQ, showed results that demonstrate compliance with the applicable MACT standards.

***#10: BOF ESP – ESP and COMS data indicated 221 six-minute average periods that exceeded 20% opacity that were not attributable to steam interference from January – December 2013.***

It should be noted that 221 six-minute average exceedances represents 99.75% compliance over the entire 2013 calendar year. In August 2013, Severstal implemented a review process for six-minute averages of COMS readings above 15%. TRK Engineering, an ESP expert, assisted in implementing this process, which was also submitted to the U.S. EPA for their review. Now that Severstal has experience in investigating and troubleshooting these 15% trigger readings, and based on our 1<sup>st</sup> quarter 2014 performance, we anticipate that our overall performance will be even better in 2014.

In addition, Severstal has implemented a more robust equipment inspection and maintenance program. We feel that this will allow Severstal to operate with the best possible performance on a continuing basis.

***#11: BOF Secondary Baghouse – Failure to perform all required inspections and preventative maintenance on the BOF secondary baghouse and associated capture system as prescribed in the Integrated Iron and Steel MACT for January – December 2013.***

***#13: BOF Secondary Baghouse – Failure to maintain records to demonstrate continuous compliance with the operation and maintenance requirements in the Integrated Iron and Steel MACT for January – December 2013.***

**#14: BOF Secondary Baghouse – Failure to properly maintain and operate the BOF secondary baghouse and associated capture system based on failure to perform preventative maintenance and inspections at the frequencies required in the Integrated Iron and Steel MACT.**

Severstal initially reported several deviations with regard to the BOF Secondary Baghouse O&M plan. However, upon further review after the deviation report was submitted to the MDEQ on March 14, 2014, Steelmaking Operations identified missing documentation for MACT and/or O&M requirements. The identified documentation included: an inspection of inlet dampers and components for proper function and/or damage, and inspection of fan motor for proper ventilation and removal of dust build up. These documents are available for your review.

Some of inspections or preventative maintenance requirements identified in the BOF MACT Plan and Secondary Baghouse O&M Plan were not completed because of one of the following: (1) an inspection form for the preventative maintenance requirement had not been created, or (2) the inspection wasn't completed during the allowed timeline.

Severstal has created or updated inspection forms in our work order system to account for the inspections or preventative maintenance requirements which were previously not documented. Severstal has enhanced its tracking of the preventative maintenance inspections to ensure that they are completed in the timeframes identified in the MACT and O&M plans. In addition, the Secondary Baghouse O&M plan is currently being reviewed by Steelmaking operations and will be submitted shortly to SNC Lavalin for revision updates.

In regard to not properly documenting, maintaining and operating the baghouse in relation to the MACT requirements, it should be noted that Severstal performed stack testing in 2013. This test, for which a report has been submitted to MDEQ, showed results that demonstrate compliance with the applicable MACT standards.

**#12: BOF ESP – Failure to conduct COMS quarterly maintenance for the 3<sup>rd</sup> quarter of 2013.**

Severstal reported this deviation as a failure to conduct a quarterly maintenance inspection of the COMS when in fact it was a failure to conduct a quarterly certification audit. The 3<sup>rd</sup> quarter COMS certification audit was scheduled for September 2013 but was missed due to a contract issue. It should be noted that the 1<sup>st</sup>, 2<sup>nd</sup>, and 4<sup>th</sup> quarter 2013 certification audits were completed and demonstrated that no issues existed with the COMS system. COMS quarterly maintenance was conducted on July 9 and August 7, 2013 by Teledyne Monitor Labs (Teledyne Instruments). Moving forward, Severstal will begin the annual maintenance contract renewal process well in advance of the contract expiring to prevent missing a quarterly audit.

**#15: BOF Secondary Baghouse – Failure to meet operating limits for the BOF secondary baghouse capture system for the dampers and fan speeds as specified in the MACT O&M plan.**

Most of the deviations reported were due to the CPMS portion of the plan were not accurate to how the baghouse was programmed to operate. Specifically, the fan speed set points in the plan did not make a distinction between operation with or without hot metal transfer. There were no physical changes to the fan speeds, which have been operating properly since start-up; they were just not included in the plan. Similarly, the plan had different set points when both vessels were in idle mode (no operation on either vessel) than what was programmed in the system. Again, there were no physical changes in the settings. Both of these issues have been corrected in latest version of the plan. In addition, we have installed alarms for damper positions and fan speeds and we are running daily reports to ensure proper operation.

**#16: Sourcewide Requirements – Multiple exceedances of the 20% three-minute average opacity limit for fugitive dust when beaching iron.**

Severstal has experienced some periods where operating issues in steelmaking or at the caster required beaching of iron. This is a situation where the iron must be emptied from the torpedo car before it has the opportunity to cool and eventually solidify in the torpedo car. This is a highly undesirable event for Severstal, because the iron is scrapped and not utilized to manufacture steel in the BOF vessels.

Severstal is in the process of improving the existing controls from two to four dust bosses, which we anticipate will increase the control efficiency of this pollution control method. The additional dust bosses were installed and available for use on March 31, 2014.

**Additional Issues**

You requested that Severstal provide updated MACT O&M plans for the BOF shop and the C Blast Furnace with our response. The MACT O&M plans for the BOF shop are currently being reviewed by Steelmaking operations and/or revisions have been submitted to SNC Lavalin for updated drafts. The C Blast Furnace O&M plan is currently being updated by SNC Lavalin. Per your conversation with Jim Earl on May 1, you have agreed to our request of an extension to June 6, 2014 to submit these plans. This will allow for us time to accurately update the plans and provide to you in one submittal.

You also noted that the capture system operating limits set through the O&M plans for the BOF shop and C Blast Furnace seem to be in a constant state of flux and reminded us that the Integrated Iron and Steel MACT (40 CFR Part 63, Subpart FFFFF), 40 CFR Part 63.7824(c), requires the following if the operating limits for a capture system are changed:

- " ... (1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.
- (2) Conduct a performance test to demonstrate compliance with the applicable emission limitation in Table 1 to this subpart.
- (3) Establish revised operating limits according to the applicable procedures in paragraphs (a) and (b) of this section for a control device or capture system."

Severstal understands the need for performance test in order to revise the operating limit for a control device or capture system. Recent modifications to the O&M plans have not been the result of modifications to operating limits; rather plan modifications have been completed to revise incorrect data presented in the plans. In the past, Severstal has had the capture system designers and other capture experts evaluate the CPMS set points, initiate changes, and complete testing for both baghouses. The capture systems have been operating using set points proven through testing; however, the CPMS plans were not updated to reflect the latest set points.

Severstal relied upon information supplied by the capture system designers, which contained a few errors (including a simple copy and paste error). After noting that the set points in the plan did not appear to be correct, Severstal updated the CPMS portion of the plans. Severstal has worked with the system designers and examined the programming and the correct set points, which were in place during the most recent compliance testing in 2013 at both the C Blast Furnace and BOF.

You also stated that beaching is a fugitive dust emissions source and therefore regulated under Act 451, Section 324.5524. The associated visible emission limits in MCL 324.5524 are based on a 3 minute average, as opposed to a 6 minute average as reported in the deviation reports. We believe that the beaching of iron is a process as defined in Rule 336.1116(q) and that the averaging time of 6 minutes in Rule 301 should be used to demonstrate compliance.

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Severstal's procedure for beaching Iron is attached.

Lastly, in an effort to improve overall environmental compliance, Severstal has embedded a number of environmental personnel in the operating areas. These personnel are from Civil & Environmental Consultants (CEC) to assist in meeting all air permitting requirements. CEC's personnel are assisting Severstal personnel in updating forms and proactively verifying that the inspections and other permit obligations are conducted in a timely manner.

If you have any questions regarding the provided information or require additional information, please contact me at 313-317-8955.

Sincerely,

A handwritten signature in black ink that reads "Ron Kostyo". The signature is written in a cursive, flowing style.

Ron Kostyo  
Vice President and General Manager  
Severstal Dearborn

Attachment: SOP for Beaching Iron

cc: Mr. Jason Pond, Severstal  
Mr. Marty Szymanski, Severstal  
Mr. James Earl, Severstal

## OPERATIONS PROCEDURE

SECTION Steelmaking	TITLE  <b>BEACHING HOT METAL</b>	<b>PO-B2-20-13</b>		
GROUP BOF		DATE PREPARED January 8, 2013		
<p><b>SCOPE:</b> To detail the steps to be taken in the event that it is necessary to beach hot metal.</p> <p><b>SAFETY:</b> Prior to Beginning Any Job, Review the Following List. Evaluate All Steps in the Procedure for Possible Injury or Environmental Impact.</p> <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• PPE</li> <li>• PINCH POINTS</li> <li>• FALL PROTECTION</li> <li>• LOCK OUT</li> <li>• WATER, AIR, OR SOIL CONTAMINATION</li> <li>• BUILDING EVACUATION</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• CONFINED SPACE</li> <li>• HAND HAZARDS</li> <li>• MOLTEN METAL</li> <li>• MOVING EQUIPMENT</li> <li>• WALKING or WORK SURFACE HAZARDS</li> <li>• CONFINED SPACE</li> </ul> </td> </tr> </table> <p><b>RESPONSIBILITY:</b></p> <ul style="list-style-type: none"> <li>• The BOF shift supervisor is responsible for the coordination and implementation of all steps outlined in this procedure.</li> <li>• The BOF crane operator is responsible for pouring the iron following the steps outlined in this procedure to control emissions.</li> <li>• The loader operator is responsible for following the steps outlined in this procedure during the removal of the hot metal to control emissions.</li> <li>• The hot metal operator is responsible for following the steps outlined in this procedure to control emissions.</li> </ul> <p><b>DEFINITIONS</b> None</p>			<ul style="list-style-type: none"> <li>• PPE</li> <li>• PINCH POINTS</li> <li>• FALL PROTECTION</li> <li>• LOCK OUT</li> <li>• WATER, AIR, OR SOIL CONTAMINATION</li> <li>• BUILDING EVACUATION</li> </ul>	<ul style="list-style-type: none"> <li>• CONFINED SPACE</li> <li>• HAND HAZARDS</li> <li>• MOLTEN METAL</li> <li>• MOVING EQUIPMENT</li> <li>• WALKING or WORK SURFACE HAZARDS</li> <li>• CONFINED SPACE</li> </ul>
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<b>DATE</b>	<b>REVISION</b>	<b>PREPARED BY</b>		
5/05/14	#6	A Vasser	Approvals occur electronically per procedure PT-PR-G1-04-02	

## OPERATIONS PROCEDURE

DATE

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### PROCEDURE:

1. A. When the decision has been made to beach hot metal either at the beach area or south Charge Aisle, the BOF supervisor will contact SNA environmental prior to the initiation of any beaching.  
B. Page Environmental at 313-714-9501. This is the pager for environmental contact. Input the phone number that the environmental representative should call back, followed by 1111 and the # key, for South Charge Aisle and 2222 for North Beach. The codes are to inform them that hot metal will be beached, and the location, in the event that they cannot contact the BOF Supervisor.

### IRON TO BE BEACHED IN THE PIT LOCATED AT THE SOUTH END OF THE CHARGE AISLE:

2. A. After SNA environmental has been contacted; direct the front end loader operator to prepare the south end of the charge aisle for the hot metal to be beached.  
B. After the charge crane has moved to a position over the beach, the crane operator will lower the ladle to minimize the distance from the ladle to the ground.  
C. The charge crane operator will very slowly initiate the pour in a manner to control emissions.  
D. The charge crane operator is responsible for stopping the pour when necessary to control emissions.  
E. The charge crane operator is responsible for continuing the stop and start pour cycle to control and minimize emissions.  
F. The charge crane operator is responsible for controlling the pour rate to attain a minimum pour time of five minutes.  
G. The BOF supervisor is responsible for contacting the front end loader operator and informing the operator of the time that the beaching activities were completed and then recording the start pour, end pour, start dig and end dig times on form 2220-56.  
H. The front end loader operator is responsible for taking the proper steps to control emissions during the removal of the beached hot metal.

### IRON TO BE BEACHED IN THE PITS LOCATED OUTSIDE THE NORTH END OF BOF:



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3. A. Inform the front end loader operator to prepare the pits for iron to be dumped.
- B. Contact security (317-8882) and inform them that road H will have to be blocked 100 feet from the north and south ends of the beach area to prevent any traffic during the dumping activities.
- C. Contact the 24 Hour Dispatch at Inland Waters (1-800-992-9118 Ex 1) to bring in a tanker to provide water for the misting fans. This tanker is not on site so this call must be made as soon as the decision to beach at the north end is made, to allow for the time it will take to fill and transport the tanker to the BOF.
- D. Water misting fans, DUST BOSSES, are to be positioned on the west side of both beach pits, at the northwest and southwest corners, angled across the top of the beaching bottle, where the water mist will cross over the beaching bottle, knocking down any possible emissions.

NOTE: 4 Water misting fans are to be utilized for all pouring and digging activities.



**Water Misting Fans**

- E. Contact maintenance to connect the electrical utilities to the water misting fans and hot metal transfer car rotation station.

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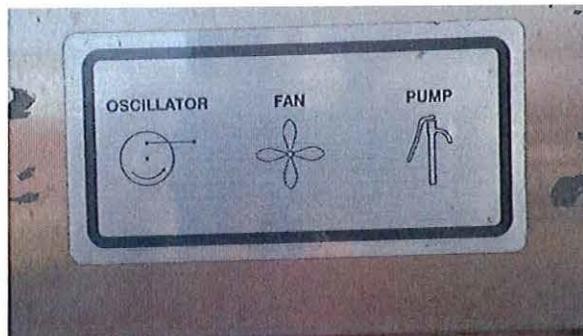


Disconnects for water misters power

Disconnect for hot metal transfer car rotation power



E. Turn the power switch to the on position.



## OPERATIONS PROCEDURE

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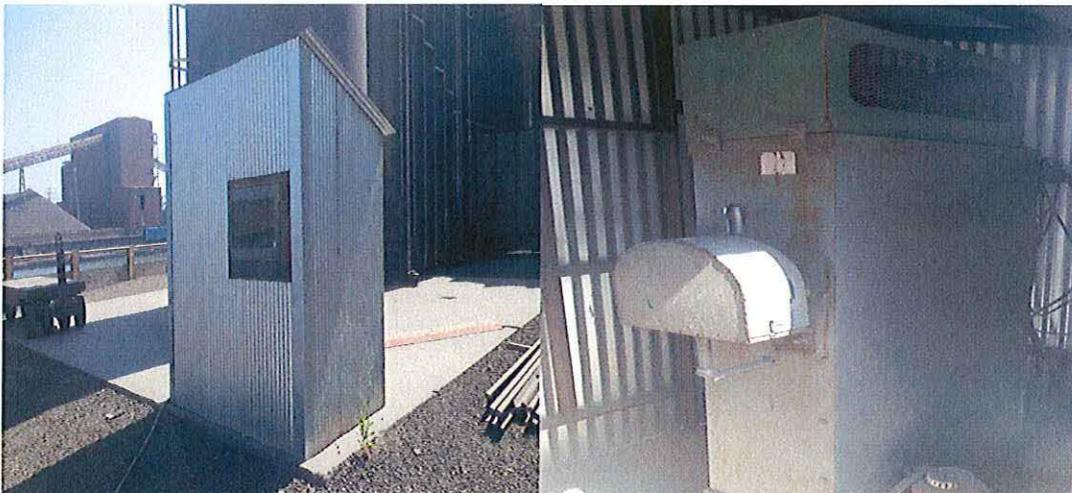
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- F. Located next to the power switch are three covered buttons.
- Press the green (on) button for the fan and confirm that the fan is running.
  - Press the green (on) button for the pump.
  - Press the green (on) button for the oscillator to position the fan so that the mist will capture as much of the pouring emissions as possible. Press the off button for the oscillator when this position is reached.
  - There is also a hand crank on each unit to raise and lower the angle of the water mist to optimize the emissions being captured.

NOTE: The water misters must be turned off whenever pouring or digging operations are stopped to conserve water and avoid over saturation of the area.



- G. Obtain a before dump weight on any treadwells to be dumped.  
H. Direct the locomotive operator to position the treadwell to be dumped over one of the pits.  
I. Confirm that security is in place and that road H has been blocked.



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**North Beach Pouring Station and Hot Metal Transfer Car Rotation Control**

- J. Connect the power cord to the treadwell. Confirm that all personnel are clear of the area and then begin to rotate the treadwell in the direction of the beach (east). The pour rate must be slow to control emissions. If emissions are observed, the treadwell must be rotated to stop the pour. The pour cannot be reinitiated until emissions have cleared. The operator must continue to pour slowly and stop the pour to control emissions.

NOTE: Confirm that there is no iron contacting the rail road tracks or rail road ties during the pour.

- K. Rotate the treadwell is to be rotated to the upright position after it is empty and then disconnect the power cord.
- L. After all dumping activities have concluded; press the red (off) button for the pump and fan and turn the power selector to the off position for the water misters.
- M. Disconnect the water and electrical supply lines.
- N. After all electrical and water utilities have been disconnected from the water misters open the drain valve on the bottom of the unit and confirm that the water has drained.



- O. Record the treadwell number, start pour, end pour and amount of iron that was dumped on the BOF shift report. If possible take the treadwell back over the scale to get the empty weight. If the treadwell can not be taken over the scale, use the previous tare weight to calculate the dumped amount.
- P. Inform the front end loader operator of the time that the pouring activities are completed.

NOTE: Do not pour more than one hot metal transfer car of iron into each pit unless otherwise directed by BOF management. If it is decided to pour more than one hot metal transfer car into a pit, position the second hot metal transfer car so that it is not over the same spot where the first hot metal transfer car was emptied.

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NOTE: Confirm that the power cord to the treadwell and all other dumping equipment are clear of the railroad tracks after the dumping activities are completed.

NOTE: Minimum residence time after dumping iron at the north beach before digging can begin is 48 hours, unless otherwise directed by BOF management.

### **BREAKING OF IRON UTILIZING A WEIGHT**

In the event that the iron can not be broken into pieces that allow removal by the front end loader, it may be necessary to break up the iron by dropping a weighted ball on the iron. This practice is known as "bombing".

4. A. Contact security at 317-8882 on the previous day and notify them when "bombing" activities are scheduled and that H road will have to be blocked. If possible it is best to schedule any "bombing" on a weekend when there is less traffic on H road.
- B. Contact RR operations and notify them that "bombing" activities are scheduled for the next day.
- C. Contact traffic control at 322-3018 and notify them when "bombing" activities are scheduled for the next day.
- D. Security must be in place and H road blocked prior to the initiation of any "bombing" activities.
- E. A look out must be posted at a safe distance on the west side of the rail road tracks that are adjacent to the pit to be "bombed" prior to the initiation of any "bombing" activities to assure that no personnel walk into the beach area during the "bombing" activities.
- F. In the event that security or the lookout has to leave the area, "bombing" activities must stop until they return.
- G. Notify security, rail road operations and traffic control when the "bombing" activities have been completed.

### **REFERENCES/RELATED PROCEDURES:**

None

### **FORMS USED:**

Beached Iron Summary 2220-56  
Levy Report of Digging Activities 2200-52

### **RECORD OF REVISIONS:**

Revision Date	Description	Section Affected
#6 – 05/05/14	Replaced Water Misting Fans picture	Procedure
#5 – 5/2/2014	Added instruction to step 1. Clarified "4" misting fans to note. Changed picture of Dust Bosses.	Procedure
#4 - 4/29/14	Described water misting fans locations.	Procedure.
01/08/13	New Procedure	All
09/10/13	Updated format	All
03/31/14	Added use of water misters and pictures	Procedure