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David W. Hacker
Attorney-Environmental

March 5, 2010

**VIA OVERNIGHT DELIVERY**

Attn: Compliance Tracker, AE-17J
Air Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

**Re: United States Steel Corporation**
**Gary Works (GW)**

Dear U. S. EPA Region V Representative:

On or about November 5, 2009, United States Steel Corporation (U. S. Steel) received a Clean Air Act §114 Request for Information regarding visible emissions from its blast furnace operations at its Gary Works. In response to that request, U. S. Steel is providing the requested information and data on the enclosed disk. All visible emission observations (VEOs) required by U. S. EPA's request were conducted by third party certified visible emission observers from OCS Environmental, Inc. (OCS.) It is significant to note that U. S. Steel and OCS did not observe any deviations from the 20% standard during the observation period. Enclosed in the attached disk are the following:

- Certification by Gary Works Responsible Official
- Summary of Blast Furnace VEOs (including tops, equalization valves, bells; dirty bleeder events; beaching), as well as additional requested information regarding reason, duration, etc., as specified by the § 114 Request.
- Bleeder Opening Spreadsheet
- Information regarding Beaching
- Visible Emission Record Forms for Blast Furnaces – organized by week

Should you have any questions regarding this response or the attachments, please contact me. A certification statement regarding this is response is provided on the following page as well as on the enclosed disk.

Sincerely,

David W. Hacker

Enclosure
Attachment

cc: Sabrina Argentieri, Esq. (USEPA) – cover letter only via email
Sharon Owen (USS) – cover letter only via email
David Smiga, Esq. (USS) – cover letter only via email
Tishie Woodwell (USS) – cover letter only via email
Mark Jeffrey (USS)
Robert Lange (USS)
James Alexander (USS)

## CERTIFICATION

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for knowingly submitting false statements and information, including the possibility of fines or imprisonment pursuant to section 113(c)(2) of the Act, and 18 U.S.C. §§ 1001 and 1341.

Sharon K. Owen, General Manager
United States Steel Corporation
Gary Works

3-4-2010
Date

EPA-R5-2012-0005960000120

**U. S. Steel**
**Gary Works**
**USEPA CAA § 114 Request Blast Furnace Readings**

| Date | Tops, EV, Bells[1] | Method 9 Observations[2] (6 min avg) |
|---|---|---|
| 11/19/09 | 3 series of observations – all 0% | #6 BF planned bleeder – (0%) |
| 11/20/09 | 3 series of observations – all 0% | #6 BF unplanned bleeder – (0%) |
| 11/21/09 | 3 series of observations – all 0%<br>Method 9 on #4 BF top | |
| 11/22/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%) |
| 11/23/09 | 3 series of observations – all 0%<br>Method 9 on #4 BF top | |
| 11/24/09 | 3 series of observations – all 0%<br>Method 9 on #4 top | #4 BF unplanned bleeder (0%) |
| 11/25/09 | 3 series of observations – all 0% | |
| 11/26/09 | Holiday | |
| 11/27/09 | Holiday | |
| 11/28/09 | 3 series of observations – all 0% | |
| 11/29/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%)<br>#6 BF planned bleeder (0%) |
| 11/30/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%) |
| 12/01/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%) |
| 12/02/09 | 3 series of observations – all 0% | |
| 12/03/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%)<br>#8 BF planned bleeder (0%)<br>Iron Beaching |
| 12/04/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%) |
| 12/05/09 | 3 series of observations – all 0% | |
| 12/06/09 | 3 series of observations – all 0% | |
| 12/07/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%) |
| 12/08/09 | 3 series of observations – all 0% | #6 BF planned bleeder (0%)<br>#6 BF planned bleeder (0%) |



EPA-USS-0097599

EPA-R5-2012-0005960000120

**U. S. Steel**
**Gary Works**
**USEPA CAA § 114 Request Blast Furnace Readings**

| | | |
|---|---|---|
| 12/09/09 | 3 series of observations – all 0% | |
| 12/10/09 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>#4 BF planned bleeder (0%)<br>#8 BF unplanned bleeder (0%)<br>Iron Beaching (0%) |
| 12/11/09 | 3 series of observations – all 0% | Iron Beaching (0%) |
| 12/12/09 | 3 series of observations – all 0% | #4 BF unplanned bleeder (0%)<br>#6 BF unplanned bleeder (0%) |
| 12/13/09 | 3 series of observations – all 0% | #4 BF unplanned bleeder (0%)<br>#6 BF unplanned bleeder (0%)<br>#8 BF planned bleeder (0%) |
| 12/14/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%)<br>#4 BF unplanned bleeder (0%)<br>#4 BF planned bleeder (0%)<br>Iron Beaching |
| 12/15/09 | 3 series of observations – all 0% | #4 BF unplanned bleeder (0%)<br>#14 BF planned (0%)<br>#6 BF unplanned (0%)<br>#4 BF top Method 9<br>#4 BF planned bleeder (0%)<br>#14 BF Iron beaching (0%) |
| 12/16/09 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>#14 BF planned bleeder (0%)<br>Iron Beaching (0%) |
| 12/17/09 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>#14 BF planned bleeder (0%) |
| 12/18/09 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>#6 BF Top Method 9 (6%) |
| 12/19/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%) |
| 12/20/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%) |



EPA-USS-0097600

**U. S. Steel**
**Gary Works**
**USEPA CAA § 114 Request Blast Furnace Readings**

| | | |
|---|---|---|
| 12/21/09 | 3 series of observations – all 0% | #14 BF planned bleeder (0%)<br>#4 BF unplanned bleeder (0%) |
| 12/22/09 | 3 series of observations – all 0% | #4 BF planned bleeder (0%) |
| 12/23/09 | 3 series of observations – all 0% | |
| 12/24/09 | Holiday | |
| 12/25/09 | Holiday | |
| 12/26/09 | 3 series of observations – all 0% | #8 BF planned bleeder (0%)<br>Iron Beaching |
| 12/27/09 | 3 series of observations – all 0% | |
| 12/28/09 | 3 series of observations – all 0% | #6 BF planned bleeder (0%)<br>#6 BF planned bleeder (0%) |
| 12/29/09 | 3 series of observations – all 0% | |
| 12/30/09 | 3 series of observations – all 0% | |
| 12/31/09 | 3 series of observations – all 0% | |
| 01/01/10 | 3 series of observations – all 0% | |
| 01/02/10 | 3 series of observations – all 0% | #8BF planned bleeder (0%) |
| 01/03/10 | 3 series of observations – all 0% | |
| 01/04/10 | 3 series of observations – all 0% | #4 BF unplanned bleeder (0%) |
| 01/05/10 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>#4 BF unplanned bleeder (0%)<br>#4 BF Top Method |
| 01/06/10 | 3 series of observations – all 0% | |
| 01/07/10 | 3 series of observations – all 0% | #8 BF planned bleeder (0%) |
| 01/08/10 | 3 series of observations – all 0% | |
| 01/09/10 | 3 series of observations – all 0% | |
| 01/10/10 | 3 series of observations – all 0% | |
| 01/11/10 | 3 series of observations – all 0% | |
| 01/12/10 | 3 series of observations – all 0% | #4 BF unplanned bleeder |
| 01/13/10 | 3 series of observations – all 0% | |
| 01/14/10 | 3 series of observations – all 0% | #6 BF planned bleeder |

**U. S. Steel**
**Gary Works**
**USEPA CAA § 114 Request Blast Furnace Readings**

| | | |
|---|---|---|
| 01/15/10 | 3 series of observations – all 0% | |
| 01/16/10 | 3 series of observations – all 0% | #8 BF planned bleeder (0%) |
| 01/17/10 | 3 series of observations – all 0% | |
| 01/18/10 | 3 series of observations – all 0% | |
| 01/19/10 | 3 series of observations – all 0% | #8 BF planned bleeder |
| 01/20/10 | 3 series of observations – all 0% | #8BF planned bleeder (0%) |
| 01/21/10 | 3 series of observations – all 0% | #4 BF planned bleeder (0%)<br>Iron Beaching |
| 01/22/10 | 3 series of observations – all 0% | |
| 01/23/10 | 3 series of observations – all 0% | |
| 01/24/10 | 3 series of observations – all 0% | |
| 01/25/10 | 3 series of observations – all 0% | #4 BF planned bleeder (0%) |
| 01/26/10 | 3 series of observations – all 0% | |
| 01/27/10 | 3 series of observations – all 0% | |
| 01/28/10 | 3 series of observations – all 0% | #4BF unplanned bleeder (0%) |
| 01/29/10 | 3 series of observations – all 0% | |
| 01/30/10 | 3 series of observations – all 0% | #4 BF unplanned bleeder (0%) |
| 01/31/10 | 3 series of observations – all 0% | |
| 02/01/10 | 3 series of observations – all 0% | |
| 02/02/10 | 3 series of observations – all 0% | |
| 02/03/10 | 3 series of observations – all 0% | |
| 02/04/10 | 3 series of observations – all 0% | |
| 02/05/10 | 3 series of observations – all 0% | #8BF planned bleeder (0%) |
| 02/06/10 | 3 series of observations – all 0% | |
| 02/07/10 | 3 series of observations – all 0% | |
| 02/08/10 | 3 series of observations – all 0% | |
| 02/09/10 | 3 series of observations – all 0% | |
| 02/10/10 | 3 series of observations – all 0% | #8BF unplanned bleeder (0%) |
| 02/11/10 | 3 series of observations – all 0% | #8BF planned bleeder (0%) |
| 02/12/10 | 3 series of observations – all 0% | |

**U. S. Steel**
**Gary Works**
**USEPA CAA § 114 Request Blast Furnace Readings**

| | | |
|---|---|---|
| 02/13/10 | 3 series of observations – all 0% | #4BF unplanned bleeder (0%) |
| 02/14/10 | 3 series of observations – all 0% | |
| 02/15/10 | 3 series of observations – all 0% | #6BF planned bleeder (0%) |
| 02/16/10 | 3 series of observations – all 0% | #4BF planned bleeder (0%) |
| 02/17/10 | 3 series of observations – all 0% | |

Footnotes:

1 – U. S. Steel Gary Works performed checks and VEOs of Blast Furnace tops, EQ valves, and bells as required by the CAA § 114 Request using the protocol agreed to by USEPA and U. S. Steel. In addition, if during the reading of bleeder events or at other times, if emissions were observed from a blast furnace top, VEOs were recorded and are provided in the attached files.

2 – Method 9 observations are provided in the attached files for all VEOs from bleeders, tops, EQ valves, bells, and beaching activities.

U. S. Steel Gary Works Blast Furnace No. 4 Bleeder Events - Information

BF 4

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 11/19/2009 | zero bleeder openings | | | | | | |
| 11/20/2009 | zero bleeder openings | | | | | | |
| 11/21/2009 | zero bleeder openings | | | | | | |
| 11/22/2009 | zero bleeder openings | | | | | | |
| 11/23/2009 | zero bleeder openings | | | | | | |
| 11/24/2009 | 5:12:15 | 10:55:17 | 20582 | N | NA | NA | taking furnace off |
| 11/25/2009 | zero bleeder openings | | | | | | |
| 11/26/2009 | zero bleeder openings | | | | | | |
| 11/27/2009 | zero bleeder openings | | | | | | |
| 11/28/2009 | zero bleeder openings | | | | | | |
| 11/29/2009 | 0:10:10 | 3:09:15 | 10745 | N | NA | NA | taking furnace off |
| 11/30/2009 | zero bleeder openings | | | | | | |
| 12/1/2009 | zero bleeder openings | | | | | | |
| 12/2/2009 | zero bleeder openings | | | | | | |
| 12/3/2009 | zero bleeder openings | | | | | | |
| 12/4/2009 | zero bleeder openings | | | | | | |
| 12/5/2009 | zero bleeder openings | | | | | | |
| 12/6/2009 | zero bleeder openings | | | | | | |
| 12/7/2009 | zero bleeder openings | | | | | | |
| 12/8/2009 | zero bleeder openings | | | | | | |
| 12/9/2009 | zero bleeder openings | | | | | | |
| 12/10/2009 | 6:04:47 | 22:20:53 | 58566 | N | NA | NA | planned outage |
| 12/11/2009 | zero bleeder openings | | | | | | |
| 12/12/2009 | zero bleeder openings | | | | | | |
| 12/13/2009 | zero bleeder openings | | | | | | |
| 12/14/2009 | 14:16:36 | 18:59:12 | 16956 | N | NA | NA | taking furnace off |
| **12/14 #2** | 18:59:31 | 18:59:58 | 27 | N | NA | NA | reseat bleeders |
| 12/15/2009 | 6:27:30 | 6:27:48 | 18 | Y | slip | taking furnace off | furnace wrecked in AM |
| **12/15 #2** | 10:27:00 | 23:59:59 | 48779 | N | NA | NA | furnace off |
| 12/16/2009 | zero bleeder openings | | | | | | furnace off |
| 12/17/2009 | zero bleeder openings | | | | | | furnace off |
| 12/18/2009 | 0:00:00 | 19:04:14 | 68654 | N | NA | NA | furnace off |
| 12/19/2009 | 3:47:06 | 3:47:23 | 17 | Y | slip | NA | wreck recovery |
| **12/19 #2** | 4:12:25 | 4:12:33 | 8 | N | NA | NA | reseat bleeders |
| **12/19 #3** | 4:12:40 | 4:12:51 | 11 | N | NA | NA | reseat bleeders |
| **12/19 #4** | 4:12:56 | 4:13:07 | 11 | N | NA | NA | reseat bleeders |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 4 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| **12/19 #5** | 6:13:13 | 14:03:43 | 28230 | N | NA | NA | reseat bleeders/fce off |
| 12/20/2009 | 16:29:44 | 18:55:32 | 8748 | N | NA | NA | taking furnace off |
| **12/20 #2** | 23:21:29 | 23:21:35 | 6 | Y | slip | NA | wreck recovery |
| **12/20 #3** | 23:23:15 | 23:23:28 | 13 | N | NA | NA | reseat bleeders |
| **12/20 #4** | 23:24:46 | 23:24:59 | 13 | N | NA | NA | reseat bleeders |
| **12/20 #5** | 23:25:04 | 23:25:16 | 12 | N | NA | NA | reseat bleeders |
| 12/21/2009 | 0:01:24 | 0:01:32 | 8 | Y | slip | NA | wreck recovery |
| **12/21 #2** | 0:26:46 | 0:26:53 | 7 | Y | slip | NA | wreck recovery |
| **12/21 #3** | 1:53:54 | 1:54:05 | 11 | N | NA | NA | reseat bleeders |
| **12/21 #4** | 1:54:08 | 1:54:17 | 9 | N | NA | NA | reseat bleeders |
| **12/21 #5** | 1:54:23 | 1:54:36 | 13 | N | NA | NA | reseat bleeders |
| 12/22/2009 | 10:47:28 | 13:45:37 | 10689 | N | NA | NA | taking furnace off |
| **12/22 #2** | 13:46:26 | 13:46:48 | 22 | N | NA | NA | reseat bleeders |
| 12/23/2009 | zero bleeder openings | | | | | | |
| 12/24/2009 | zero bleeder openings | | | | | | |
| 12/25/2009 | zero bleeder openings | | | | | | |
| 12/26/2009 | zero bleeder openings | | | | | | |
| 12/27/2009 | zero bleeder openings | | | | | | |
| 12/28/2009 | zero bleeder openings | | | | | | |
| 12/29/2009 | zero bleeder openings | | | | | | |
| 12/30/2009 | zero bleeder openings | | | | | | |
| 12/31/2009 | zero bleeder openings | | | | | | |
| 1/1/2010 | zero bleeder openings | | | | | | |
| 1/2/2010 | zero bleeder openings | | | | | | |
| 1/3/2010 | 21:22 | 21:22:00 | 6 | Y | gas system issues | NA | gas system issues |
| 1/4/2010 | zero bleeder openings | | | | | | |
| 1/5/2010 | 3:34:25 | 5:01:15 | 5210 | N | NA | NA | taking furnace off |
| **1/5 #2** | 7:43:37 | 7:44:21 | 44 | N | NA | NA | reseat bleeders |
| **1/5 #3** | 8:14:21 | 8:23:27 | 546 | N | NA | NA | reseat bleeders |
| **1/5 #4** | 8:25:17 | 8:25:43 | 26 | N | NA | NA | reseat bleeders |
| **1/5 #5** | 10:15:00 | 10:15:00 | 6 | N | NA | NA | reseat bleeders |
| 1/6/2010 | zero bleeder openings | | | | | | |
| 1/7/2010 | zero bleeder openings | | | | | | |
| 1/8/2010 | zero bleeder openings | | | | | | |
| 1/9/2010 | zero bleeder openings | | | | | | |
| 1/10/2010 | zero bleeder openings | | | | | | |
| 1/11/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 4 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 1/12/2010 | 9:07:42 | 12:11:59 | 11057 | N | NA | NA | taking furnace off |
| 1/13/2010 | zero bleeder openings | | | | | | |
| 1/14/2010 | zero bleeder openings | | | | | | |
| 1/15/2010 | zero bleeder openings | | | | | | |
| 1/16/2010 | zero bleeder openings | | | | | | |
| 1/17/2010 | zero bleeder openings | | | | | | |
| 1/18/2010 | zero bleeder openings | | | | | | |
| 1/19/2010 | zero bleeder openings | | | | | | |
| 1/20/2010 | zero bleeder openings | | | | | | |
| 1/21/2010 | 5:12:45 | 5:13:53 | 8 | Y | NA | NA | reseat bleeders |
| **1/21 #2** | 5:21:30 | 5:21:56 | 26 | N | NA | NA | reseat bleeders |
| **1/21 #3** | 5:51:57 | 22:59:27 | 61650 | N | NA | NA | taking furnace off |
| 1/22/2010 | zero bleeder openings | | | | | | |
| 1/23/2010 | zero bleeder openings | | | | | | |
| 1/24/2010 | zero bleeder openings | | | | | | |
| 1/25/2010 | 12:14:36 | 14:50:05 | 9329 | N | NA | NA | taking furnace off |
| 1/26/2010 | zero bleeder openings | | | | | | |
| 1/27/2010 | zero bleeder openings | | | | | | |
| 1/28/2010 | zero bleeder openings | | | | | | |
| 1/29/2010 | zero bleeder openings | | | | | | |
| 1/30/2010 | zero bleeder openings | | | | | | |
| 1/31/2010 | zero bleeder openings | | | | | | |
| 2/1/2010 | zero bleeder openings | | | | | | |
| 2/2/2010 | zero bleeder openings | | | | | | |
| 2/3/2010 | zero bleeder openings | | | | | | |
| 2/4/2010 | zero bleeder openings | | | | | | |
| 2/5/2010 | zero bleeder openings | | | | | | |
| 2/6/2010 | zero bleeder openings | | | | | | |
| 2/7/2010 | zero bleeder openings | | | | | | |
| 2/8/2010 | zero bleeder openings | | | | | | |
| 2/9/2010 | zero bleeder openings | | | | | | |
| 2/10/2010 | zero bleeder openings | | | | | | |
| 2/11/2010 | zero bleeder openings | | | | | | |
| 2/12/2010 | zero bleeder openings | | | | | | |
| 2/13/2010 | zero bleeder openings | | | | | | |
| 2/14/2010 | zero bleeder openings | | | | | | |
| 2/15/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 4 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 2/16/2010 | 8:41:53 | 9:33:52 | 3099 | N | NA | NA | taking furnace off |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 6 Bleeder Events - Information

BF 6

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 11/19/2009 | 5:41 | 10:54 | 18780 | N | NA | NA | taking furnace off |
| 11/20/2009 | 11:28 | 13:40 | 7920 | N | NA | NA | taking furnace off |
| **11/20 #2** | 12:50 | 12:52 | 120 | N | NA | NA | taking furnace off |
| 11/21/2009 | zero bleeder openings | | | | | | |
| 11/22/2009 | zero bleeder openings | | | | | | |
| 11/23/2009 | zero bleeder openings | | | | | | |
| 11/24/2009 | zero bleeder openings | | | | | | |
| 11/25/2009 | zero bleeder openings | | | | | | |
| 11/26/2009 | zero bleeder openings | | | | | | |
| 11/27/2009 | zero bleeder openings | | | | | | |
| 11/28/2009 | zero bleeder openings | | | | | | |
| 11/29/2009 | 1:50:16 | 5:19:39 | 12563 | N | NA | NA | taking furnace off |
| **11/29 #2** | 15:21:01 | 15:37:36 | 995 | N | NA | NA | taking furnace off |
| 11/30/2009 | zero bleeder openings | | | | | | |
| 12/1/2009 | zero bleeder openings | | | | | | |
| 12/2/2009 | zero bleeder openings | | | | | | |
| 12/3/2009 | 12:49:20 | 18:44:26 | 21306 | N | NA | NA | taking furnace off |
| 12/4/2009 | zero bleeder openings | | | | | | |
| 12/5/2009 | 0:04:25 | 3:43:57 | 13172 | N | NA | NA | taking furnace off |
| **12/5 #2** | 3:44:09 | 3:44:21 | 12 | N | NA | NA | reseat |
| 12/6/2009 | zero bleeder openings | | | | | | |
| 12/7/2009 | 23:11 | 0:00 | 2940 | N | NA | NA | taking furnace off |
| 12/8/2009 | 0:00:00 | 10:51:00 | 39060 | N | NA | NA | taking furnace off |
| **12/8 #2** | 10:54:05 | 15:59:43 | 18338 | N | NA | NA | taking furnace off |
| 12/9/2009 | zero bleeder openings | | | | | | |
| 12/10/2009 | zero bleeder openings | | | | | | |
| 12/11/2009 | zero bleeder openings | | | | | | |
| 12/12/2009 | 2:09:41 | 10:09:40 | 28799 | N | NA | NA | taking furnace off |
| 12/13/2009 | 16:49:40 | 16:53:03 | 203 | N | NA | NA | reseat |
| **12/13 #2** | 16:53:56 | 16:54:13 | 17 | N | NA | NA | reseat |
| **12/13 #3** | 17:05:22 | 17:06:44 | 82 | N | NA | NA | reseat |
| **12/13 #4** | 18:26:44 | 18:30:04 | 200 | N | NA | NA | reseat |
| 12/14/2009 | zero bleeder openings | | | | | | |
| 12/15/2009 | zero bleeder openings | | | | | | |
| 12/16/2009 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 6 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 12/17/2009 | zero bleeder openings | | | | | | |
| 12/18/2009 | zero bleeder openings | | | | | | |
| 12/19/2009 | zero bleeder openings | | | | | | |
| 12/20/2009 | zero bleeder openings | | | | | | |
| 12/21/2009 | zero bleeder openings | | | | | | |
| 12/22/2009 | zero bleeder openings | | | | | | |
| 12/23/2009 | zero bleeder openings | | | | | | |
| 12/24/2009 | zero bleeder openings | | | | | | |
| 12/25/2009 | zero bleeder openings | | | | | | |
| 12/26/2009 | zero bleeder openings | | | | | | |
| 12/27/2009 | zero bleeder openings | | | | | | |
| 12/28/2009 | 7:50:01 | 13:22:47 | 19966 | N | NA | NA | taking furnace off |
| 12/29/2009 | zero bleeder openings | | | | | | |
| 12/30/2009 | zero bleeder openings | | | | | | |
| 12/31/2009 | zero bleeder openings | | | | | | |
| 1/1/2010 | zero bleeder openings | | | | | | |
| 1/2/2010 | zero bleeder openings | | | | | | |
| 1/3/2010 | zero bleeder openings | | | | | | |
| 1/4/2010 | zero bleeder openings | | | | | | |
| 1/5/2010 | zero bleeder openings | | | | | | |
| 1/6/2010 | zero bleeder openings | | | | | | |
| 1/7/2010 | zero bleeder openings | | | | | | |
| 1/8/2010 | zero bleeder openings | | | | | | |
| 1/9/2010 | zero bleeder openings | | | | | | |
| 1/10/2010 | zero bleeder openings | | | | | | |
| 1/11/2010 | zero bleeder openings | | | | | | |
| 1/12/2010 | zero bleeder openings | | | | | | |
| 1/13/2010 | zero bleeder openings | | | | | | |
| 1/14/2010 | 5:47:41 | 13:42:13 | 28472 | N | NA | NA | taking furnace off |
| **1/14 #2** | 13:48:06 | 22:31:29 | 31403 | N | NA | NA | taking furnace off |
| **1/14 #3** | 22:31:43 | 22:32:03 | 20 | N | NA | NA | reseat |
| 1/15/2010 | zero bleeder openings | | | | | | |
| 1/16/2010 | zero bleeder openings | | | | | | |
| 1/17/2010 | zero bleeder openings | | | | | | |
| 1/18/2010 | zero bleeder openings | | | | | | |
| 1/19/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 6 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 1/20/2010 | zero bleeder openings | | | | | | |
| 1/21/2010 | zero bleeder openings | | | | | | |
| 1/22/2010 | zero bleeder openings | | | | | | |
| 1/23/2010 | zero bleeder openings | | | | | | |
| 1/24/2010 | zero bleeder openings | | | | | | |
| 1/25/2010 | zero bleeder openings | | | | | | |
| 1/26/2010 | zero bleeder openings | | | | | | |
| 1/27/2010 | zero bleeder openings | | | | | | |
| 1/28/2010 | zero bleeder openings | | | | | | |
| 1/29/2010 | zero bleeder openings | | | | | | |
| 1/30/2010 | zero bleeder openings | | | | | | |
| 1/31/2010 | zero bleeder openings | | | | | | |
| 2/1/2010 | zero bleeder openings | | | | | | |
| 2/2/2010 | zero bleeder openings | | | | | | |
| 2/3/2010 | zero bleeder openings | | | | | | |
| 2/4/2010 | zero bleeder openings | | | | | | |
| 2/5/2010 | zero bleeder openings | | | | | | |
| 2/6/2010 | zero bleeder openings | | | | | | |
| 2/7/2010 | zero bleeder openings | | | | | | |
| 2/8/2010 | zero bleeder openings | | | | | | |
| 2/9/2010 | zero bleeder openings | | | | | | |
| 2/10/2010 | zero bleeder openings | | | | | | |
| 2/11/2010 | zero bleeder openings | | | | | | |
| 2/12/2010 | zero bleeder openings | | | | | | |
| 2/13/2010 | zero bleeder openings | | | | | | |
| 2/14/2010 | zero bleeder openings | | | | | | |
| 2/15/2010 | 10:36:59 | 12:30:56 | 6837 | N | NA | NA | taking furnace off |
| **2/15 #2** | 12:31:15 | 12:31:39 | 24 | N | NA | NA | reseat |
| 2/16/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 8 Bleeder Events - Information

BF 8

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 11/19/2009 | zero bleeder openings | | | | | | |
| 11/20/2009 | zero bleeder openings | | | | | | |
| 11/21/2009 | 0:12:29 | 3:01:06 | 10117 | N | NA | NA | taking furnace off |
| **11/21 #2** | 16:50:09 | 16:59:54 | 585 | N | NA | NA | taking furnace off |
| **11/21 #3** | 19:04:24 | 19:25:11 | 1247 | N | NA | NA | taking furnace off |
| 11/22/2009 | 7:14:15 | 7:56:34 | 1339 | N | NA | NA | taking furnace off |
| **11/22 #2** | 7:57:37 | 12:56:49 | 17952 | N | NA | NA | taking furnace off |
| 11/23/2009 | zero bleeder openings | | | | | | |
| 11/24/2009 | zero bleeder openings | | | | | | |
| 11/25/2009 | zero bleeder openings | | | | | | |
| 11/26/2009 | zero bleeder openings | | | | | | |
| 11/27/2009 | zero bleeder openings | | | | | | |
| 11/28/2009 | zero bleeder openings | | | | | | |
| 11/29/2009 | 11:09:04 | 17:50:02 | 24058 | N | NA | NA | taking furnace off |
| 11/30/2009 | 8:47:42 | 14:42:25 | 21283 | N | NA | NA | taking furnace off |
| 12/1/2009 | zero bleeder openings | | | | | | |
| 12/2/2009 | zero bleeder openings | | | | | | |
| 12/3/2009 | 5:59:03 | 22:23:38 | 59075 | N | NA | NA | taking furnace off |
| **12/3 #2** | 22:23:41 | 22:23:52 | 11 | N | NA | NA | reseat |
| 12/4/2009 | 1:21:00 | 1:21:10 | 10 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #2** | 1:21:31 | 1:21:53 | 15 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #3** | 1:22:19 | 1:22:32 | 13 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #4** | 1:22:54 | 1:23:08 | 14 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #5** | 1:23:33 | 1:23:46 | 13 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #6** | 1:24:11 | 1:24:24 | 13 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #7** | 1:24:52 | 1:25:06 | 14 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #8** | 1:25:29 | 1:25:42 | 13 | Y | venturi malfunction; operator error | operator retrained | |
| **12/4 #9** | 18:34:42 | 20:55:42 | 8460 | N | NA | NA | taking furnace off |
| 12/5/2009 | zero bleeder openings | | | | | | |
| 12/6/2009 | zero bleeder openings | | | | | | |
| 12/7/2009 | 10:30:15 | 16:07:43 | 20248 | N | NA | NA | taking furnace off |
| **12/7 #2** | 19:11:05 | 19:11:16 | 11 | Y | slip due to raw material fines | NA | issue resolved itself |
| 12/8/2009 | zero bleeder openings | | | | | | |
| 12/9/2009 | zero bleeder openings | | | | | | |
| 12/10/2009 | zero bleeder openings | | | | | | |
| 12/11/2009 | zero bleeder openings | | | | | | |
| 12/12/2009 | zero bleeder openings | | | | | | |
| 12/13/2009 | 13:07:17 | 20:26:29 | 26352 | N | NA | NA | taking furnace off |
| **12/13 #2** | 20:26:59 | 20:27:08 | 9 | N | NA | NA | reseat |
| 12/14/2009 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 8 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 12/15/2009 | zero bleeder openings | | | | | | |
| 12/16/2009 | zero bleeder openings | | | | | | |
| 12/17/2009 | zero bleeder openings | | | | | | |
| 12/18/2009 | zero bleeder openings | | | | | | |
| 12/19/2009 | zero bleeder openings | | | | | | |
| 12/20/2009 | zero bleeder openings | | | | | | |
| 12/21/2009 | zero bleeder openings | | | | | | |
| 12/22/2009 | zero bleeder openings | | | | | | |
| 12/23/2009 | 18:00 | 0:00:00 | 21600 | N | NA | NA | taking furnace off |
| 12/24/2009 | 0:00:00 | 11:17:40 | 40660 | N | NA | NA | taking furnace off |
| 12/25/2009 | 6:34:00 | 11:57:00 | 19380 | N | NA | NA | taking furnace off |
| 12/26/2009 | 5:19:10 | 16:28:17 | 40147 | N | NA | NA | taking furnace off |
| **12/26 #2** | 17:24:05 | 17:24:19 | 14 | N | NA | NA | reseat |
| 12/27/2009 | zero bleeder openings | | | | | | |
| 12/28/2009 | zero bleeder openings | | | | | | |
| 12/29/2009 | zero bleeder openings | | | | | | |
| 12/30/2009 | zero bleeder openings | | | | | | |
| 12/31/2009 | zero bleeder openings | | | | | | |
| 1/1/2010 | zero bleeder openings | | | | | | |
| 1/2/2010 | 4:38:00 | 4:38:09 | 9 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #2** | 4:39:23 | 4:39:32 | 9 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #3** | 4:40:40 | 4:40:48 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #4** | 4:41:17 | 4:41:25 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #5** | 4:42:20 | 4:42:28 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #6** | 4:43:03 | 4:43:12 | 9 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #7** | 4:43:50 | 4:43:57 | 7 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #8** | 4:44:32 | 4:44:40 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #9** | 4:45:14 | 4:45:22 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #10** | 4:46:04 | 4:46:12 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #11** | 4:47:12 | 4:47:20 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #12** | 4:48:08 | 4:48:16 | 8 | Y | frozen leveling tank | thawed tank | moved heater to area |
| **1/2 #13** | 5:28:16 | 9:14:30 | 13574 | N | NA | NA | taking furnace off |
| 1/3/2010 | zero bleeder openings | | | | | | |
| 1/4/2010 | zero bleeder openings | | | | | | |
| 1/5/2010 | zero bleeder openings | | | | | | |
| 1/6/2010 | zero bleeder openings | | | | | | |
| 1/7/2010 | 5:53 | 22:22 | 59315 | N | NA | NA | taking furnace off |
| 1/8/2010 | zero bleeder openings | | | | | | |
| 1/9/2010 | zero bleeder openings | | | | | | |
| 1/10/2010 | zero bleeder openings | | | | | | |
| 1/11/2010 | zero bleeder openings | | | | | | |
| 1/12/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 8 Bleeder Events - Information

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 1/13/2010 | zero bleeder openings | | | | | | |
| 1/14/2010 | zero bleeder openings | | | | | | |
| 1/15/2010 | zero bleeder openings | | | | | | |
| 1/16/2010 | 8:52:36 | 12:42:52 | 13816 | N | NA | NA | taking furnace off |
| **1/16 #2** | 12:42:55 | 12:43:05 | 10 | N | NA | NA | reseat |
| 1/17/2010 | zero bleeder openings | | | | | | |
| 1/18/2010 | zero bleeder openings | | | | | | |
| 1/19/2010 | 10:21:34 | 15:24:09 | 18155 | N | NA | NA | taking furnace off |
| **1/19 #2** | 15:25:29 | 15:25:35 | 6 | N | NA | NA | reseat |
| 1/20/2010 | 11:50:31 | 13:21:53 | 5482 | N | NA | NA | taking furnace off |
| 1/21/2010 | zero bleeder openings | | | | | | |
| 1/22/2010 | zero bleeder openings | | | | | | |
| 1/23/2010 | zero bleeder openings | | | | | | |
| 1/24/2010 | 8:14:11 | 8:40:42 | 1591 | N | NA | NA | taking furnace off |
| 1/25/2010 | zero bleeder openings | | | | | | |
| 1/26/2010 | zero bleeder openings | | | | | | |
| 1/27/2010 | zero bleeder openings | | | | | | |
| 1/28/2010 | zero bleeder openings | | | | | | |
| 1/29/2010 | zero bleeder openings | | | | | | |
| 1/30/2010 | zero bleeder openings | | | | | | |
| 1/31/2010 | zero bleeder openings | | | | | | |
| 2/1/2010 | zero bleeder openings | | | | | | |
| 2/2/2010 | zero bleeder openings | | | | | | |
| 2/3/2010 | zero bleeder openings | | | | | | |
| 2/4/2010 | zero bleeder openings | | | | | | |
| 2/5/2010 | 13:47:22 | 15:57:36 | 7814 | N | NA | NA | taking furnace off |
| 2/6/2010 | zero bleeder openings | | | | | | |
| 2/7/2010 | zero bleeder openings | | | | | | |
| 2/8/2010 | zero bleeder openings | | | | | | |
| 2/9/2010 | 17:02:43 | 17:03:55 | 13 | Y | Venturi positioner failed | Put venturi in manual until repaired | |
| **2/9 #2** | 17:41:58 | 17:42:10 | 12 | Y | Venturi positioner failed | Put venturi in manual until repaired | |
| 2/10/2010 | 7:26:28 | 7:26:38 | 10 | N | NA | NA | reseat |
| **2/10 #2** | 7:27:10 | 7:27:18 | 8 | N | NA | NA | reseat |
| 2/11/2010 | 5:59:55 | 18:15:35 | 44140 | N | NA | NA | taking furnace off |
| 2/12/2010 | 18:17:14 | 18:17:26 | 12 | Y | operator error | retrained operator | adjusted venturi instead of NG valve |
| 2/13/2010 | zero bleeder openings | | | | | | |
| 2/14/2010 | zero bleeder openings | | | | | | |
| 2/15/2010 | zero bleeder openings | | | | | | |
| 2/16/2010 | zero bleeder openings | | | | | | |

VEOs provided separately.

U. S. Steel Gary Works Blast Furnace No. 14 Bleeder Events - Information

BF 14

| Date | Start Time | End Time | Duration (sec) | Unplanned | Root Cause | Corrective Action | Comments |
|---|---|---|---|---|---|---|---|
| 11/29/2009 | 16:34 | 22:39 | 21900 | N | NA | NA | taking furnace off |
| **11/29 #2** | 22:39 | 22:40 | 10 | N | NA | NA | reseat |
| **11/29 #3** | 22:40 | 22:40 | 9 | N | NA | NA | reseat |
| **11/29 #4** | 22:40 | 22:40 | 10 | N | NA | NA | reseat |
| **11/29 #5** | 22:40 | 22:41 | 9 | N | NA | NA | reseat |
| **11/29 #6** | 22:41 | 22:41 | 7 | N | NA | NA | reseat |
| 12/1/2009 | 6:59 | 13:38 | 23940 | N | NA | NA | taking furnace off |
| **12/1 #2** | 13:39 | 13:39 | 18 | N | NA | NA | reseat |
| **12/1 #3** | 13:40 | 13:40 | 7 | N | NA | NA | reseat |
| **12/1 #4** | 13:40 | 13:40 | 7 | N | NA | NA | reseat |
| **12/1 #5** | 13:40 | 13:40 | 6 | N | NA | NA | reseat |
| **12/1 #6** | 13:40 | 14:16 | 2127 | N | NA | NA | taking furnace off |
| **12/1 #7** | 14:16 | 14:17 | 74 | N | NA | NA | taking furnace off |
| 12/4/2009 | 16:25 | 23:22 | 25020 | N | NA | NA | taking furnace off |
| **12/4 #2** | 23:22 | 23:22 | 8 | N | NA | NA | reseat |
| **12/4 #3** | 23:22 | 23:22 | 8 | N | NA | NA | reseat |
| **12/4 #4** | 23:22 | 2:31 | 11314 | N | NA | NA | taking furnace off |
| 12/5/2009 | 2:31 | 2:31 | 10 | N | NA | NA | reseat |
| **12/5 #2** | 2:31 | 2:31 | 9 | N | NA | NA | reseat |
| **12/5 #3** | 2:47 | 3:09 | 1326 | N | NA | NA | taking furnace off |
| 12/7/2009 | 16:43 | 21:37 | 17640 | N | NA | NA | taking furnace off |
| **12/7 #2** | 21:37 | 21:37 | 13 | N | NA | NA | reseat |
| **12/7 #3** | 21:37 | 21:37 | 10 | N | NA | NA | reseat |
| **12/7 #4** | 21:38 | 21:38 | 11 | N | NA | NA | reseat |
| **12/7 #5** | 21:38 | 21:38 | 12 | N | NA | NA | reseat |
| **12/7 #6** | 21:38 | 21:38 | 10 | N | NA | NA | reseat |
| 12/14/2009 | 14:48 | 18:49 | 14460 | N | NA | NA | taking furnace off |
| **12/14 #2** | 18:49 | 20:31 | 6107 | N | NA | NA | taking furnace off |
| **12/14 #3** | 20:31 | 20:31 | 9 | N | NA | NA | reseat |
| **12/14 #4** | 20:31 | 20:32 | 8 | N | NA | NA | reseat |
| 12/15/2009 | 7:43 | 12:45 | 18120 | N | NA | NA | taking furnace off |
| 12/16/2009 | 5:56 | 10:52 | 17760 | N | NA | NA | taking furnace off |
| **12/16 #2** | 11:22 | 12:12 | 2968 | N | NA | NA | taking furnace off |
| 12/21/2009 | 6:22 | left open for reline | | N | bleeder left open for reline | NA | bleeder left open for reline |
| 2/19/2010 | | left open for reline (reline should end in early March) | | | | | |

VEOs provided separately.

**U. S. Steel Gary Works**
**Nos. 4, 6, 8 and 14 Blast Furnaces**
**Iron Beaching / Kishing Activities**

| Date | Comments |
|---|---|
| 12/3/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/10/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/11/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/14/2009 | #14 BF, No iron was beached, furnace was bottom tapped, but nothing came out |
| 12/15/2009 | #14 BF No iron was beached, furnace was bottom tapped, but nothing came out |
| 12/16/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/16/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/16/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 12/20/2009 | 30 tons of hot metal dumped; BF4 was coming back from wreck with high Si; BF4 HM was blended with BF8 HM, but ladle was overfilled at BF4 and steel couldn't take the high blended Si level. 30 tons of HM was then beached and ladle was refilled with BF8 HM |
| 12/26/2009 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |
| 1/21/2010 | Kishing a ladle: Sub car was brought into beach facility and turned over to dump slag and prepare ladle for service |