| | |
|---|---|
| AP32 Section: | 12.5.1 |
| Background Chapter | 3 |
| Reference: | 39 |
| Title: | Stack test summary information for IPSCO Steel, Montpelier, IA. Testing conducted on November 17-19, 1998. Received from Corey Detter, Iowa Department of Natural Resources, Air Quality Bureau on May 8, 2002. |

**Melanie Taylor**

**From:** Corey Detter [Corey.Detter@dnr.state.ia.us]
**Sent:** Wednesday, May 08, 2002 9:29 AM
**To:** mtaylor@alpha-gamma.com
**Subject:** Re: Stack tests for electric arc furnaces

Melanie,

Attached to this email you will find my summary of the stack test information for the IPSCO Steel plant in Montpelier, IA. I think I have addressed all of your questions, but should you need additional information, please let me know and I will try to help you out.

Corey Detter, P.E.
Corey.Detter@dnr.state.ia.us

Environmental Engineer
Air Quality Bureau
Iowa Department of Natural Resources

7900 Hickman Road, Suite 1; Urbandale, IA 50322
Fax (515) 242-5094; Phone (515) 281-4842

Process Description:

The IPSCO Montpelier Works produces high quality coiled strip, coiled plate and discrete plate steel. The primary melting unit at this facility is a single electrode, twin shell direct current EAF with an allowed capacity of 200 TPH production rate. The EAF shells are directly vented to a post combustion chamber during the melting process. After exiting the post combustion chamber, the exhaust gas travels through a water-cooled duct and a spark box. At this point the gas evacuated from the meltshop along with the exhaust from the LMF are combined with the EAF exhaust. The combined gas stream is then vented through a baghouse and out the stack.

Stack Testing completed:

On November 17-19, 1998 stack testing was completed on the EAF/LMF stack at the IPSCO Steel Plant in Montpelier IA. The following table outlines the methods used for testing each pollutant and the average emission rate from that test.

| Pollutant | Test Method | Average emission rate (lb/ton steel) |
|---|---|---|
| $PM/PM_{10}$ (filterable) | Method 5 40 CFR 60 App. A | 0.042 |
| $PM/PM_{10}$ (condensable) | Method 202 40 CFR 51 App. M | 0.20 |
| $SO_2$ | Method 6C 40 CFR 60 App. A | 1.18 |
| $NO_X$ | Method 7E 40 CFR 60 App. A | 0.68 |
| CO | Method 10 40 CFR 60 App. A | 1.26 |
| VOC | Method 25A 40 CFR 60 App. A | 0.15 |
| Pb | Method 12 40 CFR 60 App. A | 0.00051 |
| Be | Method 104 40 CFR 61 App. B | 0.000000074 |
| F | Method 13B 40 CFR 60 App. A | 0.0045 |

The tests for all gases ($SO_2$, $NO_X$, CO, and VOC) consisted of 3 runs conducted on November 17, 1998. The production rate during these tests was an average of 118.3 tons per hour of steel. The beryllium (Be) and fluoride (F) tests each consisted on one run which was also performed on November 17, 1998. Since this test was performed over approximately the same time frame as the gas tests, the production rate was essentially the same. The particulate matter tests were conducted with one run conducted on each of the three days (Nov. 17-19, 1998). Due to some problems with run #2 it was not accepted. Therefore, the results presented here are the average of the other two runs. The production rate during these test runs averaged 120 tons of steel per hour.

**Melanie Taylor**

**From:** Wayne Wiksell [Wayne.Wiksell@dnr.state.ia.us]
**Sent:** Wednesday, May 01, 2002 12:18 PM
**To:** mtaylor@alpha-gamma.com
**Subject:** Fwd: Latest Tested Emission Factors

Hi Melanie
Here's some info I made up on the tested EAF emission factors.
Wayne

Wayne S. Wiksell, P. E.
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## Melanie Taylor

**From:** Wayne Wiksell [wwiksel@max.state.ia.us]
**Sent:** Tuesday, November 16, 1999 4:39 PM
**To:** gmc@adem.state.al.us; dlhatche@bakerd.com; bcampion@barr.com; bsheets@dem.state.in.us; msalenda@dem.state.in.us; bliss_h@deq.state.la.us; damcleod@deq.state.va.us; jjoseph@dmpit.com; mlafond@ensr.com; gorg@epa.gov; som@epamail.epa.gov; stevem@eralley.com; enviro@erols.com; April@mail.state.ky.us; cdetter@max.state.ia.us; fred_langenbach@ncair.net; eril@rmtinc.com; campbell@rtpenv.com; jessica@tw-enviro.com; rrakiewicz@uaigroup.com
**Subject:** Latest Tested Emission Factors

BACT Determination.xls

Hi All Again

I hope that this isn't information that I've previously sent. If it is, then just hit the ole "delete" key.

Here's a spreadsheet that I've worked up for comparing some of the IPSCO EAF values. At this time we have received requested additional information from IPSCO in regards to their permit application to raise their BACT emission rates. We are in the process of evaluating the request for modification to the PSD permits based upon the results of the initial performance tests.

<<BACT Determination.xls>>

Wayne

Wayne S. Wiksell, PE
Environmental Engineer
(wwiksel@max.state.ia.us)

Construction Permit Section
Air Quality Bureau
Environmental Protection Division
Iowa Department of Natural Resources

Please visit our Website at:
http://www.state.ia.us/government/dnr/organiza/epd/airq/aqbur.htm

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| Pollutant | Permitted Capacity tph | Permit Limit lb/hr | Permit Limit lb/ton | As Tested 120 tph lb/ton | 95th % lb/ton | Requested Limit lb/ton | BACT Range lb/ton |
|---|---|---|---|---|---|---|---|
| NOx | 164 | 45.00 | 0.27 | 0.67 | 0.82 | 1.00 | 0.18-0.70 |
| SO2 | 164 | 10.00 | 0.06 | 1.16* | 1.61* | 0.70 | 0.20-0.70 |
| CO | 164 | 150.00 | 0.91 | 1.24 | 2.05 | 2.00 | 2.00-6.50 |
| VOC | 164 | 22.00 | 0.13 | 0.15 | 0.18 | 0.20 | 0.13-0.35 |
| PM (Method 5) | 164 | 17.90 | 0.11 | 0.05** | | No Change | |
| PM (Meth5+202) | 164 | | NA | 0.27 | | New Limit | |
| PM10 (Meth5+202) | 164 | 17.90 | 0.11 | 0.27 | | 0.27 | |
| Opacity | 164 | | "3%" | "0%" | NA | No Change | 0-3"%" |
| Pb | 164 | | 0.00055 | 0.00037 | NA | No Change | NA |
| Be | 164 | | 5.50E-07 | BDL | NA | No Change | NA |
| F | 164 | | 0.0041 | 0.0034 | NA | No Change | NA |

* Note: The % sulfur in the injection carbon has been reduced and is the basis for the requested permit limit.

**Note: The PM test production rate was 107 tons/hr.