11.1

AIR EMISSIONS TEST REPORT
TOTAL PARTICULATE MATTER EMISSIONS
HARSELL POSITIVE PRESSURE BAGHOUSE
KENTUCKY ELECTRIC STEEL, INC.
ASHLAND, KENTUCKY

Prepared for

Kentucky Electric Steel, Inc.
P.O. Box 3500
Ashland, **Kentucky 41105**

July 2000

Submitted by

Environmental Quality Management, Inc.
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July 6, 2000

RECEIVED
JUL 11 2000
TECHNICAL SERVICE BRANCH

Mr. Gerald Slucher
Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department of Environmental Protection
Division of Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601

Dear Mr. Slucher:

On behalf of our client, Kentucky Electric Steel, Inc. (KESI), we are pleased to submit the Air Emissions Test Report for Total Particulate Matter Emissions for KESI's Harsell Positive Pressure Baghouse. This test was required as a condition of KESI's Title V Operating Permit (Permit Number V-98-031).

Please contact Mr. Travis Bailey, KESI, at (606) 929-1330 with any questions or comments.

Sincerely,
ENVIRONMENTAL QUALITY MANAGEMENT, INC.

Thomas C Gerstle /SUB

Thomas C. Gerstle, P.E.
Project Manager

Cc: Mr. Travis Bailey, KESI
Ms. Sheri Bussard, EQ
Mr. Fred Hall, EQ
Ms. Tina Wise, EQ
050163.0009

Attachment

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SECTION 1

INTRODUCTION

On May 11 and 12,2000, Environmental Quality Management, Inc. (EQ) and Pacific Environmental Services, Inc. (PES) personnel conducted a compliance air emission program at the Kentucky Electric Steel, Inc. facility in Ashland, Kentucky. Sampling was conducted following the procedures of EPA Reference Methods. Total particulate matter emissions were measured from the Harsell positive pressure baghouse outlet sampling location.

EQ utilized EPA Reference Methods 1 and 2 to determine the inlet stack gas velocity and temperature. EPA Method 3 was used to determine the stack gas molecular weight. Moisture, particulate matter, and visible emissions were measured following the procedures of EPA Reference Methods 4, 5D, and 9, respectively at the baghouse outlet. In addition, visible emission observations were conducted via EPA Method 9 at the melt shop roof monitor.

Mr. Eddie Hall of Kentucky Electric Steel, Inc. and Messrs. Tom Gerstle and Fred Hall of EQ monitored process operations for the purposes of testing. Mr. John Jayne and Mr. Rick Seelhorst, of the Kentucky Division of Environmental Protection observed process operations and sampling efforts. Messrs. Ron Kolde, Dan Scheffel, and Gary Gay of PES and Ms. Tina Wise of EQ conducted sampling efforts.

SECTION 2

SUMMARY OF TEST RESULTS

Sampling of the Harsell baghouse was conducted on May 11 and 12, 2000. Three test runs, four to five hours in length, were conducted for velocity, moisture, O, and CO_2 and particulate matter. Visible emission observations were also conducted at the baghouse and melt shop exhausts. Sampling was conducted following EPA Reference Methods 1-4, 5D, and 9.

Table 2.1 summarizes the stack gas conditions measured for the three sample periods at the inlet. Stack gas velocities averaged 81.5 feet per second (fps) at 154°F and 2.1 percent moisture. Stack gas composition averaged zero percent CO_2 and 21 percent O_2. Volumetric flow rates averaged 622,736 actual cubic feet per minute (acfrn) or 522,102 dry standard cubic feet per minute (dscfm). Measurements were consistent for the three test runs.

Table 2.2 summarizes the stack gas conditions measured for the three sample periods at the outlet. Stack gas velocities averaged 1.9 feet per second (fps) at 159°F and 2.1 percent moisture. Stack gas composition averaged zero percent CO, and 21 percent O_2. Volumetric flow rates averaged 603,900 actual cubic feet per minute (acfm) or 497,700 dry standard cubic feet per minute (dscfm). Measurements were consistent for the three test runs.

Table 2.3 summarizes the filterable particulate concentrations and mass emission rates and metal production and baghouse pressure drop. The filterable particulate concentration averaged 0.0019 grains per dry standard cubic foot (gr/dscf), with an average mass emission rate of 8.13 pounds per hour (lb/hr). The molton metal production averaged 45 tons/hr (total for both furnaces) and the baghouse pressure drop averaged 5.5 inches of water.

EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources" was used to determine opacity from the baghouse exhaust as well as from the shop roof monitor. Observations were conducted simultaneously at each source in conjuction with the particulate sampling runs. The observations were recorded separately for the baghouse exhaust and melt shop roof monitor. The raw emission observation data was entered into a computer spreadsheet to calculate the melting, charging and tapping

averages. These data are provided in Table 2.4. The baghouse observation data is provided in Table *2.5.*

The melting periods are summarized into rolling 6 minute averages. The charges were averaged for the time period commencing at the moment the EAF starts to open and ending either three minutes after the EAF roof is returned to the closed position or six minutes after commencement of opening of the roof whichever is longer. The tapping periods were averaged for the time period commencing at the moment the EAF begins to tilt and ending either three minutes after steel ceases to flow or six minutes after steel begins to flow, whichever is longer.

TABLE 2.1
SUMMARY OF STACK GAS CONDITIONS
HARSELL BAGHOUSE INLET

Date: May 11 and 12, 2000 **Plant: Kentucky Electric Steel, Ashland, Kentucky**

Site/ Run No.	Time	Stack Gas Velocity, fps[a]	Volumetric Flow Rate		Temp, °F	Moisture, %	CO_2, %	O_2, %
			acfm[b]	dscfm[c]				
I-1	5/11 1355-1945	80.4	614,725	538,404	136	1.2	0.0	21.0
I-2	5/12 0630-1050	82.3	629,190	522,645	157	2.6	0.0	21.0
I-3	5/12 1050-1619	81.7	624,292	505,257	169	2.7	0.0	21.0
Average		81.5	622,736	522,102	154	2.1	0.0	21.0

[a]Feet per second.
[b]Actual cubic feet per minute.
[c]Dry standard cubic feet per minute.

Note: Stack gas conditions presented are the average of pre and post-test velocity measurements conducted at the inlet sampling location.

TABLE 2.2
SUMMARY OF STACK GAS CONDITIONS
HARSELL BAGHOUSE OUTLET

Date: May 11 and 12, 2000 **Plant: Kentucky Electric Steel, Ashland, Kentucky**

Site/ Run No.	Time	Stack Gas Velocity, fps[a]	Volumetric Flow Rate		Temp, °F	Moisture, %	CO_2, %	O_2, %
			acfm[b]	dscfm[c]				
O-1	5/11 1355-1945	2.0	630,570	536,400	146	1.2	0.0	21.0
O-2	5/12 0630-1050	1.9	628,030	511,300	162	2.5	0.0	21.0
O-3	5/12 1050-1619	1.7	553,010	445,500	168	2.6	0.0	21.0
Average		1.9	603,900	497,700	159	2.1	0.0	21.0

[a]Feet per second.
[b]Actual cubic feet per minute.
[c]Dry standard cubic feet per minute.

NOTE: Volumetric flow rates were taken at the inlet and applied to the outlet per Method 5D. Other parameters were measured at the outlet location.

TABLE 2.3
SUMMARY OF FILTERABLE PARTICULATE EMISSIONS
HARSELL BAGHOUSE OUTLET

Dates: May 11 and 12, 2000 **Plant: Kentucky Electric Steel, Ashland, Kentucky**

Run No.	Date/Time	Filterable Particulate Matter				Production, Tons/hr.	Baghouse Pressure Drop Inches Water (Range)
		Concentration		Mass Rate			
		gr/dscf[a]	lb/dscf[b]	lb/hr[c]	lb/ton[d]		
0-1	5/11 1355-1945	2.07E-03	2.96E-07	9.54	0.25	38.8	5.4 (5 -6.1)
0-2	5/12 0630-1050	2.16E-03	3.09E-07	9.48	0.20	48	5.5 (5 - 5.8)
0-3	5/12 1050-1619	1.41E-03	2.01E-07	5.37	0.11	48	5.6 (5.2 - 5.8)
Average		1.88E-03	2.69E-07	8.13	0.19	45	5.5 (5 - 6.1)

[a]Grains per dry standard cubic foot
[b]Pounds per dry standard cubic foot
[c]Pound per hour
[d]Pounds per ton of steel produced

TABLE 2.4. VISIBLE EMISSION OBSERVATION SUMMARY, MELT SHOP ROOF MONITOR

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
13:59:00	0		Charge	7:15:00	0		Melt	12:18:00	5		Melt
13:59:15	0		Charge	7:15:15	0		Melt	12:18:15	15		Melt
13:59:30	0		Charge	7:15:30	0		Melt	12:18:30	15		Melt
13:59:45	0		Charge	7:15:45	0		Melt	12:18:45	15		Melt
14:00:00	5		Charge	7:16:00	0		Melt	12:19:00	30		Melt
14:00:15	5		Charge	7:16:15	0		Melt	12:19:15	30		Melt
14:00:30	5		Charge	7:16:30	0		Melt	12:19:30	30		Melt
14:00:45	5		Charge	7:16:45	0		Melt	12:19:45	30		Melt
14:01:00	5		Charge	7:17:00	0		Melt	12:20:00	35		Melt
14:01:15	0		Charge	7:17:15	0		Melt	12:20:15	35		Melt
14:01:30	0		Charge	7:17:30	0		Melt	12:20:30	40		Melt
14:01:45	0		Charge	7:17:45	0		Melt	12:20:45	40		Melt
14:02:00	0		Charge	7:18:00	0		Melt	12:21:00	40		Melt
14:02:15	0		Charge	7:18:15	0		Melt	12:21:15	40		Melt
14:02:30	0		Charge	7:18:30	0		Melt	12:21:30	35		Melt
14:02:45	0		Charge	7:18:45	0		Melt	12:21:45	35		Melt
14:03:00	0		Charge	7:19:00	0		Melt	12:22:00	30		Melt
14:03:15	0		Charge	7:19:15	0		Melt	12:22:15	30		Melt
14:03:30	0		Charge	7:19:30	0		Melt	12:22:30	30		Melt
14:03:45	0		Charge	7:19:45	0		Melt	12:22:45	25		Melt
14:04:00	0		Charge	7:20:00	0		Melt	12:23:00	25		Melt
14:04:15	0		Charge	7:20:15	0		Melt	12:23:15	15		Melt
14:04:30	0		Charge	7:20:30	0		Melt	12:23:30	15		Melt
14:04:45	0		Charge	7:20:45	0	0.00	Melt	12:23:45	15	27.29	Melt
14:05:00	0		Charge	7:21:00	0	0.00	Melt	12:24:00	15	27.71	Melt
14:05:15	10		Charge	7:21:15	0	0.00	Melt	12:24:15	15	27.71	Melt
14:05:30	10		Charge	7:21:30	0	0.00	Melt	12:24:30	10	27.50	Melt
14:05:45	5		Charge	7:21:45	0	0.00	Melt	12:24:45	5	27.08	Melt
14:06:00	5		Charge	7:22:00	0	0.00	Melt	12:25:00	5	26.04	Melt
14:06:15	5		Charge	7:22:15	0	0.00	Melt	12:25:15	5	25.00	Melt
14:06:30	0		Charge	7:22:30	0	0.00	Melt	12:25:30	5	23.96	Melt
14:06:45	0		Charge	7:22:45	0	0.00	Melt	12:25:45	5	22.92	Melt
14:07:00	0		Charge	7:23:00	0	0.00	Melt	12:26:00	5	21.67	Melt
14:07:15	0		Charge	7:23:15	0	0.00	Melt	12:26:15	0	20.21	Melt
14:07:30	0		Charge	7:23:30	0	0.00	Melt	12:26:30	0	18.54	Melt
14:07:45	0		Charge	7:23:45	0	0.00	Melt	12:26:45	0	16.88	Melt
14:08:00	0		Charge	7:24:00	0	0.00	Melt	12:27:00	0	15.21	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:08:15	0		Charge	7:24:15	0	0.00	Melt	12:27:15	0	13.54	Melt
14:08:30	0		Charge	7:24:30	0	0.00	Melt	12:27:30	0	12.08	Melt
14:08:45	0		Charge	7:24:45	0	0.00	Melt	12:27:45	0	10.63	Melt
14:09:00	0		Charge	7:25:00	0	0.00	Melt	12:28:00	0	9.38	Melt
14:09:15	0		Charge	7:25:15	0	0.00	Melt	12:28:15	0	8.13	Melt
14:09:30	0		Charge	7:25:30	0	0.00	Melt	12:28:30	0	6.88	Melt
14:09:45	0		Charge	7:25:45	0	0.00	Melt	12:28:45	0	5.83	Melt
14:10:00	0		Charge	7:26:00	0	0.00	Melt	12:29:00	0	4.79	Melt
14:10:15	0		Charge	7:26:15	0	0.00	Melt	12:29:15	0	4.17	Melt
14:10:30	0		Charge	7:26:30	0	0.00	Melt	12:29:30	0	3.54	Melt
14:10:45	0		Charge	7:26:45	0	0.00	Melt	12:29:45	0	2.92	Melt
14:11:00	0		Charge	7:27:00	0	0.00	Melt	12:30:00	0	2.29	Melt
14:11:15	0		Charge	7:27:15	0	0.00	Melt	12:30:15	0	1.67	Melt
14:11:30	0		Charge	7:27:30	0	0.00	Melt	12:30:30	0	1.25	Melt
14:11:45	0		Charge	7:27:45	0	0.00	Melt	12:30:45	0	1.04	Melt
14:12:00	0		Charge	7:28:00	0	0.00	Melt	12:31:00	0		Charge
14:12:15	0		Charge	7:28:15	0	0.00	Melt	12:31:15	0		Charge
14:12:30	0		Charge	7:28:30	0	0.00	Melt	12:31:30	0		Charge
14:12:45	0		Charge	7:28:45	0	0.00	Melt	12:31:45	0		Charge
14:13:00	0		Charge	7:29:00	0	0.00	Melt	12:32:00	0		Charge
14:13:15	0		Charge	7:29:15	0	0.00	Melt	12:32:15	0		Charge
14:13:30	0		Charge	7:29:30	0	0.00	Melt	12:32:30	0		Charge
14:13:45	0		Charge	7:29:45	0	0.00	Melt	12:32:45	0		Charge
14:14:00	0		Charge	7:30:00	0		Tap	12:33:00	10		Charge
14:14:15	0		Charge	7:30:15	0		Tap	12:33:15	5		Charge
14:14:30	0		Charge	7:30:30	0		Tap	12:33:30	10		Charge
14:14:45	0		Charge	7:30:45	10		Tap	12:33:45	15		Charge
14:15:00	0		Charge	7:31:00	0		Tap	12:34:00	5		Charge
14:15:15	0		Charge	7:31:15	0		Tap	12:34:15	5		Charge
14:15:30	5		Charge	7:31:30	0		Tap	12:34:30	5		Charge
14:15:45	5		Charge	7:31:45	10		Tap	12:34:45	5		Charge
14:16:00	5		Charge	7:32:00	10		Tap	12:35:00	0		Charge
14:16:15	5		Charge	7:32:15	5		Tap	12:35:15	0		Charge
14:16:30	5		Charge	7:32:30	5		Tap	12:35:30	5		Charge
14:16:45	10		Charge	7:32:45	0		Tap	12:35:45	5		Charge
14:17:00	10		Charge	7:33:00	0		Tap	12:36:00	5		Charge
14:17:15	5		Charge	7:33:15	0		Tap	12:36:15	10		Charge
14:17:30	5		Charge	7:33:30	0		Tap	12:36:30	15		Charge
14:17:45	5		Charge	7:33:45	0		Tap	12:36:45	15		Charge
14:18:00	5		Charge	7:34:00	0		Tap	12:37:00	20		Charge
14:18:15	5		Charge	7:34:15	0		Tap	12:37:15	20		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:18:30	5		Charge	7:34:30	0		Tap	12:37:30	20		Charge
14:18:45	0		Charge	7:34:45	0		Tap	12:37:45	20	6.96	Charge
14:19:00	0		Charge	7:35:00	0		Tap	12:38:00	20		Melt
14:19:15	0		Charge	7:35:15	0		Tap	12:38:15	20		Melt
14:19:30	0		Charge	7:35:30	0		Tap	12:38:30	20		Melt
14:19:45	0		Charge	7:35:45	0		Tap	12:38:45	15		Melt
14:20:00	0		Charge	7:36:00	0		Tap	12:39:00	15		Melt
14:20:15	0		Charge	7:36:15	5		Tap	12:39:15	15		Melt
14:20:30	0		Charge	7:36:30	5		Tap	12:39:30	15		Melt
14:20:45	0		Charge	7:36:45	0	1.79	Tap	12:39:45	10		Melt
14:21:00	0		Charge	7:37:00	5		Charge	12:40:00	15		Melt
14:21:15	0		Charge	7:37:15	5		Charge	12:40:15	15		Melt
14:21:30	0		Charge	7:37:30	0		Charge	12:40:30	10		Melt
14:21:45	0		Charge	7:37:45	0		Charge	12:40:45	20		Melt
14:22:00	0		Charge	7:38:00	5		Charge	12:41:00	20		Melt
14:22:15	0		Charge	7:38:15	0		Charge	12:41:15	20		Melt
14:22:30	0		Charge	7:38:30	0		Charge	12:41:30	20		Melt
14:22:45	5		Charge	7:38:45	0		Charge	12:41:45	15		Melt
14:23:00	5		Charge	7:39:00	0		Charge	12:42:00	15		Melt
14:23:15	5		Charge	7:39:15	10		Charge	12:42:15	15		Melt
14:23:30	10		Charge	7:39:30	5		Charge	12:42:30	5		Melt
14:23:45	10		Charge	7:39:45	5		Charge	12:42:45	5		Melt
14:24:00	5		Charge	7:40:00	0		Charge	12:43:00	5		Melt
14:24:15	0		Charge	7:40:15	10		Charge	12:43:15	5		Melt
14:24:30	0		Charge	7:40:30	5		Charge	12:43:30	10		Melt
14:24:45	0		Charge	7:40:45	5		Charge	12:43:45	0	13.54	Melt
14:25:00	0		Charge	7:41:00	5		Charge	12:44:00	0	12.71	Melt
14:25:15	5		Charge	7:41:15	5		Charge	12:44:15	0	11.88	Melt
14:25:30	5		Charge	7:41:30	5		Charge	12:44:30	5	11.25	Melt
14:25:45	5		Charge	7:41:45	0		Charge	12:44:45	15	11.25	Melt
14:26:00	5		Charge	7:42:00	0		Charge	12:45:00	15	11.25	Melt
14:26:15	0		Charge	7:42:15	0		Charge	12:45:15	15	11.25	Melt
14:26:30	0		Charge	7:42:30	0		Charge	12:45:30	10	11.04	Melt
14:26:45	0		Charge	7:42:45	0		Charge	12:45:45	5	10.83	Melt
14:27:00	0		Charge	7:43:00	0		Charge	12:46:00	10		Tap
14:27:15	0		Charge	7:43:15	0		Charge	12:46:15	10		Tap
14:27:30	0		Charge	7:43:30	10		Charge	12:46:30	10		Tap
14:27:45	0		Charge	7:43:45	15		Charge	12:46:45	15		Tap
14:28:00	0		Charge	7:44:00	25		Charge	12:47:00	15		Tap
14:28:15	0		Charge	7:44:15	35		Charge	12:47:15	10		Tap
14:28:30	0		Charge	7:44:30	35		Charge	12:47:30	15		Tap

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:28:45	0		Charge	7:44:45	35		Charge	12:47:45	30		Tap
14:29:00	0		Charge	7:45:00	35		Charge	12:48:00	25		Tap
14:29:15	0		Charge	7:45:15	40		Charge	12:48:15	25		Tap
14:29:30	0		Charge	7:45:30	35		Charge	12:48:30	25		Tap
14:29:45	0		Charge	7:45:45	35		Charge	12:48:45	30		Tap
14:30:00	0		Charge	7:46:00	30		Charge	12:49:00	30		Tap
14:30:15	0		Charge	7:46:15	30		Charge	12:49:15	25		Tap
14:30:30	0		Charge	7:46:30	30		Charge	12:49:30	25		Tap
14:30:45	0		Charge	7:46:45	25		Charge	12:49:45	25		Tap
14:31:00	0		Charge	7:47:00	25		Charge	12:50:00	30		Tap
14:31:15	5		Charge	7:47:15	20		Charge	12:50:15	25		Tap
14:31:30	10		Charge	7:47:30	20		Charge	12:50:30	25		Tap
14:31:45	10		Charge	7:47:45	15		Charge	12:50:45	20		Tap
14:32:00	5		Charge	7:48:00	15		Charge	12:51:00	15		Tap
14:32:15	5		Charge	7:48:15	10		Charge	12:51:15	15		Tap
14:32:30	5		Charge	7:48:30	20		Charge	12:51:30	10		Tap
14:32:45	0		Charge	7:48:45	25		Charge	12:51:45	5		Tap
14:33:00	0		Charge	7:49:00	20		Charge	12:52:00	5		Tap
14:33:15	0		Charge	7:49:15	5		Charge	12:52:15	10		Tap
14:33:30	0		Charge	7:49:30	5		Charge	12:52:30	5		Tap
14:33:45	0		Charge	7:49:45	5		Charge	12:52:45	5		Tap
14:34:00	0		Charge	7:50:00	5		Charge	12:53:00	0		Tap
14:34:15	0		Charge	7:50:15	5		Charge	12:53:15	0		Tap
14:34:30	0		Charge	7:50:30	0		Charge	12:53:30	0		Tap
14:34:45	0		Charge	7:50:45	0		Charge	12:53:45	0	15.47	Tap
14:35:00	0		Charge	7:51:00	0		Charge	12:54:00	0		Charge
14:35:15	5		Charge	7:51:15	30		Charge	12:54:15	0		Charge
14:35:30	5		Charge	7:51:30	30		Charge	12:54:30	0		Charge
14:35:45	0		Charge	7:51:45	40		Charge	12:54:45	0		Charge
14:36:00	0		Charge	7:52:00	35		Charge	12:55:00	0		Charge
14:36:15	0		Charge	7:52:15	25		Charge	12:55:15	25		Charge
14:36:30	0		Charge	7:52:30	20		Charge	12:55:30	35		Charge
14:36:45	0		Charge	7:52:45	20		Charge	12:55:45	30		Charge
14:37:00	5		Charge	7:53:00	10		Charge	12:56:00	30		Charge
14:37:15	0		Charge	7:53:15	0		Charge	12:56:15	25		Charge
14:37:30	0		Charge	7:53:30	0		Charge	12:56:30	30		Charge
14:37:45	0	1.60	Charge	7:53:45	0		Charge	12:56:45	30		Charge
14:38:00	0		Tap	7:54:00	10		Charge	12:57:00	30		Charge
14:38:15	0		Tap	7:54:15	10		Charge	12:57:15	35		Charge
14:38:30	0		Tap	7:54:30	10		Charge	12:57:30	35		Charge
14:38:45	0		Tap	7:54:45	10		Charge	12:57:45	30		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:39:00	0		Tap	7:55:00	10		Charge	12:58:00	25		Charge
14:39:15	0		Tap	7:55:15	0		Charge	12:58:15	25		Charge
14:39:30	0		Tap	7:55:30	0		Charge	12:58:30	20		Charge
14:39:45	0		Tap	7:55:45	0		Charge	12:58:45	20		Charge
14:40:00	0		Tap	7:56:00	0		Charge	12:59:00	10		Charge
14:40:15	0		Tap	7:56:15	0		Charge	12:59:15	10		Charge
14:40:30	0		Tap	7:56:30	0		Charge	12:59:30	5		Charge
14:40:45	5		Tap	7:56:45	15		Charge	12:59:45	5		Charge
14:41:00	5		Tap	7:57:00	15		Charge	13:00:00	0		Charge
14:41:15	5		Tap	7:57:15	10		Charge	13:00:15	0		Charge
14:41:30	10		Tap	7:57:30	0		Charge	13:00:30	0		Charge
14:41:45	10		Tap	7:57:45	0		Charge	13:00:45	0		Charge
14:42:00	5		Tap	7:58:00	0		Charge	13:01:00	0		Charge
14:42:15	5		Tap	7:58:15	15		Charge	13:01:15	0		Charge
14:42:30	5		Tap	7:58:30	10		Charge	13:01:30	0		Charge
14:42:45	0		Tap	7:58:45	10		Charge	13:01:45	0		Charge
14:43:00	0		Tap	7:59:00	10		Charge	13:02:00	0		Charge
14:43:15	10		Tap	7:59:15	5		Charge	13:02:15	0		Charge
14:43:30	10		Tap	7:59:30	0		Charge	13:02:30	0		Charge
14:43:45	15		Tap	7:59:45	0	11.20	Charge	13:02:45	0		Charge
14:44:00	15		Tap	8:00:00	0		Melt	13:03:00	0		Charge
14:44:15	15		Tap	8:00:15	0		Melt	13:03:15	0		Charge
14:44:30	15		Tap	8:00:30	0		Melt	13:03:30	0		Charge
14:44:45	10	5.00	Tap	8:00:45	0		Melt	13:03:45	0	11.38	Charge
14:45:00	10		Charge	8:01:00	0		Melt	13:04:00	0		Melt
14:45:15	15		Charge	8:01:15	0		Melt	13:04:15	0		Melt
14:45:30	15		Charge	8:01:30	0		Melt	13:04:30	0		Melt
14:45:45	15		Charge	8:01:45	0		Melt	13:04:45	0		Melt
14:46:00	15		Charge	8:02:00	0		Melt	13:05:00	0		Melt
14:46:15	20		Charge	8:02:15	0		Melt	13:05:15	0		Melt
14:46:30	20		Charge	8:02:30	0		Melt	13:05:30	0		Melt
14:46:45	20		Charge	8:02:45	0		Melt	13:05:45	0		Melt
14:47:00	20		Charge	8:03:00	0		Melt	13:06:00	0		Melt
14:47:15	15		Charge	8:03:15	0		Melt	13:06:15	0		Melt
14:47:30	15		Charge	8:03:30	0		Melt	13:06:30	0		Melt
14:47:45	15		Charge	8:03:45	0		Melt	13:06:45	0		Melt
14:48:00	10		Charge	8:04:00	0		Melt	13:07:00	0		Melt
14:48:15	10		Charge	8:04:15	0		Melt	13:07:15	0		Melt
14:48:30	5		Charge	8:04:30	0		Melt	13:07:30	0		Melt
14:48:45	5		Charge	8:04:45	0		Melt	13:07:45	0		Melt
14:49:00	5		Charge	8:05:00	0		Melt	13:08:00	0		Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:49:15	5		Charge	8:05:15	0		Melt	13:08:15	0		Melt
14:49:30	10		Charge	8:05:30	0		Melt	13:08:30	0		Melt
14:49:45	15		Charge	8:05:45	0	0.00	Melt	13:08:45	0		Melt
14:50:00	10		Charge	8:06:00	0	0.00	Melt	13:09:00	0		Melt
14:50:15	10		Charge	8:06:15	0	0.00	Melt	13:09:15	0		Melt
14:50:30	10		Charge	8:06:30	0	0.00	Melt	13:09:30	0		Melt
14:50:45	15		Charge	8:06:45	0	0.00	Melt	13:09:45	0	0.00	Melt
14:51:00	15		Charge	8:07:00	0	0.00	Melt	13:10:00	0	0.00	Melt
14:51:15	10		Charge	8:07:15	0	0.00	Melt	13:10:15	0	0.00	Melt
14:51:30	5		Charge	8:07:30	0	0.00	Melt	13:10:30	0	0.00	Melt
14:51:45	5		Charge	8:07:45	0	0.00	Melt	13:10:45	0	0.00	Melt
14:52:00	5		Charge	8:08:00	0	0.00	Melt	13:11:00	0	0.00	Melt
14:52:15	10		Charge	8:08:15	0	0.00	Melt	13:11:15	0	0.00	Melt
14:52:30	15		Charge	8:08:30	0	0.00	Melt	13:11:30	0	0.00	Melt
14:52:45	20		Charge	8:08:45	0	0.00	Melt	13:11:45	0	0.00	Melt
14:53:00	15		Charge	8:09:00	0	0.00	Melt	13:12:00	0	0.00	Melt
14:53:15	10		Charge	8:09:15	0	0.00	Melt	13:12:15	0	0.00	Melt
14:53:30	10		Charge	8:09:30	0	0.00	Melt	13:12:30	0	0.00	Melt
14:53:45	5		Charge	8:09:45	0	0.00	Melt	13:12:45	0	0.00	Melt
14:54:00	5		Charge	8:10:00	0	0.00	Melt	13:13:00	0	0.00	Melt
14:54:15	5		Charge	8:10:15	0	0.00	Melt	13:13:15	0	0.00	Melt
14:54:30	5		Charge	8:10:30	0	0.00	Melt	13:13:30	0	0.00	Melt
14:54:45	5		Charge	8:10:45	0	0.00	Melt	13:13:45	0	0.00	Melt
14:55:00	5		Charge	8:11:00	0	0.00	Melt	13:14:00	0	0.00	Melt
14:55:15	0		Charge	8:11:15	0	0.00	Melt	13:14:15	0	0.00	Melt
14:55:30	0		Charge	8:11:30	0	0.00	Melt	13:14:30	0	0.00	Melt
14:55:45	0	10.34	Charge	8:11:45	0	0.00	Melt	13:14:45	0	0.00	Melt
14:56:00	0		Melt	8:12:00	0	0.00	Melt	13:15:00	0	0.00	Melt
14:56:15	0		Melt	8:12:15	0	0.00	Melt	13:15:15	0	0.00	Melt
14:56:30	0		Melt	8:12:30	0	0.00	Melt	13:15:30	0	0.00	Melt
14:56:45	0		Melt	8:12:45	0	0.00	Melt	13:15:45	0	0.00	Melt
14:57:00	0		Melt	8:13:00	0	0.00	Melt	13:16:00	0	0.00	Melt
14:57:15	0		Melt	8:13:15	0	0.00	Melt	13:16:15	0	0.00	Melt
14:57:30	0		Melt	8:13:30	0	0.00	Melt	13:16:30	0	0.00	Melt
14:57:45	0		Melt	8:13:45	0	0.00	Melt	13:16:45	0	0.00	Melt
14:58:00	0		Melt	8:14:00	0	0.00	Melt	13:17:00	0	0.00	Melt
14:58:15	0		Melt	8:14:15	0	0.00	Melt	13:17:15	0	0.00	Melt
14:58:30	0		Melt	8:14:30	0	0.00	Melt	13:17:30	0	0.00	Melt
14:58:45	0		Melt	8:14:45	0	0.00	Melt	13:17:45	0	0.00	Melt
14:59:00	0		Melt	8:15:00	0	0.00	Melt	13:18:00	0	0.00	Melt
14:59:15	0		Melt	8:15:15	0	0.00	Melt	13:18:15	0	0.00	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:59:30	0		Melt	8:15:30	0	0.00	Melt	13:18:30	0	0.00	Melt
14:59:45	10		Melt	8:15:45	0	0.00	Melt	13:18:45	0	0.00	Melt
15:00:00	10		Melt	8:16:00	0	0.00	Melt	13:19:00	0	0.00	Melt
15:00:15	5		Melt	8:16:15	0	0.00	Melt	13:19:15	0	0.00	Melt
15:00:30	5		Melt	8:16:30	0	0.00	Melt	13:19:30	0	0.00	Melt
15:00:45	5		Melt	8:16:45	0	0.00	Melt	13:19:45	0	0.00	Melt
15:01:00	5		Melt	8:17:00	0	0.00	Melt	13:20:00	0	0.00	Melt
15:01:15	0		Melt	8:17:15	0	0.00	Melt	13:20:15	0	0.00	Melt
15:01:30	0		Melt	8:17:30	0	0.00	Melt	13:20:30	0	0.00	Melt
15:01:45	0	1.67	Melt	8:17:45	0	0.00	Melt	13:20:45	0	0.00	Melt
15:02:00	0	1.67	Melt	8:18:00	0	0.00	Melt	13:21:00	0	0.00	Melt
15:02:15	0	1.67	Melt	8:18:15	0	0.00	Melt	13:21:15	0	0.00	Melt
15:02:30	0	1.67	Melt	8:18:30	0	0.00	Melt	13:21:30	0	0.00	Melt
15:02:45	0	1.67	Melt	8:18:45	0	0.00	Melt	13:21:45	0	0.00	Melt
15:03:00	0	1.67	Melt	8:19:00	0	0.00	Melt	13:22:00	0	0.00	Melt
15:03:15	0	1.67	Melt	8:19:15	0	0.00	Melt	13:22:15	0	0.00	Melt
15:03:30	0	1.67	Melt	8:19:30	0	0.00	Melt	13:22:30	0	0.00	Melt
15:03:45	0	1.67	Melt	8:19:45	0	0.00	Melt	13:22:45	0	0.00	Melt
15:04:00	0	1.67	Melt	8:20:00	0	0.00	Melt	13:23:00	0	0.00	Melt
15:04:15	0	1.67	Melt	8:20:15	0	0.00	Melt	13:23:15	0	0.00	Melt
15:04:30	0	1.67	Melt	8:20:30	0	0.00	Melt	13:23:30	0	0.00	Melt
15:04:45	0	1.67	Melt	8:20:45	0	0.00	Melt	13:23:45	0	0.00	Melt
15:05:00	0	1.67	Melt	8:21:00	0	0.00	Melt	13:24:00	0	0.00	Melt
15:05:15	0	1.67	Melt	8:21:15	0	0.00	Melt	13:24:15	0	0.00	Melt
15:05:30	0	1.67	Melt	8:21:30	0	0.00	Melt	13:24:30	0	0.00	Melt
15:05:45	0	1.25	Melt	8:21:45	0	0.00	Melt	13:24:45	0	0.00	Melt
15:06:00	0	0.83	Melt	8:22:00	0	0.00	Melt	13:25:00	0		Tap
15:06:15	0	0.63	Melt	8:22:15	0	0.00	Melt	13:25:15	0		Tap
15:06:30	0	0.42	Melt	8:22:30	0	0.00	Melt	13:25:30	0		Tap
15:06:45	0	0.21	Melt	8:22:45	0	0.00	Melt	13:25:45	0		Tap
15:07:00	0	0.00	Melt	8:23:00	0	0.00	Melt	13:26:00	15		Tap
15:07:15	0	0.00	Melt	8:23:15	0	0.00	Melt	13:26:15	15		Tap
15:07:30	0	0.00	Melt	8:23:30	0	0.00	Melt	13:26:30	10		Tap
15:07:45	0	0.00	Melt	8:23:45	0	0.00	Melt	13:26:45	5		Tap
15:08:00	0	0.00	Melt	8:24:00	0	0.00	Melt	13:27:00	10		Tap
15:08:15	5	0.21	Melt	8:24:15	0	0.00	Melt	13:27:15	5		Tap
15:08:30	5	0.42	Melt	8:24:30	0	0.00	Melt	13:27:30	0		Tap
15:08:45	5	0.63	Melt	8:24:45	0	0.00	Melt	13:27:45	10		Tap
15:09:00	5	0.83	Melt	8:25:00	0	0.00	Melt	13:28:00	5		Tap
15:09:15	0	0.83	Melt	8:25:15	0	0.00	Melt	13:28:15	5		Tap
15:09:30	0	0.83	Melt	8:25:30	0	0.00	Melt	13:28:30	0		Tap

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:09:45	0	0.83	Melt	8:25:45	0	0.00	Melt	13:28:45	0		Tap
15:10:00	0		Tap	8:26:00	0	0.00	Melt	13:29:00	0		Tap
15:10:15	0		Tap	8:26:15	0	0.00	Melt	13:29:15	0		Tap
15:10:30	0		Tap	8:26:30	0	0.00	Melt	13:29:30	0		Tap
15:10:45	5		Tap	8:26:45	0	0.00	Melt	13:29:45	0		Tap
15:11:00	5		Tap	8:27:00	0	0.00	Melt	13:30:00	0		Tap
15:11:15	10		Tap	8:27:15	0	0.00	Melt	13:30:15	0		Tap
15:11:30	20		Tap	8:27:30	0	0.00	Melt	13:30:30	0		Tap
15:11:45	15		Tap	8:27:45	0	0.00	Melt	13:30:45	0		Tap
15:12:00	15		Tap	8:28:00	0	0.00	Melt	13:31:00	0		Tap
15:12:15	15		Tap	8:28:15	0	0.00	Melt	13:31:15	0		Tap
15:12:30	10		Tap	8:28:30	0	0.00	Melt	13:31:30	0		Tap
15:12:45	10		Tap	8:28:45	0	0.00	Melt	13:31:45	0		Tap
15:13:00	15		Tap	8:29:00	0	0.00	Melt	13:32:00	0		Tap
15:13:15	15		Tap	8:29:15	0	0.00	Melt	13:32:15	0		Tap
15:13:30	15		Tap	8:29:30	0	0.00	Melt	13:32:30	0		Tap
15:13:45	15		Tap	8:29:45	0	0.00	Melt	13:32:45	0	2.50	Tap
15:14:00	10		Tap	8:30:00	0		Charge	13:33:00	0		Charge
15:14:15	5		Tap	8:30:15	0		Charge	13:33:15	0		Charge
15:14:30	5		Tap	8:30:30	25		Charge	13:33:30	0		Charge
15:14:45	5		Tap	8:30:45	30		Charge	13:33:45	0		Charge
15:15:00	5		Tap	8:31:00	25		Charge	13:34:00	0		Charge
15:15:15	0		Tap	8:31:15	25		Charge	13:34:15	0		Charge
15:15:30	0		Tap	8:31:30	10		Charge	13:34:30	0		Charge
15:15:45	0		Tap	8:31:45	40		Charge	13:34:45	0		Charge
15:16:00	0		Tap	8:32:00	30		Charge	13:35:00	0		Charge
15:16:15	0		Tap	8:32:15	25		Charge	13:35:15	0		Charge
15:16:30	10		Tap	8:32:30	20		Charge	13:35:30	0		Charge
15:16:45	10	7.68	Tap	8:32:45	15		Charge	13:35:45	0		Charge
15:17:00	5		Charge	8:33:00	5		Charge	13:36:00	0		Charge
15:17:15	5		Charge	8:33:15	0		Charge	13:36:15	0		Charge
15:17:30	5		Charge	8:33:30	0		Charge	13:36:30	0		Charge
15:17:45	0		Charge	8:33:45	0		Charge	13:36:45	0		Charge
15:18:00	0		Charge	8:34:00	0		Charge	13:37:00	0		Charge
15:18:15	0		Charge	8:34:15	0		Charge	13:37:15	0		Charge
15:18:30	0		Charge	8:34:30	0		Charge	13:37:30	0		Charge
15:18:45	0		Charge	8:34:45	0		Charge	13:37:45	0		Charge
15:19:00	0		Charge	8:35:00	0		Charge	13:38:00	0		Charge
15:19:15	0		Charge	8:35:15	0		Charge	13:38:15	0		Charge
15:19:30	0		Charge	8:35:30	0		Charge	13:38:30	0		Charge
15:19:45	0		Charge	8:35:45	0	10.42	Charge	13:38:45	0		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:20:00	0		Charge	8:36:00	0		Melt	13:39:00	0		Charge
15:20:15	0		Charge	8:36:15	0		Melt	13:39:15	0		Charge
15:20:30	0		Charge	8:36:30	0		Melt	13:39:30	0		Charge
15:20:45	0		Charge	8:36:45	0		Melt	13:39:45	0		Charge
15:21:00	0		Charge	8:37:00	0		Melt	13:40:00	20		Charge
15:21:15	0		Charge	8:37:15	0		Melt	13:40:15	35		Charge
15:21:30	0		Charge	8:37:30	0		Melt	13:40:30	35		Charge
15:21:45	0		Charge	8:37:45	0		Melt	13:40:45	30		Charge
15:22:00	0		Charge	8:38:00	0		Melt	13:41:00	30		Charge
15:22:15	0		Charge	8:38:15	0		Melt	13:41:15	25		Charge
15:22:30	0		Charge	8:38:30	0		Melt	13:41:30	30		Charge
15:22:45	0		Charge	8:38:45	0		Melt	13:41:45	20		Charge
15:23:00	0		Charge	8:39:00	0		Melt	13:42:00	25		Charge
15:23:15	0		Charge	8:39:15	0		Melt	13:42:15	25		Charge
15:23:30	0		Charge	8:39:30	0		Melt	13:42:30	30		Charge
15:23:45	0		Charge	8:39:45	0		Melt	13:42:45	20		Charge
15:24:00	0		Charge	8:40:00	0		Melt	13:43:00	20		Charge
15:24:15	10		Charge	8:40:15	0		Melt	13:43:15	20		Charge
15:24:30	10		Charge	8:40:30	0		Melt	13:43:30	15		Charge
15:24:45	5		Charge	8:40:45	0		Melt	13:43:45	20		Charge
15:25:00	5		Charge	8:41:00	0		Melt	13:44:00	20		Charge
15:25:15	5		Charge	8:41:15	0		Melt	13:44:15	20		Charge
15:25:30	5		Charge	8:41:30	0		Melt	13:44:30	15		Charge
15:25:45	10		Charge	8:41:45	0	0.00	Melt	13:44:45	15		Charge
15:26:00	10		Charge	8:42:00	0	0.00	Melt	13:45:00	20		Charge
15:26:15	10		Charge	8:42:15	0	0.00	Melt	13:45:15	15		Charge
15:26:30	5		Charge	8:42:30	0	0.00	Melt	13:45:30	15		Charge
15:26:45	5		Charge	8:42:45	0	0.00	Melt	13:45:45	10		Charge
15:27:00	5		Charge	8:43:00	0	0.00	Melt	13:46:00	10		Charge
15:27:15	0		Charge	8:43:15	0	0.00	Melt	13:46:15	10		Charge
15:27:30	0		Charge	8:43:30	0	0.00	Melt	13:46:30	10		Charge
15:27:45	0		Charge	8:43:45	0	0.00	Melt	13:46:45	15		Charge
15:28:00	0		Charge	8:44:00	0	0.00	Melt	13:47:00	15		Charge
15:28:15	0		Charge	8:44:15	0	0.00	Melt	13:47:15	15		Charge
15:28:30	0		Charge	8:44:30	0	0.00	Melt	13:47:30	15		Charge
15:28:45	0		Charge	8:44:45	0	0.00	Melt	13:47:45	5		Charge
15:29:00	0		Charge	8:45:00	15		Tap	13:48:00	10		Charge
15:29:15	0		Charge	8:45:15	15		Tap	13:48:15	5		Charge
15:29:30	0		Charge	8:45:30	15		Tap	13:48:30	5		Charge
15:29:45	0		Charge	8:45:45	20		Tap	13:48:45	10		Charge
15:30:00	0		Charge	8:46:00	15		Tap	13:49:00	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:30:15	0		Charge	8:46:15	15		Tap	13:49:15	5		Charge
15:30:30	0		Charge	8:46:30	20		Tap	13:49:30	0		Charge
15:30:45	0		Charge	8:46:45	20		Tap	13:49:45	0		Charge
15:31:00	0		Charge	8:47:00	20		Tap	13:50:00	0		Charge
15:31:15	0		Charge	8:47:15	20		Tap	13:50:15	0		Charge
15:31:30	5		Charge	8:47:30	25		Tap	13:50:30	0		Charge
15:31:45	10		Charge	8:47:45	30		Tap	13:50:45	10		Charge
15:32:00	10		Charge	8:48:00	25		Tap	13:51:00	10		Charge
15:32:15	5		Charge	8:48:15	25		Tap	13:51:15	10		Charge
15:32:30	5		Charge	8:48:30	30		Tap	13:51:30	15		Charge
15:32:45	5		Charge	8:48:45	25		Tap	13:51:45	15		Charge
15:33:00	0		Charge	8:49:00	25		Tap	13:52:00	20		Charge
15:33:15	0		Charge	8:49:15	25		Tap	13:52:15	20		Charge
15:33:30	0		Charge	8:49:30	25		Tap	13:52:30	15		Charge
15:33:45	0		Charge	8:49:45	20		Tap	13:52:45	15		Charge
15:34:00	0		Charge	8:50:00	15		Tap	13:53:00	10		Charge
15:34:15	0		Charge	8:50:15	10		Tap	13:53:15	10		Charge
15:34:30	0		Charge	8:50:30	10		Tap	13:53:30	5		Charge
15:34:45	0		Charge	8:50:45	5	19.58	Tap	13:53:45	5		Charge
15:35:00	0		Charge	8:51:00	0		Charge	13:54:00	5		Charge
15:35:15	0		Charge	8:51:15	0		Charge	13:54:15	0		Charge
15:35:30	0		Charge	8:51:30	0		Charge	13:54:30	0		Charge
15:35:45	0		Charge	8:51:45	0		Charge	13:54:45	0		Charge
15:36:00	0		Charge	8:52:00	0		Charge	13:55:00	0		Charge
15:36:15	0		Charge	8:52:15	10		Charge	13:55:15	0		Charge
15:36:30	0		Charge	8:52:30	10		Charge	13:55:30	0		Charge
15:36:45	0		Charge	8:52:45	5		Charge	13:55:45	0		Charge
15:37:00	0		Charge	8:53:00	0		Charge	13:56:00	0		Charge
15:37:15	0		Charge	8:53:15	0		Charge	13:56:15	0		Charge
15:37:30	0		Charge	8:53:30	0		Charge	13:56:30	0		Charge
15:37:45	0		Charge	8:53:45	0		Charge	13:56:45	0		Charge
15:38:00	0		Charge	8:54:00	0		Charge	13:57:00	0		Charge
15:38:15	0		Charge	8:54:15	0		Charge	13:57:15	0		Charge
15:38:30	0		Charge	8:54:30	0		Charge	13:57:30	0		Charge
15:38:45	0		Charge	8:54:45	0		Charge	13:57:45	0		Charge
15:39:00	0		Charge	8:55:00	0		Charge	13:58:00	0		Charge
15:39:15	5		Charge	8:55:15	0		Charge	13:58:15	0		Charge
15:39:30	5		Charge	8:55:30	0		Charge	13:58:30	0		Charge
15:39:45	5		Charge	8:55:45	0		Charge	13:58:45	0		Charge
15:40:00	5		Charge	8:56:00	0		Charge	13:59:00	0		Charge
15:40:15	0		Charge	8:56:15	0		Charge	13:59:15	0		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:40:30	0		Charge	8:56:30	0		Charge	13:59:30	0		Charge
15:40:45	0		Charge	8:56:45	0		Charge	13:59:45	0		Charge
15:41:00	0		Charge	8:57:00	0		Charge	14:00:00	0		Charge
15:41:15	0		Charge	8:57:15	0		Charge	14:00:15	0		Charge
15:41:30	0		Charge	8:57:30	0		Charge	14:00:30	0		Charge
15:41:45	0		Charge	8:57:45	0		Charge	14:00:45	0		Charge
15:42:00	0		Charge	8:58:00	0		Charge	14:01:00	0		Charge
15:42:15	0		Charge	8:58:15	0		Charge	14:01:15	0		Charge
15:42:30	0		Charge	8:58:30	0		Charge	14:01:30	0		Charge
15:42:45	0	1.54	Charge	8:58:45	0		Charge	14:01:45	0		Charge
15:43:00	0		Melt	8:59:00	10		Charge	14:02:00	0		Charge
15:43:15	0		Melt	8:59:15	15		Charge	14:02:15	0		Charge
15:43:30	0		Melt	8:59:30	15		Charge	14:02:30	0		Charge
15:43:45	0		Melt	8:59:45	0		Charge	14:02:45	0		Charge
15:44:00	0		Melt	9:00:00	0		Charge	14:03:00	10		Charge
15:44:15	0		Melt	9:00:15	0		Charge	14:03:15	15		Charge
15:44:30	0		Melt	9:00:30	0		Charge	14:03:30	20		Charge
15:44:45	0		Melt	9:00:45	0		Charge	14:03:45	20		Charge
15:45:00	0		Melt	9:01:00	0		Charge	14:04:00	20		Charge
15:45:15	0		Melt	9:01:15	0		Charge	14:04:15	20		Charge
15:45:30	0		Melt	9:01:30	0		Charge	14:04:30	15		Charge
15:45:45	0		Melt	9:01:45	0		Charge	14:04:45	15		Charge
15:46:00	0		Melt	9:02:00	0		Charge	14:05:00	15		Charge
15:46:15	0		Melt	9:02:15	0		Charge	14:05:15	15		Charge
15:46:30	0		Melt	9:02:30	0		Charge	14:05:30	20		Charge
15:46:45	0		Melt	9:02:45	0		Charge	14:05:45	25		Charge
15:47:00	0		Melt	9:03:00	0		Charge	14:06:00	30		Charge
15:47:15	0		Melt	9:03:15	0		Charge	14:06:15	30		Charge
15:47:30	0		Melt	9:03:30	0		Charge	14:06:30	35		Charge
15:47:45	0		Melt	9:03:45	0	1.25	Charge	14:06:45	40		Charge
15:48:00	LMF Cond		Melt	9:04:00	0		Melt	14:07:00	40		Charge
15:48:15	LMF Cond		Melt	9:04:15	0		Melt	14:07:15	40		Charge
15:48:30	LMF Cond		Melt	9:04:30	0		Melt	14:07:30	50		Charge
15:48:45	LMF Cond		Melt	9:04:45	0		Melt	14:07:45	40		Charge
15:49:00	LMF Cond		Melt	9:05:00	0		Melt	14:08:00	40		Charge
15:49:15	LMF Cond		Melt	9:05:15	0		Melt	14:08:15	30		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:49:30	LMF Cond		Melt	9:05:30	0		Melt	14:08:30	40		Charge
15:49:45	LMF Cond		Melt	9:05:45	0		Melt	14:08:45	30		Charge
15:50:00	LMF Cond		Melt	9:06:00	10		Melt	14:09:00	30		Charge
15:50:15	0		Melt	9:06:15	0		Melt	14:09:15	30		Charge
15:50:30	0		Melt	9:06:30	0		Melt	14:09:30	30		Charge
15:50:45	0		Melt	9:06:45	0		Melt	14:09:45	30		Charge
15:51:00	0		Melt	9:07:00	0		Melt	14:10:00	25		Charge
15:51:15	0		Melt	9:07:15	0		Melt	14:10:15	25		Charge
15:51:30	5		Melt	9:07:30	0		Melt	14:10:30	25		Charge
15:51:45	5		Melt	9:07:45	10		Melt	14:10:45	25		Charge
15:52:00	5		Melt	9:08:00	0		Melt	14:11:00	15		Charge
15:52:15	5		Melt	9:08:15	0		Melt	14:11:15	10		Charge
15:52:30	5		Melt	9:08:30	0		Melt	14:11:30	10		Charge
15:52:45	0		Melt	9:08:45	0		Melt	14:11:45	10		Charge
15:53:00	0		Melt	9:09:00	0		Melt	14:12:00	5		Charge
15:53:15	0		Melt	9:09:15	0		Melt	14:12:15	5		Charge
15:53:30	0		Melt	9:09:30	0		Melt	14:12:30	0		Charge
15:53:45	10		Melt	9:09:45	0	0.83	Melt	14:12:45	15		Charge
15:54:00	15		Melt	9:10:00	0	0.83	Melt	14:13:00	15		Charge
15:54:15	10		Melt	9:10:15	0	0.83	Melt	14:13:15	20		Charge
15:54:30	25		Melt	9:10:30	0	0.83	Melt	14:13:30	20		Charge
15:54:45	70		Melt	9:10:45	0	0.83	Melt	14:13:45	20		Charge
15:55:00	75		Melt	9:11:00	0	0.83	Melt	14:14:00	20		Charge
15:55:15	80		Melt	9:11:15	0	0.83	Melt	14:14:15	25		Charge
15:55:30	70		Melt	9:11:30	0	0.83	Melt	14:14:30	25		Charge
15:55:45	65	19.35	Melt	9:11:45	0	0.83	Melt	14:14:45	20		Charge
15:56:00	75	21.67	Melt	9:12:00	0	0.42	Melt	14:15:00	15		Charge
15:56:15	90	25.42	Melt	9:12:15	0	0.42	Melt	14:15:15	15		Charge
15:56:30	85	28.96	Melt	9:12:30	0	0.42	Melt	14:15:30	15		Charge
15:56:45	80	32.29	Melt	9:12:45	0	0.42	Melt	14:15:45	10		Charge
15:57:00	70	35.21	Melt	9:13:00	0	0.42	Melt	14:16:00	10		Charge
15:57:15	50	37.29	Melt	9:13:15	0	0.42	Melt	14:16:15	20		Charge
15:57:30	50	39.17	Melt	9:13:30	0	0.42	Melt	14:16:30	20		Charge
15:57:45	50	41.04	Melt	9:13:45	0	0.00	Melt	14:16:45	10		Charge
15:58:00	60	43.33	Melt	9:14:00	0	0.00	Melt	14:17:00	20		Charge
15:58:15	60	45.63	Melt	9:14:15	0	0.00	Melt	14:17:15	15		Charge
15:58:30	70	48.33	Melt	9:14:30	0	0.00	Melt	14:17:30	15		Charge
15:58:45	65	51.04	Melt	9:14:45	0	0.00	Melt	14:17:45	15	11.81	Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:59:00	65	53.75	Melt	9:15:00	0	0.00	Melt	14:18:00	10		Melt
15:59:15	65	56.46	Melt	9:15:15	0	0.00	Melt	14:18:15	10		Melt
15:59:30	60	58.96	Melt	9:15:30	0	0.00	Melt	14:18:30	10		Melt
15:59:45	50	60.63	Melt	9:15:45	0	0.00	Melt	14:18:45	15		Melt
16:00:00	40	61.67	Melt	9:16:00	0	0.00	Melt	14:19:00	15		Melt
16:00:15	35	62.71	Melt	9:16:15	0	0.00	Melt	14:19:15	15		Melt
16:00:30	25	62.71	Melt	9:16:30	0	0.00	Melt	14:19:30	15		Melt
16:00:45	20	60.63	Melt	9:16:45	0	0.00	Melt	14:19:45	15		Melt
16:01:00	20	58.33	Melt	9:17:00	0	0.00	Melt	14:20:00	15		Melt
16:01:15	15	55.63	Melt	9:17:15	0	0.00	Melt	14:20:15	15		Melt
16:01:30	15	53.33	Melt	9:17:30	0	0.00	Melt	14:20:30	15		Melt
16:01:45	15	51.25	Melt	9:17:45	0	0.00	Melt	14:20:45	15		Melt
16:02:00	15	48.75	Melt	9:18:00	0	0.00	Melt	14:21:00	15		Melt
16:02:15	10	45.42	Melt	9:18:15	0	0.00	Melt	14:21:15	15		Melt
16:02:30	10	42.29	Melt	9:18:30	0	0.00	Melt	14:21:30	15		Melt
16:02:45	5	39.17	Melt	9:18:45	0	0.00	Melt	14:21:45	15		Melt
16:03:00	5	36.46	Melt	9:19:00	0	0.00	Melt	14:22:00	15		Melt
16:03:15	5	34.58	Melt	9:19:15	0	0.00	Melt	14:22:15	15		Melt
16:03:30	10	32.92	Melt	9:19:30	0	0.00	Melt	14:22:30	15		Melt
16:03:45	15	31.46	Melt	9:19:45	0	0.00	Melt	14:22:45	15		Melt
16:04:00	15	29.58	Melt	9:20:00	0	0.00	Melt	14:23:00	15		Melt
16:04:15	15	27.71	Melt	9:20:15	0	0.00	Melt	14:23:15	15		Melt
16:04:30	15	25.42	Melt	9:20:30	0	0.00	Melt	14:23:30	15		Melt
16:04:45	5	22.92	Melt	9:20:45	0	0.00	Melt	14:23:45	15	14.38	Melt
16:05:00	5	20.42	Melt	9:21:00	0	0.00	Melt	14:24:00	15	14.58	Melt
16:05:15	5	17.92	Melt	9:21:15	0	0.00	Melt	14:24:15	20	15.00	Melt
16:05:30	5	15.63	Melt	9:21:30	0	0.00	Melt	14:24:30	20	15.42	Melt
16:05:45	0	13.54	Melt	9:21:45	0	0.00	Melt	14:24:45	30	16.04	Melt
16:06:00	0	11.88	Melt	9:22:00	0	0.00	Melt	14:25:00	30	16.67	Melt
16:06:15	0	10.42	Melt	9:22:15	0	0.00	Melt	14:25:15	25	17.08	Melt
16:06:30	0	9.38	Melt	9:22:30	0	0.00	Melt	14:25:30	20	17.29	Melt
16:06:45	0	8.54	Melt	9:22:45	0	0.00	Melt	14:25:45	20	17.50	Melt
16:07:00	0	7.71	Melt	9:23:00	0	0.00	Melt	14:26:00	20	17.71	Melt
16:07:15	0	7.08	Melt	9:23:15	0	0.00	Melt	14:26:15	15	17.71	Melt
16:07:30	0	6.46	Melt	9:23:30	0	0.00	Melt	14:26:30	15	17.71	Melt
16:07:45	0	5.83	Melt	9:23:45	0	0.00	Melt	14:26:45	15	17.71	Melt
16:08:00	0	5.21	Melt	9:24:00	0	0.00	Melt	14:27:00	15	17.71	Melt
16:08:15	0	4.79	Melt	9:24:15	0	0.00	Melt	14:27:15	15	17.71	Melt
16:08:30	0	4.38	Melt	9:24:30	10	0.42	Melt	14:27:30	15	17.71	Melt
16:08:45	0	4.17	Melt	9:24:45	10	0.83	Melt	14:27:45	15	17.71	Melt
16:09:00	0	3.96	Melt	9:25:00	10	1.25	Melt	14:28:00	15	17.71	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:09:15	0	3.75	Melt	9:25:15	10	1.67	Melt	14:28:15	15	17.71	Melt
16:09:30	0	3.33	Melt	9:25:30	10	2.08	Melt	14:28:30	15	17.71	Melt
16:09:45	0	2.71	Melt	9:25:45	5	2.29	Melt	14:28:45	15	17.71	Melt
16:10:00	0	2.08	Melt	9:26:00	0	2.29	Melt	14:29:00	15	17.71	Melt
16:10:15	0	1.46	Melt	9:26:15	0	2.29	Melt	14:29:15	15	17.71	Melt
16:10:30	0	0.83	Melt	9:26:30	0	2.29	Melt	14:29:30	15	17.71	Melt
16:10:45	0	0.63	Melt	9:26:45	0	2.29	Melt	14:29:45	10	17.50	Melt
16:11:00	0	0.42	Melt	9:27:00	0	2.29	Melt	14:30:00	10	17.29	Melt
16:11:15	0	0.21	Melt	9:27:15	0	2.29	Melt	14:30:15	10	16.88	Melt
16:11:30	0	0.00	Melt	9:27:30	0	2.29	Melt	14:30:30	10	16.46	Melt
16:11:45	0	0.00	Melt	9:27:45	0	2.29	Melt	14:30:45	10	15.63	Melt
16:12:00	0	0.00	Melt	9:28:00	0	2.29	Melt	14:31:00	15	15.00	Melt
16:12:15	10	0.42	Melt	9:28:15	0	2.29	Melt	14:31:15	15	14.58	Melt
16:12:30	5	0.63	Melt	9:28:30	0	2.29	Melt	14:31:30	15	14.38	Melt
16:12:45	5	0.83	Melt	9:28:45	0	2.29	Melt	14:31:45	15	14.17	Melt
16:13:00	5	1.04	Melt	9:29:00	0	2.29	Melt	14:32:00	15	13.96	Melt
16:13:15	5	1.25	Melt	9:29:15	0	2.29	Melt	14:32:15	15	13.96	Melt
16:13:30	0	1.25	Melt	9:29:30	0	2.29	Melt	14:32:30	15	13.96	Melt
16:13:45	0	1.25	Melt	9:29:45	0	2.29	Melt	14:32:45	10	13.75	Melt
16:14:00	0	1.25	Melt	9:30:00	0	2.29	Melt	14:33:00	10	13.54	Melt
16:14:15	0	1.25	Melt	9:30:15	0	2.29	Melt	14:33:15	10	13.33	Melt
16:14:30	0	1.25	Melt	9:30:30	0	1.88	Melt	14:33:30	10	13.13	Melt
16:14:45	0	1.25	Melt	9:30:45	0	1.46	Melt	14:33:45	10	12.92	Melt
16:15:00	0	1.25	Melt	9:31:00	0		Charge	14:34:00	10	12.71	Melt
16:15:15	0	1.25	Melt	9:31:15	10		Charge	14:34:15	10	12.50	Melt
16:15:30	0	1.25	Melt	9:31:30	10		Charge	14:34:30	10	12.29	Melt
16:15:45	0	1.25	Melt	9:31:45	15		Charge	14:34:45	10	12.08	Melt
16:16:00	0	1.25	Melt	9:32:00	25		Charge	14:35:00	10		Tap
16:16:15	5	1.46	Melt	9:32:15	30		Charge	14:35:15	10		Tap
16:16:30	10	1.88	Melt	9:32:30	30		Charge	14:35:30	10		Tap
16:16:45	10	2.29	Melt	9:32:45	40		Charge	14:35:45	10		Tap
16:17:00	5	2.50	Melt	9:33:00	45		Charge	14:36:00	15		Tap
16:17:15	5	2.71	Melt	9:33:15	45		Charge	14:36:15	20		Tap
16:17:30	5	2.92	Melt	9:33:30	35		Charge	14:36:30	20		Tap
16:17:45	0	2.92	Melt	9:33:45	40		Charge	14:36:45	20		Tap
16:18:00	0	2.92	Melt	9:34:00	40		Charge	14:37:00	15		Tap
16:18:15	0	2.50	Melt	9:34:15	30		Charge	14:37:15	15		Tap
16:18:30	10	2.71	Melt	9:34:30	25		Charge	14:37:30	15		Tap
16:18:45	20	3.33	Melt	9:34:45	20		Charge	14:37:45	15		Tap
16:19:00	10	3.54	Melt	9:35:00	20		Charge	14:38:00	15		Tap
16:19:15	5	3.54	Melt	9:35:15	15		Charge	14:38:15	15		Tap

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:19:30	5	3.75	Melt	9:35:30	15		Charge	14:38:30	15		Tap
16:19:45	0	3.75	Melt	9:35:45	15		Charge	14:38:45	15		Tap
16:20:00	0		Charge	9:36:00	15		Charge	14:39:00	15		Tap
16:20:15	0		Charge	9:36:15	10		Charge	14:39:15	10		Tap
16:20:30	0		Charge	9:36:30	10		Charge	14:39:30	10		Tap
16:20:45	0		Charge	9:36:45	5	22.71	Charge	14:39:45	10		Tap
16:21:00	0		Charge	9:37:00	0		Melt	14:40:00	10		Tap
16:21:15	0		Charge	9:37:15	0		Melt	14:40:15	10		Tap
16:21:30	0		Charge	9:37:30	0		Melt	14:40:30	10		Tap
16:21:45	0		Charge	9:37:45	0		Melt	14:40:45	10		Tap
16:22:00	0		Charge	9:38:00	5		Melt	14:41:00	10		Tap
16:22:15	0		Charge	9:38:15	5		Melt	14:41:15	10		Tap
16:22:30	5		Charge	9:38:30	5		Melt	14:41:30	10		Tap
16:22:45	5		Charge	9:38:45	10		Melt	14:41:45	10		Tap
16:23:00	10		Charge	9:39:00	15		Melt	14:42:00	10		Tap
16:23:15	10		Charge	9:39:15	15		Melt	14:42:15	10		Tap
16:23:30	5		Charge	9:39:30	15		Melt	14:42:30	10		Tap
16:23:45	5		Charge	9:39:45	20		Melt	14:42:45	5	12.34	Tap
16:24:00	0		Charge	9:40:00	25		Melt	14:43:00	5		Charge
16:24:15	0		Charge	9:40:15	25		Melt	14:43:15	5		Charge
16:24:30	5		Charge	9:40:30	25		Melt	14:43:30	5		Charge
16:24:45	5		Charge	9:40:45	20		Melt	14:43:45	5		Charge
16:25:00	5		Charge	9:41:00	10		Melt	14:44:00	10		Charge
16:25:15	5		Charge	9:41:15	10		Melt	14:44:15	10		Charge
16:25:30	5		Charge	9:41:30	5		Melt	14:44:30	15		Charge
16:25:45	0	2.71	Charge	9:41:45	0		Melt	14:44:45	15		Charge
16:26:00	0		Melt	9:42:00	10		Charge	14:45:00	15		Charge
16:26:15	0		Melt	9:42:15	10		Charge	14:45:15	10		Charge
16:26:30	0		Melt	9:42:30	10		Charge	14:45:30	10		Charge
16:26:45	0		Melt	9:42:45	5		Charge	14:45:45	10		Charge
16:27:00	0		Melt	9:43:00	0		Charge	14:46:00	10		Charge
16:27:15	0		Melt	9:43:15	0		Charge	14:46:15	10		Charge
16:27:30	0		Melt	9:43:30	5		Charge	14:46:30	10		Charge
16:27:45	0		Melt	9:43:45	5		Charge	14:46:45	10		Charge
16:28:00	0		Melt	9:44:00	0		Charge	14:47:00	10		Charge
16:28:15	0		Melt	9:44:15	0		Charge	14:47:15	10		Charge
16:28:30	0		Melt	9:44:30	10		Charge	14:47:30	10		Charge
16:28:45	0		Melt	9:44:45	0		Charge	14:47:45	10		Charge
16:29:00	0		Melt	9:45:00	0		Charge	14:48:00	10		Charge
16:29:15	0		Melt	9:45:15	0		Charge	14:48:15	10		Charge
16:29:30	0		Melt	9:45:30	0		Charge	14:48:30	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:29:45	0		Melt	9:45:45	0		Charge	14:48:45	10		Charge
16:30:00	0		Melt	9:46:00	0		Charge	14:49:00	10		Charge
16:30:15	0		Melt	9:46:15	5		Charge	14:49:15	5		Charge
16:30:30	0		Melt	9:46:30	10		Charge	14:49:30	5		Charge
16:30:45	0		Melt	9:46:45	0		Charge	14:49:45	5		Charge
16:31:00	0		Melt	9:47:00	15		Charge	14:50:00	5		Charge
16:31:15	0		Melt	9:47:15	20		Charge	14:50:15	5		Charge
16:31:30	0		Melt	9:47:30	35		Charge	14:50:30	5		Charge
16:31:45	0	0.00	Melt	9:47:45	35	7.29	Charge	14:50:45	0		Charge
16:32:00	0	0.00	Melt	9:48:00	35		Melt	14:51:00	0		Charge
16:32:15	0	0.00	Melt	9:48:15	40		Melt	14:51:15	0		Charge
16:32:30	0	0.00	Melt	9:48:30	35		Melt	14:51:30	0		Charge
16:32:45	0	0.00	Melt	9:48:45	40		Melt	14:51:45	0		Charge
16:33:00	0	0.00	Melt	9:49:00	40		Melt	14:52:00	0		Charge
16:33:15	0	0.00	Melt	9:49:15	40		Melt	14:52:15	0		Charge
16:33:30	0	0.00	Melt	9:49:30	40		Melt	14:52:30	0		Charge
16:33:45	0	0.00	Melt	9:49:45	35		Melt	14:52:45	0		Charge
16:34:00	0	0.00	Melt	9:50:00	35		Melt	14:53:00	0		Charge
16:34:15	0	0.00	Melt	9:50:15	30		Melt	14:53:15	0		Charge
16:34:30	0	0.00	Melt	9:50:30	25		Melt	14:53:30	0		Charge
16:34:45	0	0.00	Melt	9:50:45	30		Melt	14:53:45	0		Charge
16:35:00	0	0.00	Melt	9:51:00	30		Melt	14:54:00	0		Charge
16:35:15	0	0.00	Melt	9:51:15	30		Melt	14:54:15	0		Charge
16:35:30	0	0.00	Melt	9:51:30	25		Melt	14:54:30	0		Charge
16:35:45	0	0.00	Melt	9:51:45	20		Melt	14:54:45	0		Charge
16:36:00	0	0.00	Melt	9:52:00	20		Melt	14:55:00	0		Charge
16:36:15	0	0.00	Melt	9:52:15	20		Melt	14:55:15	0		Charge
16:36:30	0	0.00	Melt	9:52:30	5		Melt	14:55:30	15		Charge
16:36:45	0	0.00	Melt	9:52:45	15		Melt	14:55:45	25		Charge
16:37:00	0	0.00	Melt	9:53:00	10		Melt	14:56:00	25		Charge
16:37:15	0	0.00	Melt	9:53:15	10		Melt	14:56:15	30		Charge
16:37:30	0	0.00	Melt	9:53:30	10		Melt	14:56:30	30		Charge
16:37:45	0	0.00	Melt	9:53:45	5	26.04	Melt	14:56:45	30		Charge
16:38:00	0	0.00	Melt	9:54:00	15	25.21	Melt	14:57:00	30		Charge
16:38:15	0	0.00	Melt	9:54:15	20	24.38	Melt	14:57:15	30		Charge
16:38:30	0	0.00	Melt	9:54:30	20	23.75	Melt	14:57:30	25		Charge
16:38:45	5	0.21	Melt	9:54:45	20	22.92	Melt	14:57:45	25		Charge
16:39:00	5	0.42	Melt	9:55:00	15		Tap	14:58:00	25		Charge
16:39:15	5	0.63	Melt	9:55:15	20		Tap	14:58:15	20		Charge
16:39:30	0	0.63	Melt	9:55:30	20		Tap	14:58:30	20		Charge
16:39:45	0	0.63	Melt	9:55:45	20		Tap	14:58:45	15		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:40:00	0	0.63	Melt	9:56:00	20		Tap	14:59:00	15		Charge
16:40:15	0	0.63	Melt	9:56:15	20		Tap	14:59:15	15		Charge
16:40:30	0	0.63	Melt	9:56:30	15		Tap	14:59:30	15		Charge
16:40:45	0	0.63	Melt	9:56:45	15		Tap	14:59:45	15		Charge
16:41:00	0	0.63	Melt	9:57:00	10		Tap	15:00:00	15		Charge
16:41:15	0	0.63	Melt	9:57:15	10		Tap	15:00:15	15		Charge
16:41:30	0	0.63	Melt	9:57:30	10		Tap	15:00:30	10		Charge
16:41:45	0	0.63	Melt	9:57:45	10		Tap	15:00:45	10		Charge
16:42:00	0	0.63	Melt	9:58:00	5		Tap	15:01:00	10		Charge
16:42:15	0	0.63	Melt	9:58:15	0		Tap	15:01:15	10		Charge
16:42:30	0	0.63	Melt	9:58:30	0		Tap	15:01:30	10		Charge
16:42:45	0	0.63	Melt	9:58:45	0		Tap	15:01:45	5	10.07	Charge
16:43:00	0		Tap	9:59:00	0		Tap	15:02:00	5		Melt
16:43:15	0		Tap	9:59:15	0		Tap	15:02:15	5		Melt
16:43:30	5		Tap	9:59:30	0		Tap	15:02:30	5		Melt
16:43:45	10		Tap	9:59:45	0		Tap	15:02:45	5		Melt
16:44:00	5		Tap	10:00:00	0		Tap	15:03:00	5		Melt
16:44:15	5		Tap	10:00:15	0		Tap	15:03:15	5		Melt
16:44:30	10		Tap	10:00:30	0		Tap	15:03:30	5		Melt
16:44:45	15		Tap	10:00:45	0		Tap	15:03:45	5		Melt
16:45:00	15		Tap	10:01:00	0		Tap	15:04:00	5		Melt
16:45:15	15		Tap	10:01:15	0		Tap	15:04:15	0		Melt
16:45:30	15		Tap	10:01:30	0		Tap	15:04:30	0		Melt
16:45:45	10		Tap	10:01:45	0		Tap	15:04:45	0		Melt
16:46:00	10		Tap	10:02:00	0		Tap	15:05:00	0		Melt
16:46:15	10		Tap	10:02:15	0		Tap	15:05:15	0		Melt
16:46:30	10		Tap	10:02:30	0		Tap	15:05:30	0		Melt
16:46:45	15		Tap	10:02:45	0		Tap	15:05:45	0		Melt
16:47:00	20		Tap	10:03:00	0		Tap	15:06:00	0		Melt
16:47:15	20		Tap	10:03:15	0	5.59	Tap	15:06:15	0		Melt
16:47:30	15		Tap	10:03:30	0		Charge	15:06:30	0		Melt
16:47:45	15		Tap	10:03:45	0		Charge	15:06:45	0		Melt
16:48:00	15		Tap	10:04:00	0		Charge	15:07:00	0		Melt
16:48:15	15		Tap	10:04:15	0		Charge	15:07:15	0		Melt
16:48:30	15		Tap	10:04:30	0		Charge	15:07:30	0		Melt
16:48:45	15		Tap	10:04:45	15		Charge	15:07:45	0	1.88	Melt
16:49:00	20		Tap	10:05:00	10		Charge	15:08:00	0	1.67	Melt
16:49:15	20		Tap	10:05:15	10		Charge	15:08:15	0	1.46	Melt
16:49:30	20		Tap	10:05:30	10		Charge	15:08:30	0	1.25	Melt
16:49:45	15	12.68	Tap	10:05:45	20		Charge	15:08:45	0	1.04	Melt
16:50:00	15		Charge	10:06:00	5		Charge	15:09:00	0	0.83	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:50:15	10		Charge	10:06:15	5		Charge	15:09:15	0	0.63	Melt
16:50:30	10		Charge	10:06:30	10		Charge	15:09:30	0	0.42	Melt
16:50:45	10		Charge	10:06:45	15		Charge	15:09:45	0	0.21	Melt
16:51:00	10		Charge	10:07:00	20		Charge	15:10:00	0	0.00	Melt
16:51:15	5		Charge	10:07:15	25		Charge	15:10:15	0	0.00	Melt
16:51:30	5		Charge	10:07:30	25		Charge	15:10:30	0	0.00	Melt
16:51:45	5		Charge	10:07:45	25		Charge	15:10:45	0	0.00	Melt
16:52:00	5		Charge	10:08:00	20		Charge	15:11:00	0	0.00	Melt
16:52:15	0		Charge	10:08:15	20		Charge	15:11:15	0	0.00	Melt
16:52:30	0		Charge	10:08:30	15		Charge	15:11:30	0	0.00	Melt
16:52:45	0		Charge	10:08:45	15		Charge	15:11:45	0	0.00	Melt
16:53:00	5		Charge	10:09:00	25		Charge	15:12:00	0	0.00	Melt
16:53:15	15		Charge	10:09:15	20		Charge	15:12:15	0	0.00	Melt
16:53:30	15		Charge	10:09:30	20		Charge	15:12:30	0	0.00	Melt
16:53:45	10		Charge	10:09:45	15		Charge	15:12:45	0	0.00	Melt
16:54:00	10		Charge	10:10:00	10		Charge	15:13:00	0	0.00	Melt
16:54:15	5		Charge	10:10:15	15		Charge	15:13:15	0	0.00	Melt
16:54:30	5		Charge	10:10:30	15		Charge	15:13:30	0	0.00	Melt
16:54:45	5		Charge	10:10:45	15		Charge	15:13:45	0	0.00	Melt
16:55:00	5		Charge	10:11:00	15		Charge	15:14:00	0	0.00	Melt
16:55:15	5		Charge	10:11:15	15		Charge	15:14:15	0	0.00	Melt
16:55:30	0		Charge	10:11:30	10		Charge	15:14:30	0	0.00	Melt
16:55:45	0		Charge	10:11:45	10		Charge	15:14:45	0	0.00	Melt
16:56:00	0		Charge	10:12:00	10		Charge	15:15:00	5	0.21	Melt
16:56:15	0		Charge	10:12:15	10		Charge	15:15:15	10	0.63	Melt
16:56:30	0		Charge	10:12:30	5		Charge	15:15:30	10	1.04	Melt
16:56:45	0		Charge	10:12:45	0		Charge	15:15:45	5	1.25	Melt
16:57:00	0		Charge	10:13:00	0		Charge	15:16:00	5	1.46	Melt
16:57:15	0		Charge	10:13:15	0		Charge	15:16:15	5	1.67	Melt
16:57:30	0		Charge	10:13:30	0		Charge	15:16:30	0	1.67	Melt
16:57:45	0		Charge	10:13:45	0		Charge	15:16:45	0	1.67	Melt
16:58:00	0		Charge	10:14:00	0		Charge	15:17:00	0	1.67	Melt
16:58:15	5		Charge	10:14:15	0		Charge	15:17:15	0	1.67	Melt
16:58:30	5		Charge	10:14:30	0		Charge	15:17:30	0	1.67	Melt
16:58:45	5		Charge	10:14:45	0	10.33	Charge	15:17:45	0	1.67	Melt
16:59:00	5		Charge	10:15:00	0		Melt	15:18:00	0	1.67	Melt
16:59:15	5		Charge	10:15:15	0		Melt	15:18:15	0	1.67	Melt
16:59:30	5		Charge	10:15:30	0		Melt	15:18:30	10	2.08	Melt
16:59:45	5		Charge	10:15:45	0		Melt	15:18:45	10	2.50	Melt
17:00:00	5		Charge	10:16:00	0		Melt	15:19:00	5	2.71	Melt
17:00:15	0		Charge	10:16:15	0		Melt	15:19:15	5	2.92	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:00:30	0		Charge	10:16:30	0		Melt	15:19:30	10	3.33	Melt
17:00:45	0		Charge	10:16:45	0		Melt	15:19:45	10	3.75	Melt
17:01:00	0		Charge	10:17:00	0		Melt	15:20:00	10	4.17	Melt
17:01:15	0		Charge	10:17:15	0		Melt	15:20:15	10	4.58	Melt
17:01:30	0		Charge	10:17:30	0		Melt	15:20:30	5	4.79	Melt
17:01:45	0		Charge	10:17:45	0		Melt	15:20:45	5	5.00	Melt
17:02:00	0		Charge	10:18:00	0		Melt	15:21:00	5	5.00	Melt
17:02:15	0		Charge	10:18:15	0		Melt	15:21:15	10	5.00	Melt
17:02:30	0		Charge	10:18:30	0		Melt	15:21:30	10	5.00	Melt
17:02:45	0		Charge	10:18:45	0		Melt	15:21:45	10	5.21	Melt
17:03:00	0		Charge	10:19:00	0		Melt	15:22:00	15	5.63	Melt
17:03:15	0		Charge	10:19:15	0		Melt	15:22:15	20	6.25	Melt
17:03:30	0		Charge	10:19:30	0		Melt	15:22:30	20	7.08	Melt
17:03:45	0		Charge	10:19:45	0		Melt	15:22:45	20	7.92	Melt
17:04:00	0		Charge	10:20:00	0		Melt	15:23:00	15	8.54	Melt
17:04:15	0		Charge	10:20:15	0		Melt	15:23:15	15	9.17	Melt
17:04:30	0		Charge	10:20:30	0		Melt	15:23:30	15	9.79	Melt
17:04:45	0		Charge	10:20:45	0	0.00	Melt	15:23:45	15	10.42	Melt
17:05:00	0		Charge	10:21:00	0	0.00	Melt	15:24:00	15	11.04	Melt
17:05:15	10		Charge	10:21:15	0	0.00	Melt	15:24:15	15	11.67	Melt
17:05:30	10		Charge	10:21:30	0	0.00	Melt	15:24:30	15	11.88	Melt
17:05:45	15		Charge	10:21:45	0	0.00	Melt	15:24:45	15	12.08	Melt
17:06:00	15		Charge	10:22:00	0	0.00	Melt	15:25:00	15	12.50	Melt
17:06:15	10		Charge	10:22:15	0	0.00	Melt	15:25:15	15	12.92	Melt
17:06:30	5		Charge	10:22:30	0	0.00	Melt	15:25:30	15	13.13	Melt
17:06:45	5		Charge	10:22:45	0	0.00	Melt	15:25:45	15	13.33	Melt
17:07:00	5		Charge	10:23:00	0	0.00	Melt	15:26:00	15	13.54	Melt
17:07:15	0		Charge	10:23:15	0	0.00	Melt	15:26:15	10	13.54	Melt
17:07:30	0		Charge	10:23:30	0	0.00	Melt	15:26:30	10	13.75	Melt
17:07:45	0		Charge	10:23:45	0	0.00	Melt	15:26:45	10	13.96	Melt
17:08:00	0		Charge	10:24:00	0	0.00	Melt	15:27:00	10	14.17	Melt
17:08:15	0		Charge	10:24:15	0	0.00	Melt	15:27:15	10	14.17	Melt
17:08:30	0		Charge	10:24:30	0	0.00	Melt	15:27:30	5	13.96	Melt
17:08:45	0		Charge	10:24:45	0	0.00	Melt	15:27:45	5	13.75	Melt
17:09:00	0		Charge	10:25:00	0	0.00	Melt	15:28:00	5	13.33	Melt
17:09:15	0		Charge	10:25:15	0	0.00	Melt	15:28:15	5	12.71	Melt
17:09:30	0		Charge	10:25:30	0	0.00	Melt	15:28:30	5	12.08	Melt
17:09:45	0		Charge	10:25:45	0	0.00	Melt	15:28:45	5	11.46	Melt
17:10:00	0		Charge	10:26:00	0	0.00	Melt	15:29:00	5	11.04	Melt
17:10:15	0		Charge	10:26:15	0	0.00	Melt	15:29:15	5	10.63	Melt
17:10:30	0		Charge	10:26:30	0	0.00	Melt	15:29:30	5	10.21	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:10:45	0		Charge	10:26:45	0	0.00	Melt	15:29:45	0	9.58	Melt
17:11:00	0		Charge	10:27:00	0	0.00	Melt	15:30:00	0	8.96	Melt
17:11:15	0		Charge	10:27:15	0	0.00	Melt	15:30:15	0	8.33	Melt
17:11:30	0		Charge	10:27:30	0	0.00	Melt	15:30:30	5	7.92	Melt
17:11:45	0		Charge	10:27:45	0	0.00	Melt	15:30:45	10	7.71	Melt
17:12:00	0		Charge	10:28:00	0	0.00	Melt	15:31:00	10	7.50	Melt
17:12:15	0		Charge	10:28:15	0	0.00	Melt	15:31:15	10	7.29	Melt
17:12:30	0		Charge	10:28:30	0	0.00	Melt	15:31:30	15	7.29	Melt
17:12:45	0		Charge	10:28:45	0	0.00	Melt	15:31:45	15	7.29	Melt
17:13:00	0		Charge	10:29:00	0	0.00	Melt	15:32:00	15	7.29	Melt
17:13:15	0		Charge	10:29:15	0	0.00	Melt	15:32:15	20	7.71	Melt
17:13:30	0		Charge	10:29:30	0	0.00	Melt	15:32:30	20	8.13	Melt
17:13:45	0		Charge	10:29:45	0	0.00	Melt	15:32:45	15	8.33	Melt
17:14:00	0		Charge	10:30:00	0	0.00	Melt	15:33:00	15	8.54	Melt
17:14:15	0		Charge	10:30:15	0	0.00	Melt	15:33:15	10	8.54	Melt
17:14:30	0		Charge	10:30:30	0	0.00	Melt	15:33:30	10	8.75	Melt
17:14:45	0		Charge	10:30:45	0	0.00	Melt	15:33:45	5	8.75	Melt
17:15:00	0		Charge	10:31:00	0		Tap	15:34:00	5	8.75	Melt
17:15:15	0		Charge	10:31:15	15		Tap	15:34:15	5	8.75	Melt
17:15:30	0		Charge	10:31:30	25		Tap	15:34:30	5	8.75	Melt
17:15:45	0		Charge	10:31:45	25		Tap	15:34:45	5	8.75	Melt
17:16:00	0		Charge	10:32:00	20		Tap	15:35:00	5	8.75	Melt
17:16:15	10		Charge	10:32:15	20		Tap	15:35:15	5	8.75	Melt
17:16:30	15		Charge	10:32:30	25		Tap	15:35:30	5	8.75	Melt
17:16:45	15		Charge	10:32:45	25		Tap	15:35:45	5	8.96	Melt
17:17:00	10		Charge	10:33:00	25		Tap	15:36:00	5		Charge
17:17:15	10		Charge	10:33:15	30		Tap	15:36:15	10		Charge
17:17:30	10		Charge	10:33:30	30		Tap	15:36:30	10		Charge
17:17:45	10		Charge	10:33:45	25		Tap	15:36:45	15		Charge
17:18:00	5		Charge	10:34:00	25		Tap	15:37:00	15		Charge
17:18:15	5		Charge	10:34:15	15		Tap	15:37:15	15		Charge
17:18:30	5		Charge	10:34:30	15		Tap	15:37:30	20		Charge
17:18:45	5		Charge	10:34:45	5		Tap	15:37:45	20		Charge
17:19:00	0		Charge	10:35:00	5		Tap	15:38:00	20		Charge
17:19:15	0		Charge	10:35:15	0		Tap	15:38:15	15		Charge
17:19:30	0		Charge	10:35:30	0		Tap	15:38:30	15		Charge
17:19:45	0		Charge	10:35:45	0		Tap	15:38:45	15		Charge
17:20:00	0		Charge	10:36:00	0		Tap	15:39:00	15		Charge
17:20:15	0		Charge	10:36:15	0		Tap	15:39:15	15		Charge
17:20:30	0		Charge	10:36:30	0		Tap	15:39:30	10		Charge
17:20:45	0		Charge	10:36:45	0	13.75	Tap	15:39:45	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:21:00	0		Charge	10:37:00	0		Charge	15:40:00	10		Charge
17:21:15	0		Charge	10:37:15	0		Charge	15:40:15	10		Charge
17:21:30	0		Charge	10:37:30	0		Charge	15:40:30	10		Charge
17:21:45	0		Charge	10:37:45	0		Charge	15:40:45	5		Charge
17:22:00	0		Charge	10:38:00	0		Charge	15:41:00	5		Charge
17:22:15	0		Charge	10:38:15	0		Charge	15:41:15	5		Charge
17:22:30	0		Charge	10:38:30	0		Charge	15:41:30	5		Charge
17:22:45	0		Charge	10:38:45	0		Charge	15:41:45	5		Charge
17:23:00	0		Charge	10:39:00	0		Charge	15:42:00	5		Charge
17:23:15	0		Charge	10:39:15	0		Charge	15:42:15	0		Charge
17:23:30	0		Charge	10:39:30	0		Charge	15:42:30	0		Charge
17:23:45	0		Charge	10:39:45	0		Charge	15:42:45	0	10.18	Charge
17:24:00	0		Charge	10:40:00	0		Charge	15:43:00	0		Tap
17:24:15	0		Charge	10:40:15	0		Charge	15:43:15	10		Tap
17:24:30	0		Charge	10:40:30	0		Charge	15:43:30	10		Tap
17:24:45	0	2.64	Charge	10:40:45	0		Charge	15:43:45	15		Tap
17:25:00	0		Melt	10:41:00	0		Charge	15:44:00	15		Tap
17:25:15	0		Melt	10:41:15	0		Charge	15:44:15	15		Tap
17:25:30	0		Melt	10:41:30	0		Charge	15:44:30	20		Tap
17:25:45	0		Melt	10:41:45	0		Charge	15:44:45	20		Tap
17:26:00	0		Melt	10:42:00	0		Charge	15:45:00	15		Tap
17:26:15	0		Melt	10:42:15	0		Charge	15:45:15	15		Tap
17:26:30	0		Melt	10:42:30	0		Charge	15:45:30	10		Tap
17:26:45	0		Melt	10:42:45	0		Charge	15:45:45	10		Tap
17:27:00	0		Melt	10:43:00	0		Charge	15:46:00	10		Tap
17:27:15	0		Melt	10:43:15	0		Charge	15:46:15	10		Tap
17:27:30	0		Melt	10:43:30	0		Charge	15:46:30	10		Tap
17:27:45	0		Melt	10:43:45	0		Charge	15:46:45	10		Tap
17:28:00	0		Melt	10:44:00	0		Charge	15:47:00	10		Tap
17:28:15	0		Melt	10:44:15	0		Charge	15:47:15	10		Tap
17:28:30	0		Melt	10:44:30	0		Charge	15:47:30	10		Tap
17:28:45	0		Melt	10:44:45	0		Charge	15:47:45	10		Tap
17:29:00	0		Melt	10:45:00	0		Charge	15:48:00	10		Tap
17:29:15	0		Melt	10:45:15	0		Charge	15:48:15	10		Tap
17:29:30	0		Melt	10:45:30	0		Charge	15:48:30	5		Tap
17:29:45	0		Melt	10:45:45	0		Charge	15:48:45	5		Tap
17:30:00	0		Melt	10:46:00	0		Charge	15:49:00	5		Tap
17:30:15	0		Melt	10:46:15	0		Charge	15:49:15	15		Tap
17:30:30	0		Melt	10:46:30	0		Charge	15:49:30	15		Tap
17:30:45	0	0.00	Melt	10:46:45	0		Charge	15:49:45	20	11.43	Tap
17:31:00	0	0.00	Melt	10:47:00	0		Charge	15:50:00	20		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:31:15	0	0.00	Melt	10:47:15	0		Charge	15:50:15	25		Charge
17:31:30	0	0.00	Melt	10:47:30	0		Charge	15:50:30	25		Charge
17:31:45	0	0.00	Melt	10:47:45	0		Charge	15:50:45	25		Charge
17:32:00	0	0.00	Melt	10:48:00	0		Charge	15:51:00	25		Charge
17:32:15	0	0.00	Melt	10:48:15	0		Charge	15:51:15	25		Charge
17:32:30	0	0.00	Melt	10:48:30	0		Charge	15:51:30	25		Charge
17:32:45	0	0.00	Melt	10:48:45	0		Charge	15:51:45	30		Charge
17:33:00	0	0.00	Melt	10:49:00	0		Charge	15:52:00	35		Charge
17:33:15	0	0.00	Melt	10:49:15	0		Charge	15:52:15	40		Charge
17:33:30	0	0.00	Melt	10:49:30	0		Charge	15:52:30	40		Charge
17:33:45	0	0.00	Melt	10:49:45	0		Charge	15:52:45	40		Charge
17:34:00	0	0.00	Melt	10:50:00	0		Charge	15:53:00	40		Charge
17:34:15	0	0.00	Melt	10:50:15	0		Charge	15:53:15	40		Charge
17:34:30	0	0.00	Melt	10:50:30	0		Charge	15:53:30	40		Charge
17:34:45	0	0.00	Melt	10:50:45	0		Charge	15:53:45	40		Charge
17:35:00	0	0.00	Melt	10:51:00	0		Charge	15:54:00	40		Charge
17:35:15	0	0.00	Melt	10:51:15	0		Charge	15:54:15	35		Charge
17:35:30	0	0.00	Melt	10:51:30	0		Charge	15:54:30	30		Charge
17:35:45	0	0.00	Melt	10:51:45	0		Charge	15:54:45	30		Charge
17:36:00	0	0.00	Melt	10:52:00	0		Charge	15:55:00	30		Charge
17:36:15	0	0.00	Melt	10:52:15	0		Charge	15:55:15	25		Charge
17:36:30	0	0.00	Melt	10:52:30	0		Charge	15:55:30	25		Charge
17:36:45	0	0.00	Melt	10:52:45	0		Charge	15:55:45	25		Charge
17:37:00	0	0.00	Melt	10:53:00	0		Charge	15:56:00	25		Charge
17:37:15	0	0.00	Melt	10:53:15	0		Charge	15:56:15	25		Charge
17:37:30	0	0.00	Melt	10:53:30	0		Charge	15:56:30	20		Charge
17:37:45	0	0.00	Melt	10:53:45	0		Charge	15:56:45	20		Charge
17:38:00	0	0.00	Melt	10:54:00	0		Charge	15:57:00	20		Charge
17:38:15	0	0.00	Melt	10:54:15	0		Charge	15:57:15	20		Charge
17:38:30	0	0.00	Melt	10:54:30	0		Charge	15:57:30	15		Charge
17:38:45	0	0.00	Melt	10:54:45	0		Charge	15:57:45	15		Charge
17:39:00	0	0.00	Melt	10:55:00	0		Charge	15:58:00	15		Charge
17:39:15	0	0.00	Melt	10:55:15	0		Charge	15:58:15	15		Charge
17:39:30	0	0.00	Melt	10:55:30	0		Charge	15:58:30	10		Charge
17:39:45	0	0.00	Melt	10:55:45	0		Charge	15:58:45	10		Charge
17:40:00	0	0.00	Melt	10:56:00	0		Charge	15:59:00	10		Charge
17:40:15	0	0.00	Melt	10:56:15	0		Charge	15:59:15	10		Charge
17:40:30	0	0.00	Melt	10:56:30	0		Charge	15:59:30	10		Charge
17:40:45	0	0.00	Melt	10:56:45	0		Charge	15:59:45	10		Charge
17:41:00	0	0.00	Melt	10:57:00	0		Charge	16:00:00	10		Charge
17:41:15	0	0.00	Melt	10:57:15	0		Charge	16:00:15	5		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:41:30	0	0.00	Melt	10:57:30	0		Charge	16:00:30	5		Charge
17:41:45	0	0.00	Melt	10:57:45	0		Charge	16:00:45	5		Charge
17:42:00	0		Charge	10:58:00	0		Charge	16:01:00	5		Charge
17:42:15	0		Charge	10:58:15	0		Charge	16:01:15	5		Charge
17:42:30	5		Charge	10:58:30	0		Charge	16:01:30	5		Charge
17:42:45	15		Charge	10:58:45	0		Charge	16:01:45	15		Charge
17:43:00	15		Charge	10:59:00	0		Charge	16:02:00	15		Charge
17:43:15	10		Charge	10:59:15	0		Charge	16:02:15	20		Charge
17:43:30	35		Charge	10:59:30	0		Charge	16:02:30	20		Charge
17:43:45	50		Charge	10:59:45	0		Charge	16:02:45	20		Charge
17:44:00	40		Charge	11:00:00	0		Charge	16:03:00	20		Charge
17:44:15	40		Charge	11:00:15	0		Charge	16:03:15	20		Charge
17:44:30	30		Charge	11:00:30	0		Charge	16:03:30	20		Charge
17:44:45	20		Charge	11:00:45	0		Charge	16:03:45	20		Charge
17:45:00	20		Charge	11:01:00	0		Charge	16:04:00	20		Charge
17:45:15	15		Charge	11:01:15	0		Charge	16:04:15	20		Charge
17:45:30	10		Charge	11:01:30	0		Charge	16:04:30	15		Charge
17:45:45	10		Charge	11:01:45	0		Charge	16:04:45	15		Charge
17:46:00	5		Charge	11:02:00	0		Charge	16:05:00	15		Charge
17:46:15	5		Charge	11:02:15	0		Charge	16:05:15	15		Charge
17:46:30	10		Charge	11:02:30	0		Charge	16:05:30	15		Charge
17:46:45	10		Charge	11:02:45	0		Charge	16:05:45	15		Charge
17:47:00	10		Charge	11:03:00	0		Charge	16:06:00	15		Charge
17:47:15	10		Charge	11:03:15	0		Charge	16:06:15	15		Charge
17:47:30	15		Charge	11:03:30	0		Charge	16:06:30	15		Charge
17:47:45	15		Charge	11:03:45	0		Charge	16:06:45	15		Charge
17:48:00	10		Charge	11:04:00	0		Charge	16:07:00	15		Charge
17:48:15	5		Charge	11:04:15	0		Charge	16:07:15	15		Charge
17:48:30	5		Charge	11:04:30	0		Charge	16:07:30	15		Charge
17:48:45	5		Charge	11:04:45	0		Charge	16:07:45	15		Charge
17:49:00	5		Charge	11:05:00	10		Charge	16:08:00	15		Charge
17:49:15	0		Charge	11:05:15	10		Charge	16:08:15	15		Charge
17:49:30	0		Charge	11:05:30	10		Charge	16:08:30	15		Charge
17:49:45	0		Charge	11:05:45	10	0.34	Charge	16:08:45	15		Charge
17:50:00	0		Charge	11:06:00	5		Melt	16:09:00	15		Charge
17:50:15	0		Charge	11:06:15	0		Melt	16:09:15	15		Charge
17:50:30	0		Charge	11:06:30	0		Melt	16:09:30	10		Charge
17:50:45	10		Charge	11:06:45	0		Melt	16:09:45	10		Charge
17:51:00	20		Charge	11:07:00	0		Melt	16:10:00	10		Charge
17:51:15	35		Charge	11:07:15	0		Melt	16:10:15	10		Charge
17:51:30	30		Charge	11:07:30	0		Melt	16:10:30	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:51:45	25		Charge	11:07:45	0		Melt	16:10:45	5		Charge
17:52:00	15		Charge	11:08:00	0		Melt	16:11:00	5		Charge
17:52:15	15		Charge	11:08:15	0		Melt	16:11:15	5		Charge
17:52:30	10		Charge	11:08:30	0		Melt	16:11:30	5		Charge
17:52:45	5	13.41	Charge	11:08:45	0		Melt	16:11:45	10		Charge
17:53:00	5		Melt	11:09:00	0		Melt	16:12:00	15		Charge
17:53:15	5		Melt	11:09:15	0		Melt	16:12:15	15		Charge
17:53:30	0		Melt	11:09:30	0		Melt	16:12:30	15		Charge
17:53:45	0		Melt	11:09:45	0		Melt	16:12:45	15		Charge
17:54:00	0		Melt	11:10:00	0		Melt	16:13:00	15		Charge
17:54:15	0		Melt	11:10:15	0		Melt	16:13:15	15		Charge
17:54:30	0		Melt	11:10:30	0		Melt	16:13:30	15		Charge
17:54:45	0		Melt	11:10:45	0		Melt	16:13:45	15		Charge
17:55:00	0		Melt	11:11:00	0		Melt	16:14:00	15		Charge
17:55:15	0		Melt	11:11:15	0		Melt	16:14:15	20		Charge
17:55:30	0		Melt	11:11:30	0		Melt	16:14:30	25		Charge
17:55:45	0		Melt	11:11:45	0	0.21	Melt	16:14:45	25		Charge
17:56:00	0		Melt	11:12:00	0	0.00	Melt	16:15:00	25		Charge
17:56:15	5		Melt	11:12:15	0	0.00	Melt	16:15:15	25		Charge
17:56:30	10		Melt	11:12:30	0	0.00	Melt	16:15:30	25		Charge
17:56:45	10		Melt	11:12:45	0	0.00	Melt	16:15:45	25		Charge
17:57:00	5		Melt	11:13:00	0	0.00	Melt	16:16:00	25		Charge
17:57:15	5		Melt	11:13:15	0	0.00	Melt	16:16:15	25		Charge
17:57:30	0		Melt	11:13:30	0	0.00	Melt	16:16:30	25		Charge
17:57:45	0		Melt	11:13:45	0	0.00	Melt	16:16:45	20		Charge
17:58:00	0		Melt	11:14:00	0	0.00	Melt	16:17:00	20		Charge
17:58:15	0		Melt	11:14:15	0	0.00	Melt	16:17:15	15		Charge
17:58:30	0		Melt	11:14:30	10	0.42	Melt	16:17:30	15		Charge
17:58:45	0	1.88	Melt	11:14:45	10	0.83	Melt	16:17:45	15		Charge
17:59:00	0	1.67	Melt	11:15:00	0	0.83	Melt	16:18:00	15		Charge
17:59:15	0	1.46	Melt	11:15:15	0	0.83	Melt	16:18:15	15		Charge
17:59:30	0	1.46	Melt	11:15:30	0	0.83	Melt	16:18:30	15		Charge
17:59:45	0	1.46	Melt	11:15:45	0	0.83	Melt	16:18:45	15		Charge
18:00:00	0	1.46	Melt	11:16:00	0	0.83	Melt	16:19:00	15		Charge
18:00:15	10	1.88	Melt	11:16:15	0	0.83	Melt	16:19:15	20		Charge
18:00:30	10	2.29	Melt	11:16:30	0	0.83	Melt	16:19:30	20		Charge
18:00:45	5	2.50	Melt	11:16:45	0	0.83	Melt	16:19:45	20	18.63	Charge
18:01:00	5	2.71	Melt	11:17:00	0	0.83	Melt				
18:01:15	5	2.92	Melt	11:17:15	0	0.83	Melt				
18:01:30	0	2.92	Melt	11:17:30	0	0.83	Melt				
18:01:45	0	2.92	Melt	11:17:45	0	0.83	Melt				

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:02:00	0	2.92	Melt	11:18:00	0	0.83	Melt				
18:02:15	0	2.71	Melt	11:18:15	0	0.83	Melt				
18:02:30	0	2.29	Melt	11:18:30	0	0.83	Melt				
18:02:45	10	2.29	Melt	11:18:45	0	0.83	Melt				
18:03:00	20	2.92	Melt	11:19:00	0	0.83	Melt				
18:03:15	20	3.54	Melt	11:19:15	0	0.83	Melt				
18:03:30	20	4.38	Melt	11:19:30	0	0.83	Melt				
18:03:45	15	5.00	Melt	11:19:45	0	0.83	Melt				
18:04:00	15	5.63	Melt	11:20:00	0	0.83	Melt				
18:04:15	15	6.25	Melt	11:20:15	0	0.83	Melt				
18:04:30	15	6.88	Melt	11:20:30	0	0.42	Melt				
18:04:45	10	7.29	Melt	11:20:45	0	0.00	Melt				
18:05:00	10	7.71	Melt	11:21:00	0	0.00	Melt				
18:05:15	5	7.92	Melt								
18:05:30	5	8.13	Melt								
18:05:45	5	8.33	Melt								
18:06:00	5	8.54	Melt								
18:06:15	0	8.13	Melt								
18:06:30	0	7.71	Melt								
18:06:45	0	7.50	Melt								
18:07:00	0	7.29	Melt								
18:07:15	5	7.29	Melt								
18:07:30	5	7.50	Melt								
18:07:45	10	7.92	Melt								
18:08:00	10	8.33	Melt								
18:08:15	10	8.75	Melt								
18:08:30	5	8.96	Melt								
18:08:45	5	8.75	Melt								
18:09:00	5	8.13	Melt								
18:09:15	5	7.50	Melt								
18:09:30	5	6.88	Melt								
18:09:45	0	6.25	Melt								
18:10:00	0	5.63	Melt								
18:10:15	15	5.63	Melt								
18:10:30	15	5.63	Melt								
18:10:45	10	5.63	Melt								
18:11:00	10	5.63	Melt								
18:11:15	15	6.04	Melt								
18:11:30	15	6.46	Melt								
18:11:45	15	6.88	Melt								
18:12:00	20	7.50	Melt								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:12:15	20	8.33	Melt								
18:12:30	15	8.96	Melt								
18:12:45	15	9.58	Melt								
18:13:00	15	10.21	Melt								
18:13:15	10	10.42	Melt								
18:13:30	10	10.63	Melt								
18:13:45	15	10.83	Melt								
18:14:00	15	11.04	Melt								
18:14:15	15	11.25	Melt								
18:14:30	10	11.46	Melt								
18:14:45	10	11.67	Melt								
18:15:00	10	11.88	Melt								
18:15:15	10	12.08	Melt								
18:15:30	5	12.08	Melt								
18:15:45	5	12.29	Melt								
18:16:00	5	12.50	Melt								
18:16:15	5	12.08	Melt								
18:16:30	5	11.67	Melt								
18:16:45	0	11.25	Melt								
18:17:00	0	10.83	Melt								
18:17:15	0	10.21	Melt								
18:17:30	0	9.58	Melt								
18:17:45	0	8.96	Melt								
18:18:00	0	8.13	Melt								
18:18:15	0	7.29	Melt								
18:18:30	0	6.67	Melt								
18:18:45	0	6.04	Melt								
18:19:00	0	5.42	Melt								
18:19:15	0	5.00	Melt								
18:19:30	0	4.58	Melt								
18:19:45	0	3.96	Melt								
18:20:00	0	3.33	Melt								
18:20:15	0	2.71	Melt								
18:20:30	0	2.29	Melt								
18:20:45	0	1.88	Melt								
18:21:00	0	1.46	Melt								
18:21:15	0	1.04	Melt								
18:21:30	0	0.83	Melt								
18:21:45	0	0.63	Melt								
18:22:00	0	0.42	Melt								
18:22:15	0	0.21	Melt								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:22:30	0	0.00	Melt								
18:22:45	0	0.00	Melt								
18:23:00	0	0.00	Melt								
18:23:15	0	0.00	Melt								
18:23:30	0	0.00	Melt								
18:23:45	0	0.00	Melt								
18:24:00	0	0.00	Melt								
18:24:15	0	0.00	Melt								
18:24:30	0	0.00	Melt								
18:24:45	0	0.00	Melt								
18:25:00	0	0.00	Melt								
18:25:15	0	0.00	Melt								
18:25:30	0	0.00	Melt								
18:25:45	0	0.00	Melt								
18:26:00	0	0.00	Melt								
18:26:15	0	0.00	Melt								
18:26:30	0	0.00	Melt								
18:26:45	0	0.00	Melt								
18:27:00	0	0.00	Melt								
18:27:15	0	0.00	Melt								
18:27:30	0	0.00	Melt								
18:27:45	0	0.00	Melt								
18:28:00	0	0.00	Melt								
18:28:15	0	0.00	Melt								
18:28:30	0	0.00	Melt								
18:28:45	0	0.00	Melt								
18:29:00	0		Tap								
18:29:15	0		Tap								
18:29:30	10		Tap								
18:29:45	15		Tap								
18:30:00	15		Tap								
18:30:15	10		Tap								
18:30:30	10		Tap								
18:30:45	5		Tap								
18:31:00	5		Tap								
18:31:15	5		Tap								
18:31:30	5		Tap								
18:31:45	5		Tap								
18:32:00	5		Tap								
18:32:15	10		Tap								
18:32:30	10		Tap								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:32:45	15		Tap								
18:33:00	25		Tap								
18:33:15	20		Tap								
18:33:30	15		Tap								
18:33:45	15		Tap								
18:34:00	10		Tap								
18:34:15	10		Tap								
18:34:30	15		Tap								
18:34:45	20		Tap								
18:35:00	25		Tap								
18:35:15	25		Tap								
18:35:30	20		Tap								
18:35:45	15		Tap								
18:36:00	15		Tap								
18:36:15	10		Tap								
18:36:30	5		Tap								
18:36:45	5	11.72	Tap								
18:37:00	5		Melt								
18:37:15	5		Melt								
18:37:30	5		Melt								
18:37:45	0		Melt								
18:38:00	0		Melt								
18:38:15	0		Melt								
18:38:30	0		Melt								
18:38:45	0		Melt								
18:39:00	0		Melt								
18:39:15	0		Melt								
18:39:30	0		Melt								
18:39:45	0		Melt								
18:40:00	0		Melt								
18:40:15	0		Melt								
18:40:30	0		Melt								
18:40:45	0		Melt								
18:41:00	0		Charge								
18:41:15	0		Charge								
18:41:30	0		Charge								
18:41:45	0		Charge								
18:42:00	0		Charge								
18:42:15	0		Charge								
18:42:30	0		Charge								
18:42:45	0		Charge								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:43:00	0		Charge								
18:43:15	0		Charge								
18:43:30	0		Charge								
18:43:45	0		Charge								
18:44:00	0		Charge								
18:44:15	0		Charge								
18:44:30	0		Charge								
18:44:45	0		Charge								
18:45:00	0		Charge								
18:45:15	0		Charge								
18:45:30	0		Charge								
18:45:45	0		Charge								
18:46:00	0		Charge								
18:46:15	0		Charge								
18:46:30	0		Charge								
18:46:45	0		Charge								
18:47:00	0		Charge								
18:47:15	0		Charge								
18:47:30	0		Charge								
18:47:45	0		Charge								
18:48:00	0		Charge								
18:48:15	0		Charge								
18:48:30	10		Charge								
18:48:45	15		Charge								
18:49:00	10		Charge								
18:49:15	10		Charge								
18:49:30	5		Charge								
18:49:45	5		Charge								
18:50:00	5		Charge								
18:50:15	0		Charge								
18:50:30	0		Charge								
18:50:45	5		Charge								
18:51:00	5		Charge								
18:51:15	10		Charge								
18:51:30	10		Charge								
18:51:45	5		Charge								
18:52:00	5		Charge								
18:52:15	5		Charge								
18:52:30	0		Charge								
18:52:45	0		Charge								
18:53:00	0		Charge								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1				TEST 2				TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:53:15	0		Charge								
18:53:30	0		Charge								
18:53:45	0		Charge								
18:54:00	0		Charge								
18:54:15	0		Charge								
18:54:30	0		Charge								
18:54:45	0	1.88	Charge								
18:55:00	0		Melt								
18:55:15	0		Melt								
18:55:30	0		Melt								
18:55:45	0		Melt								
18:56:00	0		Melt								
18:56:15	0		Melt								
18:56:30	0		Melt								
18:56:45	0		Melt								
18:57:00	0		Melt								
18:57:15	0		Melt								
18:57:30	0		Melt								
18:57:45	0		Melt								
18:58:00	0		Melt								
18:58:15	0		Melt								
18:58:30	0		Melt								
18:58:45	0		Melt								
18:59:00	Too dark for VE's										

TABLE 2.5. VISIBLE EMISSION OBSERVATION SUMMARY, BAGHOUSE EXHAUST

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
13:59:00	0		7:15:00	0		12:18:00	0	
13:59:15	0		7:15:15	0		12:18:15	0	
13:59:30	0		7:15:30	0		12:18:30	0	
13:59:45	0		7:15:45	0		12:18:45	15	
14:00:00	0		7:16:00	0		12:19:00	0	
14:00:15	0		7:16:15	0		12:19:15	0	
14:00:30	0		7:16:30	10		12:19:30	0	
14:00:45	0		7:16:45	0		12:19:45	0	
14:01:00	0		7:17:00	0		12:20:00	0	
14:01:15	0		7:17:15	0		12:20:15	0	
14:01:30	0		7:17:30	0		12:20:30	0	
14:01:45	0		7:17:45	10		12:20:45	0	
14:02:00	0		7:18:00	0		12:21:00	0	
14:02:15	0		7:18:15	0		12:21:15	0	
14:02:30	0		7:18:30	0		12:21:30	0	
14:02:45	0		7:18:45	0		12:21:45	0	
14:03:00	0		7:19:00	0		12:22:00	0	
14:03:15	0		7:19:15	0		12:22:15	0	
14:03:30	0		7:19:30	0		12:22:30	0	
14:03:45	0		7:19:45	0		12:22:45	0	
14:04:00	0		7:20:00	0		12:23:00	0	
14:04:15	0		7:20:15	5		12:23:15	0	
14:04:30	0		7:20:30	0		12:23:30	10	
14:04:45	0	0.00	7:20:45	0	1.04	12:23:45	0	1.04
14:05:00	0	0.00	7:21:00	0	1.04	12:24:00	0	1.04
14:05:15	0	0.00	7:21:15	15	1.67	12:24:15	0	1.04
14:05:30	0	0.00	7:21:30	0	1.67	12:24:30	10	1.46
14:05:45	0	0.00	7:21:45	0	1.67	12:24:45	0	0.83
14:06:00	0	0.00	7:22:00	0	1.67	12:25:00	0	0.83
14:06:15	0	0.00	7:22:15	20	2.50	12:25:15	0	0.83
14:06:30	0	0.00	7:22:30	0	2.08	12:25:30	0	0.83
14:06:45	0	0.00	7:22:45	0	2.08	12:25:45	0	0.83
14:07:00	0	0.00	7:23:00	0	2.08	12:26:00	0	0.83
14:07:15	0	0.00	7:23:15	0	2.08	12:26:15	0	0.83
14:07:30	0	0.00	7:23:30	0	2.08	12:26:30	0	0.83
14:07:45	0	0.00	7:23:45	0	1.67	12:26:45	0	0.83
14:08:00	0	0.00	7:24:00	0	1.67	12:27:00	0	0.83

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:08:15	0	0.00	7:24:15	0	1.67	12:27:15	0	0.83
14:08:30	0	0.00	7:24:30	0	1.67	12:27:30	0	0.83
14:08:45	0	0.00	7:24:45	15	2.29	12:27:45	0	0.83
14:09:00	0	0.00	7:25:00	0	2.29	12:28:00	0	0.83
14:09:15	0	0.00	7:25:15	0	2.29	12:28:15	0	0.83
14:09:30	0	0.00	7:25:30	0	2.29	12:28:30	0	0.83
14:09:45	0	0.00	7:25:45	0	2.29	12:28:45	0	0.83
14:10:00	0	0.00	7:26:00	0	2.29	12:29:00	20	1.67
14:10:15	0	0.00	7:26:15	0	2.08	12:29:15	0	1.67
14:10:30	0	0.00	7:26:30	0	2.08	12:29:30	0	1.25
14:10:45	0	0.00	7:26:45	0	2.08	12:29:45	0	1.25
14:11:00	0	0.00	7:27:00	10	2.50	12:30:00	0	1.25
14:11:15	0	0.00	7:27:15	0	1.88	12:30:15	0	1.25
14:11:30	0	0.00	7:27:30	0	1.88	12:30:30	0	0.83
14:11:45	0	0.00	7:27:45	0	1.88	12:30:45	0	0.83
14:12:00	0	0.00	7:28:00	0	1.88	12:31:00	0	0.83
14:12:15	0	0.00	7:28:15	0	1.04	12:31:15	0	0.83
14:12:30	0	0.00	7:28:30	0	1.04	12:31:30	0	0.83
14:12:45	0	0.00	7:28:45	0	1.04	12:31:45	0	0.83
14:13:00	0	0.00	7:29:00	0	1.04	12:32:00	0	0.83
14:13:15	0	0.00	7:29:15	0	1.04	12:32:15	0	0.83
14:13:30	0	0.00	7:29:30	0	1.04	12:32:30	0	0.83
14:13:45	0	0.00	7:29:45	0	1.04	12:32:45	0	0.83
14:14:00	0	0.00	7:30:00	0	1.04	12:33:00	0	0.83
14:14:15	0	0.00	7:30:15	0	1.04	12:33:15	0	0.83
14:14:30	0	0.00	7:30:30	0	1.04	12:33:30	0	0.83
14:14:45	0	0.00	7:30:45	0	0.42	12:33:45	25	1.88
14:15:00	0	0.00	7:31:00	0	0.42	12:34:00	0	1.88
14:15:15	0	0.00	7:31:15	0	0.42	12:34:15	0	1.88
14:15:30	0	0:00	7:31:30	20	1.25	12:34:30	0	1.88
14:15:45	0	0.00	7:31:45	0	1.25	12:34:45	0	1.88
14:16:00	0	0.00	7:32:00	0	1.25	12:35:00	20	1.88
14:16:15	0	0.00	7:32:15	0	1.25	12:35:15	0	1.88
14:16:30	0	0.00	7:32:30	0	1.25	12:35:30	0	1.88
14:16:45	0	0.00	7:32:45	10	1.67	12:35:45	0	1.88
14:17:00	0	0.00	7:33:00	0	1.25	12:36:00	0	1.88
14:17:15	0	0.00	7:33:15	0	1.25	12:36:15	0	1.88

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:17:30	0	0.00	7:33:30	0	1.25	12:36:30	0	1.88
14:17:45	0	0.00	7:33:45	0	1.25	12:36:45	0	1.88
14:18:00	0	0.00	7:34:00	0	1.25	12:37:00	0	1.88
14:18:15	0	0.00	7:34:15	0	1.25	12:37:15	0	1.88
14:18:30	0	0.00	7:34:30	0	1.25	12:37:30	0	1.88
14:18:45	0	0.00	7:34:45	0	1.25	12:37:45	0	1.88
14:19:00	0	0.00	7:35:00	0	1.25	12:38:00	0	1.88
14:19:15	0	0.00	7:35:15	0	1.25	12:38:15	0	1.88
14:19:30	0	0.00	7:35:30	0	1.25	12:38:30	0	1.88
14:19:45	0	0.00	7:35:45	0	1.25	12:38:45	0	1.88
14:20:00	0	0.00	7:36:00	0	1.25	12:39:00	0	1.88
14:20:15	0	0.00	7:36:15	0	1.25	12:39:15	0	1.88
14:20:30	0	0.00	7:36:30	0	1.25	12:39:30	0	1.88
14:20:45	0	0.00	7:36:45	0	1.25	12:39:45	0	0.83
14:21:00	0	0.00	7:37:00	0	1.25	12:40:00	0	0.83
14:21:15	0	0.00	7:37:15	0	1.25	12:40:15	0	0.83
14:21:30	0	0.00	7:37:30	0	0.42	12:40:30	0	0.83
14:21:45	0	0.00	7:37:45	0	0.42	12:40:45	0	0.83
14:22:00	0	0.00	7:38:00	0	0.42	12:41:00	0	0.00
14:22:15	0	0.00	7:38:15	0	0.42	12:41:15	0	0.00
14:22:30	0	0.00	7:38:30	0	0.42	12:41:30	0	0.00
14:22:45	0	0.00	7:38:45	0	0.00	12:41:45	10	0.42
14:23:00	0	0.00	7:39:00	0	0.00	12:42:00	0	0.42
14:23:15	0	0.00	7:39:15	0	0.00	12:42:15	0	0.42
14:23:30	0	0.00	7:39:30	0	0.00	12:42:30	0	0.42
14:23:45	0	0.00	7:39:45	0	0.00	12:42:45	0	0.42
14:24:00	0	0.00	7:40:00	0	0.00	12:43:00	10	0.83
14:24:15	0	0.00	7:40:15	0	0.00	12:43:15	0	0.83
14:24:30	0	0.00	7:40:30	0	0.00	12:43:30	0	0.83
14:24:45	0	0.00	7:40:45	0	0.00	12:43:45	0	0.83
14:25:00	0	0.00	7:41:00	0	0.00	12:44:00	0	0.83
14:25:15	0	0.00	7:41:15	0	0.00	12:44:15	0	0.83
14:25:30	0	0.00	7:41:30	0	0.00	12:44:30	0	0.83
14:25:45	0	0.00	7:41:45	0	0.00	12:44:45	0	0.83
14:26:00	0	0.00	7:42:00	0	0.00	12:45:00	0	0.83
14:26:15	0	0.00	7:42:15	0	0.00	12:45:15	0	0.83
14:26:30	0	0.00	7:42:30	0	0.00	12:45:30	0	0.83

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:26:45	0	0.00	7:42:45	0	0.00	12:45:45	0	0.83
14:27:00	0	0.00	7:43:00	0	0.00	12:46:00	0	0.83
14:27:15	0	0.00	7:43:15	0	0.00	12:46:15	0	0.83
14:27:30	0	0.00	7:43:30	0	0.00	12:46:30	10	1.25
14:27:45	0	0.00	7:43:45	0	0.00	12:46:45	0	1.25
14:28:00	0	0.00	7:44:00	0	0.00	12:47:00	0	1.25
14:28:15	0	0.00	7:44:15	0	0.00	12:47:15	0	1.25
14:28:30	0	0.00	7:44:30	0	0.00	12:47:30	0	1.25
14:28:45	0	0.00	7:44:45	0	0.00	12:47:45	20	1.67
14:29:00	0	0.00	7:45:00	0	0.00	12:48:00	0	1.67
14:29:15	0	0.00	7:45:15	0	0.00	12:48:15	0	1.67
14:29:30	0	0.00	7:45:30	15	0.63	12:48:30	0	1.67
14:29:45	0	0.00	7:45:45	0	0.63	12:48:45	0	1.67
14:30:00	0	0.00	7:46:00	0	0.63	12:49:00	0	1.25
14:30:15	0	0.00	7:46:15	0	0.63	12:49:15	0	1.25
14:30:30	0	0.00	7:46:30	0	0.63	12:49:30	0	1.25
14:30:45	0	0.00	7:46:45	0	0.63	12:49:45	0	1.25
14:31:00	0	0.00	7:47:00	0	0.63	12:50:00	15	1.88
14:31:15	0	0.00	7:47:15	0	0.63	12:50:15	0	1.88
14:31:30	0	0.00	7:47:30	10	1.04	12:50:30	0	1.88
14:31:45	0	0.00	7:47:45	0	1.04	12:50:45	0	1.88
14:32:00	0	0.00	7:48:00	0	1.04	12:51:00	0	1.88
14:32:15	10	0.42	7:48:15	0	1.04	12:51:15	0	1.88
14:32:30	0	0.42	7:48:30	0	1.04	12:51:30	0	1.88
14:32:45	0	0.42	7:48:45	0	1.04	12:51:45	0	1.88
14:33:00	0	0.42	7:49:00	0	1.04	12:52:00	20	2.71
14:33:15	0	0.42	7:49:15	0	1.04	12:52:15	0	2.71
14:33:30	0	0.42	7:49:30	0	1.04	12:52:30	0	2.29
14:33:45	0	0.42	7:49:45	15	1.67	12:52:45	0	2.29
14:34:00	0	0.42	7:50:00	0	1.67	12:53:00	0	2.29
14:34:15	0	0.42	7:50:15	0	1.67	12:53:15	0	2.29
14:34:30	0	0.42	7:50:30	0	1.67	12:53:30	0	2.29
14:34:45	0	0.42	7:50:45	0	1.67	12:53:45	0	1.46
14:35:00	0	0.42	7:51:00	0	1.67	12:54:00	0	1.46
14:35:15	0	0.42	7:51:15	0	1.67	12:54:15	0	1.46
14:35:30	0	0.42	7:51:30	0	1.04	12:54:30	0	1.46
14:35:45	15	1.04	7:51:45	0	1.04	12:54:45	0	1.46

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:36:00	0	1.04	7:52:00	0	1.04	12:55:00	0	1.46
14:36:15	0	1.04	7:52:15	0	1.04	12:55:15	0	1.46
14:36:30	0	1.04	7:52:30	0	1.04	12:55:30	0	1.46
14:36:45	0	1.04	7:52:45	0	1.04	12:55:45	0	1.46
14:37:00	0	1.04	7:53:00	0	1.04	12:56:00	0	0.83
14:37:15	0	1.04	7:53:15	0	1.04	12:56:15	0	0.83
14:37:30	0	1.04	7:53:30	0	0.63	12:56:30	0	0.83
14:37:45	0	1.04	7:53:45	0	0.63	12:56:45	0	0.83
14:38:00	0	1.04	7:54:00	0	0.63	12:57:00	0	0.83
14:38:15	0	0.63	7:54:15	0	0.63	12:57:15	0	0.83
14:38:30	0	0.63	7:54:30	15	1.25	12:57:30	0	0.83
14:38:45	0	0.63	7:54:45	0	1.25	12:57:45	0	0.83
14:39:00	0	0.63	7:55:00	0	1.25	12:58:00	0	0.00
14:39:15	0	0.63	7:55:15	0	1.25	12:58:15	0	0.00
14:39:30	0	0.63	7:55:30	0	1.25	12:58:30	0	0.00
14:39:45	0	0.63	7:55:45	0	0.63	12:58:45	0	0.00
14:40:00	0	0.63	7:56:00	0	0.63	12:59:00	0	0.00
14:40:15	0	0.63	7:56:15	0	0.63	12:59:15	0	0.00
14:40:30	0	0.63	7:56:30	0	0.63	12:59:30	0	0.00
14:40:45	0	0.63	7:56:45	0	0.63	12:59:45	0	0.00
14:41:00	0	0.63	7:57:00	0	0.63	13:00:00	0	0.00
14:41:15	0	0.63	7:57:15	0	0.63	13:00:15	0	0.00
14:41:30	0	0.63	7:57:30	0	0.63	13:00:30	0	0.00
14:41:45	0	0.00	7:57:45	0	0.63	13:00:45	0	0.00
14:42:00	0	0.00	7:58:00	0	0.63	13:01:00	0	0.00
14:42:15	0	0.00	7:58:15	0	0.63	13:01:15	0	0.00
14:42:30	0	0.00	7:58:30	0	0.63	13:01:30	0	0.00
14:42:45	0	0.00	7:58:45	0	0.63	13:01:45	0	0.00
14:43:00	0	0.00	7:59:00	0	0.63	13:02:00	0	0.00
14:43:15	0	0.00	7:59:15	0	0.63	13:02:15	0	0.00
14:43:30	0	0.00	7:59:30	0	0.63	13:02:30	0	0.00
14:43:45	0	0.00	7:59:45	0	0.63	13:02:45	0	0.00
14:44:00	0	0.00	8:00:00	0	0.63	13:03:00	0	0.00
14:44:15	0	0.00	8:00:15	0	0.63	13:03:15	0	0.00
14:44:30	0	0.00	8:00:30	0	0.00	13:03:30	0	0.00
14:44:45	0	0.00	8:00:45	0	0.00	13:03:45	0	0.00
14:45:00	0	0.00	8:01:00	0	0.00	13:04:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:45:15	0	0.00	8:01:15	0	0.00	13:04:15	0	0.00
14:45:30	0	0.00	8:01:30	0	0.00	13:04:30	0	0.00
14:45:45	0	0.00	8:01:45	0	0.00	13:04:45	0	0.00
14:46:00	0	0.00	8:02:00	0	0.00	13:05:00	0	0.00
14:46:15	0	0.00	8:02:15	0	0.00	13:05:15	0	0.00
14:46:30	0	0.00	8:02:30	0	0.00	13:05:30	0	0.00
14:46:45	0	0.00	8:02:45	0	0.00	13:05:45	0	0.00
14:47:00	0	0.00	8:03:00	0	0.00	13:06:00	0	0.00
14:47:15	0	0.00	8:03:15	0	0.00	13:06:15	0	0.00
14:47:30	0	0.00	8:03:30	0	0.00	13:06:30	0	0.00
14:47:45	0	0.00	8:03:45	0	0.00	13:06:45	0	0.00
14:48:00	0	0.00	8:04:00	0	0.00	13:07:00	0	0.00
14:48:15	0	0.00	8:04:15	0	0.00	13:07:15	0	0.00
14:48:30	0	0.00	8:04:30	0	0.00	13:07:30	0	0.00
14:48:45	0	0.00	8:04:45	0	0.00	13:07:45	0	0.00
14:49:00	0	0.00	8:05:00	0	0.00	13:08:00	0	0.00
14:49:15	0	0.00	8:05:15	0	0.00	13:08:15	0	0.00
14:49:30	0	0.00	8:05:30	0	0.00	13:08:30	0	0.00
14:49:45	0	0.00	8:05:45	0	0.00	13:08:45	0	0.00
14:50:00	0	0.00	8:06:00	0	0.00	13:09:00	0	0.00
14:50:15	0	0.00	8:06:15	0	0.00	13:09:15	0	0.00
14:50:30	0	0.00	8:06:30	0	0.00	13:09:30	0	0.00
14:50:45	0	0.00	8:06:45	0	0.00	13:09:45	0	0.00
14:51:00	0	0.00	8:07:00	0	0.00	13:10:00	0	0.00
14:51:15	0	0.00	8:07:15	10	0.42	13:10:15	0	0.00
14:51:30	0	0.00	8:07:30	0	0.42	13:10:30	0	0.00
14:51:45	0	0.00	8:07:45	0	0.42	13:10:45	0	0.00
14:52:00	0	0.00	8:08:00	0	0.42	13:11:00	0	0.00
14:52:15	0	0.00	8:08:15	0	0.42	13:11:15	0	0.00
14:52:30	0	0.00	8:08:30	15	1.04	13:11:30	0	0.00
14:52:45	0	0.00	8:08:45	0	1.04	13:11:45	0	0.00
14:53:00	0	0.00	8:09:00	0	1.04	13:12:00	0	0.00
14:53:15	0	0.00	8:09:15	0	1.04	13:12:15	0	0.00
14:53:30	0	0.00	8:09:30	0	1.04	13:12:30	0	0.00
14:53:45	0	0.00	8:09:45	0	1.04	13:12:45	0	0.00
14:54:00	0	0.00	8:10:00	0	1.04	13:13:00	0	0.00
14:54:15	0	0.00	8:10:15	0	1.04	13:13:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:54:30	0	0.00	8:10:30	0	1.04	13:13:30	0	0.00
14:54:45	0	0.00	8:10:45	5	1.25	13:13:45	0	0.00
14:55:00	0	0.00	8:11:00	0	1.25	13:14:00	0	0.00
14:55:15	0	0.00	8:11:15	0	1.25	13:14:15	0	0.00
14:55:30	0	0.00	8:11:30	0	1.25	13:14:30	0	0.00
14:55:45	0	0.00	8:11:45	0	1.25	13:14:45	0	0.00
14:56:00	0	0.00	8:12:00	0	1.25	13:15:00	0	0.00
14:56:15	0	0.00	8:12:15	0	1.25	13:15:15	0	0.00
14:56:30	0	0.00	8:12:30	0	1.25	13:15:30	0	0.00
14:56:45	20	0.83	8:12:45	0	1.25	13:15:45	0	0.00
14:57:00	0	0.83	8:13:00	15	1.88	13:16:00	0	0.00
14:57:15	0	0.83	8:13:15	0	1.46	13:16:15	0	0.00
14:57:30	0	0.83	8:13:30	0	1.46	13:16:30	0	0.00
14:57:45	0	0.83	8:13:45	0	1.46	13:16:45	0	0.00
14:58:00	0	0.83	8:14:00	0	1.46	13:17:00	0	0.00
14:58:15	0	0.83	8:14:15	0	1.46	13:17:15	0	0.00
14:58:30	0	0.83	8:14:30	0	0.83	13:17:30	0	0.00
14:58:45	0	0.83	8:14:45	0	0.83	13:17:45	0	0.00
14:59:00	0	0.83	8:15:00	0	0.83	13:18:00	0	0.00
14:59:15	0	0.83	8:15:15	0	0.83	13:18:15	0	0.00
14:59:30	0	0.83	8:15:30	0	0.83	13:18:30	0	0.00
14:59:45	0	0.83	8:15:45	0	0.83	13:18:45	0	0.00
15:00:00	0	0.83	8:16:00	0	0.83	13:19:00	0	0.00
15:00:15	0	0.83	8:16:15	0	0.83	13:19:15	0	0.00
15:00:30	0	0.83	8:16:30	0	0.83	13:19:30	0	0.00
15:00:45	0	0.83	8:16:45	0	0.63	13:19:45	0	0.00
15:01:00	0	0.83	8:17:00	0	0.63	13:20:00	0	0.00
15:01:15	0	0.83	8:17:15	0	0.63	13:20:15	0	0.00
15:01:30	0	0.83	8:17:30	0	0.63	13:20:30	0	0.00
15:01:45	0	0.83	8:17:45	20	1.46	13:20:45	0	0.00
15:02:00	0	0.83	8:18:00	0	1.46	13:21:00	0	0.00
15:02:15	0	0.83	8:18:15	0	1.46	13:21:15	0	0.00
15:02:30	0	0.83	8:18:30	0	1.46	13:21:30	0	0.00
15:02:45	0	0.00	8:18:45	15	2.08	13:21:45	0	0.00
15:03:00	0	0.00	8:19:00	0	1.46	13:22:00	0	0.00
15:03:15	0	0.00	8:19:15	0	1.46	13:22:15	0	0.00
15:03:30	0	0.00	8:19:30	0	1.46	13:22:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:03:45	0	0.00	8:19:45	0	1.46	13:22:45	0	0.00
15:04:00	0	0.00	8:20:00	0	1.46	13:23:00	0	0.00
15:04:15	0	0.00	8:20:15	0	1.46	13:23:15	0	0.00
15:04:30	0	0.00	8:20:30	0	1.46	13:23:30	0	0.00
15:04:45	0	0.00	8:20:45	0	1.46	13:23:45	0	0.00
15:05:00	0	0.00	8:21:00	0	1.46	13:24:00	0	0.00
15:05:15	0	0.00	8:21:15	10	1.88	13:24:15	0	0.00
15:05:30	0	0.00	8:21:30	0	1.88	13:24:30	0	0.00
15:05:45	25	1.04	8:21:45	0	1.88	13:24:45	0	0.00
15:06:00	0	1.04	8:22:00	0	1.88	13:25:00	0	0.00
15:06:15	0	1.04	8:22:15	0	1.88	13:25:15	0	0.00
15:06:30	0	1.04	8:22:30	0	1.88	13:25:30	0	0.00
15:06:45	10	1.46	8:22:45	0	1.88	13:25:45	0	0.00
15:07:00	0	1.46	8:23:00	0	1.88	13:26:00	0	0.00
15:07:15	0	1.46	8:23:15	0	1.88	13:26:15	0	0.00
15:07:30	0	1.46	8:23:30	0	1.88	13:26:30	0	0.00
15:07:45	0	1.46	8:23:45	0	1.04	13:26:45	0	0.00
15:08:00	0	1.46	8:24:00	0	1.04	13:27:00	0	0.00
15:08:15	0	1.46	8:24:15	0	1.04	13:27:15	0	0.00
15:08:30	0	1.46	8:24:30	0	1.04	13:27:30	0	0.00
15:08:45	0	1.46	8:24:45	0	0.42	13:27:45	0	0.00
15:09:00	0	1.46	8:25:00	0	0.42	13:28:00	0	0.00
15:09:15	0	1.46	8:25:15	0	0.42	13:28:15	0	0.00
15:09:30	0	1.46	8:25:30	0	0.42	13:28:30	0	0.00
15:09:45	0	1.46	8:25:45	0	0.42	13:28:45	0	0.00
15:10:00	0	1.46	8:26:00	0	0.42	13:29:00	0	0.00
15:10:15	0	1.46	8:26:15	0	0.42	13:29:15	0	0.00
15:10:30	0	1.46	8:26:30	0	0.42	13:29:30	0	0.00
15:10:45	0	1.46	8:26:45	0	0.42	13:29:45	0	0.00
15:11:00	0	1.46	8:27:00	0	0.42	13:30:00	0	0.00
15:11:15	0	1.46	8:27:15	0	0.00	13:30:15	0	0.00
15:11:30	0	1.46	8:27:30	0	0.00	13:30:30	0	0.00
15:11:45	0	0.42	8:27:45	0	0.00	13:30:45	0	0.00
15:12:00	0	0.42	8:28:00	0	0.00	13:31:00	0	0.00
15:12:15	0	0.42	8:28:15	0	0.00	13:31:15	0	0.00
15:12:30	0	0.42	8:28:30	0	0.00	13:31:30	0	0.00
15:12:45	0	0.00	8:28:45	0	0.00	13:31:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:13:00	0	0.00	8:29:00	0	0.00	13:32:00	0	0.00
15:13:15	0	0.00	8:29:15	0	0.00	13:32:15	0	0.00
15:13:30	0	0.00	8:29:30	0	0.00	13:32:30	0	0.00
15:13:45	0	0.00	8:29:45	0	0.00	13:32:45	0	0.00
15:14:00	0	0.00	8:30:00	0	0.00	13:33:00	0	0.00
15:14:15	0	0.00	8:30:15	10	0.42	13:33:15	0	0.00
15:14:30	0	0.00	8:30:30	0	0.42	13:33:30	0	0.00
15:14:45	0	0.00	8:30:45	0	0.42	13:33:45	0	0.00
15:15:00	0	0.00	8:31:00	0	0.42	13:34:00	0	0.00
15:15:15	0	0.00	8:31:15	0	0.42	13:34:15	0	0.00
15:15:30	0	0.00	8:31:30	0	0.42	13:34:30	0	0.00
15:15:45	0	0.00	8:31:45	0	0.42	13:34:45	0	0.00
15:16:00	0	0.00	8:32:00	0	0.42	13:35:00	0	0.00
15:16:15	0	0.00	8:32:15	0	0.42	13:35:15	0	0.00
15:16:30	0	0.00	8:32:30	0	0.42	13:35:30	0	0.00
15:16:45	0	0.00	8:32:45	0	0.42	13:35:45	0	0.00
15:17:00	0	0.00	8:33:00	0	0.42	13:36:00	0	0.00
15:17:15	0	0.00	8:33:15	0	0.42	13:36:15	0	0.00
15:17:30	0	0.00	8:33:30	0	0.42	13:36:30	0	0.00
15:17:45	0	0.00	8:33:45	0	0.42	13:36:45	0	0.00
15:18:00	0	0.00	8:34:00	0	0.42	13:37:00	0	0.00
15:18:15	0	0.00	8:34:15	0	0.42	13:37:15	0	0.00
15:18:30	0	0.00	8:34:30	0	0.42	13:37:30	0	0.00
15:18:45	0	0.00	8:34:45	0	0.42	13:37:45	0	0.00
15:19:00	0	0.00	8:35:00	0	0.42	13:38:00	0	0.00
15:19:15	0	0.00	8:35:15	0	0.42	13:38:15	0	0.00
15:19:30	0	0.00	8:35:30	0	0.42	13:38:30	0	0.00
15:19:45	0	0.00	8:35:45	0	0.42	13:38:45	0	0.00
15:20:00	0	0.00	8:36:00	0	0.42	13:39:00	0	0.00
15:20:15	0	0.00	8:36:15	0	0.00	13:39:15	0	0.00
15:20:30	0	0.00	8:36:30	0	0.00	13:39:30	0	0.00
15:20:45	0	0.00	8:36:45	0	0.00	13:39:45	0	0.00
15:21:00	0	0.00	8:37:00	0	0.00	13:40:00	0	0.00
15:21:15	0	0.00	8:37:15	0	0.00	13:40:15	0	0.00
15:21:30	0	0.00	8:37:30	0	0.00	13:40:30	0	0.00
15:21:45	0	0.00	8:37:45	0	0.00	13:40:45	0	0.00
15:22:00	0	0.00	8:38:00	0	0.00	13:41:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:22:15	0	0.00	8:38:15	0	0.00	13:41:15	0	0.00
15:22:30	0	0.00	8:38:30	0	0.00	13:41:30	0	0.00
15:22:45	0	0.00	8:38:45	0	0.00	13:41:45	0	0.00
15:23:00	0	0.00	8:39:00	0	0.00	13:42:00	0	0.00
15:23:15	0	0.00	8:39:15	0	0.00	13:42:15	0	0.00
15:23:30	0	0.00	8:39:30	0	0.00	13:42:30	0	0.00
15:23:45	0	0.00	8:39:45	0	0.00	13:42:45	0	0.00
15:24:00	0	0.00	8:40:00	0	0.00	13:43:00	0	0.00
15:24:15	0	0.00	8:40:15	0	0.00	13:43:15	0	0.00
15:24:30	0	0.00	8:40:30	0	0.00	13:43:30	0	0.00
15:24:45	0	0.00	8:40:45	0	0.00	13:43:45	0	0.00
15:25:00	0	0.00	8:41:00	0	0.00	13:44:00	0	0.00
15:25:15	0	0.00	8:41:15	0	0.00	13:44:15	0	0.00
15:25:30	0	0.00	8:41:30	0	0.00	13:44:30	0	0.00
15:25:45	0	0.00	8:41:45	0	0.00	13:44:45	0	0.00
15:26:00	0	0.00	8:42:00	0	0.00	13:45:00	0	0.00
15:26:15	0	0.00	8:42:15	0	0.00	13:45:15	0	0.00
15:26:30	0	0.00	8:42:30	0	0.00	13:45:30	0	0.00
15:26:45	0	0.00	8:42:45	0	0.00	13:45:45	0	0.00
15:27:00	0	0.00	8:43:00	0	0.00	13:46:00	0	0.00
15:27:15	0	0.00	8:43:15	0	0.00	13:46:15	0	0.00
15:27:30	0	0.00	8:43:30	0	0.00	13:46:30	0	0.00
15:27:45	0	0.00	8:43:45	0	0.00	13:46:45	0	0.00
15:28:00	0	0.00	8:44:00	0	0.00	13:47:00	0	0.00
15:28:15	0	0.00	8:44:15	0	0.00	13:47:15	0	0.00
15:28:30	0	0.00	8:44:30	0	0.00	13:47:30	0	0.00
15:28:45	0	0.00	8:44:45	0	0.00	13:47:45	0	0.00
15:29:00	0	0.00	8:45:00	0	0.00	13:48:00	0	0.00
15:29:15	0	0.00	8:45:15	0	0.00	13:48:15	0	0.00
15:29:30	0	0.00	8:45:30	0	0.00	13:48:30	0	0.00
15:29:45	0	0.00	8:45:45	0	0.00	13:48:45	0	0.00
15:30:00	0	0.00	8:46:00	0	0.00	13:49:00	0	0.00
15:30:15	0	0.00	8:46:15	0	0.00	13:49:15	0	0.00
15:30:30	0	0.00	8:46:30	0	0.00	13:49:30	0	0.00
15:30:45	0	0.00	8:46:45	0	0.00	13:49:45	0	0.00
15:31:00	0	0.00	8:47:00	0	0.00	13:50:00	0	0.00
15:31:15	0	0.00	8:47:15	0	0.00	13:50:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:31:30	0	0.00	8:47:30	0	0.00	13:50:30	0	0.00
15:31:45	0	0.00	8:47:45	0	0.00	13:50:45	0	0.00
15:32:00	0	0.00	8:48:00	0	0.00	13:51:00	0	0.00
15:32:15	0	0.00	8:48:15	0	0.00	13:51:15	0	0.00
15:32:30	0	0.00	8:48:30	0	0.00	13:51:30	0	0.00
15:32:45	0	0.00	8:48:45	0	0.00	13:51:45	0	0.00
15:33:00	0	0.00	8:49:00	0	0.00	13:52:00	0	0.00
15:33:15	0	0.00	8:49:15	0	0.00	13:52:15	0	0.00
15:33:30	0	0.00	8:49:30	0	0.00	13:52:30	0	0.00
15:33:45	0	0.00	8:49:45	0	0.00	13:52:45	0	0.00
15:34:00	0	0.00	8:50:00	0	0.00	13:53:00	0	0.00
15:34:15	0	0.00	8:50:15	0	0.00	13:53:15	0	0.00
15:34:30	0	0.00	8:50:30	0	0.00	13:53:30	0	0.00
15:34:45	0	0.00	8:50:45	0	0.00	13:53:45	0	0.00
15:35:00	0	0.00	8:51:00	0	0.00	13:54:00	0	0.00
15:35:15	0	0.00	8:51:15	0	0.00	13:54:15	0	0.00
15:35:30	0	0.00	8:51:30	0	0.00	13:54:30	0	0.00
15:35:45	0	0.00	8:51:45	0	0.00	13:54:45	0	0.00
15:36:00	0	0.00	8:52:00	0	0.00	13:55:00	0	0.00
15:36:15	0	0.00	8:52:15	0	0.00	13:55:15	0	0.00
15:36:30	0	0.00	8:52:30	0	0.00	13:55:30	0	0.00
15:36:45	0	0.00	8:52:45	0	0.00	13:55:45	0	0.00
15:37:00	0	0.00	8:53:00	0	0.00	13:56:00	0	0.00
15:37:15	0	0.00	8:53:15	0	0.00	13:56:15	0	0.00
15:37:30	0	0.00	8:53:30	0	0.00	13:56:30	0	0.00
15:37:45	0	0.00	8:53:45	0	0.00	13:56:45	0	0.00
15:38:00	0	0.00	8:54:00	0	0.00	13:57:00	0	0.00
15:38:15	0	0.00	8:54:15	0	0.00	13:57:15	0	0.00
15:38:30	0	0.00	8:54:30	0	0.00	13:57:30	0	0.00
15:38:45	0	0.00	8:54:45	0	0.00	13:57:45	0	0.00
15:39:00	0	0.00	8:55:00	0	0.00	13:58:00	0	0.00
15:39:15	0	0.00	8:55:15	0	0.00	13:58:15	0	0.00
15:39:30	0	0.00	8:55:30	0	0.00	13:58:30	0	0.00
15:39:45	0	0.00	8:55:45	0	0.00	13:58:45	0	0.00
15:40:00	0	0.00	8:56:00	0	0.00	13:59:00	0	0.00
15:40:15	0	0.00	8:56:15	0	0.00	13:59:15	0	0.00
15:40:30	0	0.00	8:56:30	0	0.00	13:59:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:40:45	0	0.00	8:56:45	0	0.00	13:59:45	0	0.00
15:41:00	0	0.00	8:57:00	0	0.00	14:00:00	0	0.00
15:41:15	0	0.00	8:57:15	0	0.00	14:00:15	0	0.00
15:41:30	0	0.00	8:57:30	0	0.00	14:00:30	20	0.83
15:41:45	0	0.00	8:57:45	0	0.00	14:00:45	0	0.83
15:42:00	0	0.00	8:58:00	0	0.00	14:01:00	0	0.83
15:42:15	0	0.00	8:58:15	0	0.00	14:01:15	0	0.83
15:42:30	0	0.00	8:58:30	0	0.00	14:01:30	0	0.83
15:42:45	0	0.00	8:58:45	0	0.00	14:01:45	10	1.25
15:43:00	0	0.00	8:59:00	0	0.00	14:02:00	0	1.25
15:43:15	0	0.00	8:59:15	0	0.00	14:02:15	0	1.25
15:43:30	0	0.00	8:59:30	0	0.00	14:02:30	0	1.25
15:43:45	0	0.00	8:59:45	0	0.00	14:02:45	0	1.25
15:44:00	0	0.00	9:00:00	0	0.00	14:03:00	0	1.25
15:44:15	0	0.00	9:00:15	0	0.00	14:03:15	0	1.25
15:44:30	0	0.00	9:00:30	0	0.00	14:03:30	0	1.25
15:44:45	0	0.00	9:00:45	0	0.00	14:03:45	0	1.25
15:45:00	0	0.00	9:01:00	0	0.00	14:04:00	0	1.25
15:45:15	0	0.00	9:01:15	0	0.00	14:04:15	0	1.25
15:45:30	0	0.00	9:01:30	0	0.00	14:04:30	0	1.25
15:45:45	0	0.00	9:01:45	0	0.00	14:04:45	0	1.25
15:46:00	0	0.00	9:02:00	0	0.00	14:05:00	0	1.25
15:46:15	0	0.00	9:02:15	0	0.00	14:05:15	0	1.25
15:46:30	0	0.00	9:02:30	0	0.00	14:05:30	0	1.25
15:46:45	0	0.00	9:02:45	0	0.00	14:05:45	0	1.25
15:47:00	0	0.00	9:03:00	0	0.00	14:06:00	0	1.25
15:47:15	0	0.00	9:03:15	0	0.00	14:06:15	0	1.25
15:47:30	0	0.00	9:03:30	0	0.00	14:06:30	0	0.42
15:47:45	0	0.00	9:03:45	0	0.00	14:06:45	0	0.42
15:48:00	0	0.00	9:04:00	0	0.00	14:07:00	0	0.42
15:48:15	0	0.00	9:04:15	0	0.00	14:07:15	0	0.42
15:48:30	0	0.00	9:04:30	0	0.00	14:07:30	0	0.42
15:48:45	0	0.00	9:04:45	0	0.00	14:07:45	0	0.00
15:49:00	0	0.00	9:05:00	0	0.00	14:08:00	0	0.00
15:49:15	0	0.00	9:05:15	0	0.00	14:08:15	0	0.00
15:49:30	0	0.00	9:05:30	0	0.00	14:08:30	15	0.63
15:49:45	0	0.00	9:05:45	0	0.00	14:08:45	0	0.63

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:50:00	0	0.00	9:06:00	0	0.00	14:09:00	0	0.63
15:50:15	0	0.00	9:06:15	0	0.00	14:09:15	0	0.63
15:50:30	0	0.00	9:06:30	0	0.00	14:09:30	0	0.63
15:50:45	0	0.00	9:06:45	0	0.00	14:09:45	0	0.63
15:51:00	0	0.00	9:07:00	0	0.00	14:10:00	0	0.63
15:51:15	0	0.00	9:07:15	0	0.00	14:10:15	0	0.63
15:51:30	0	0.00	9:07:30	0	0.00	14:10:30	0	0.63
15:51:45	0	0.00	9:07:45	0	0.00	14:10:45	0	0.63
15:52:00	0	0.00	9:08:00	0	0.00	14:11:00	0	0.63
15:52:15	0	0.00	9:08:15	0	0.00	14:11:15	0	0.63
15:52:30	0	0.00	9:08:30	0	0.00	14:11:30	0	0.63
15:52:45	0	0.00	9:08:45	0	0.00	14:11:45	0	0.63
15:53:00	0	0.00	9:09:00	0	0.00	14:12:00	0	0.63
15:53:15	0	0.00	9:09:15	0	0.00	14:12:15	0	0.63
15:53:30	0	0.00	9:09:30	0	0.00	14:12:30	0	0.63
15:53:45	0	0.00	9:09:45	0	0.00	14:12:45	0	0.63
15:54:00	0	0.00	9:10:00	0	0.00	14:13:00	0	0.63
15:54:15	0	0.00	9:10:15	0	0.00	14:13:15	15	1.25
15:54:30	0	0.00	9:10:30	0	0.00	14:13:30	0	1.25
15:54:45	0	0.00	9:10:45	0	0.00	14:13:45	0	1.25
15:55:00	0	0.00	9:11:00	0	0.00	14:14:00	0	1.25
15:55:15	0	0.00	9:11:15	0	0.00	14:14:15	0	1.25
15:55:30	0	0.00	9:11:30	0	0.00	14:14:30	0	0.63
15:55:45	0	0.00	9:11:45	0	0.00	14:14:45	0	0.63
15:56:00	0	0.00	9:12:00	0	0.00	14:15:00	0	0.63
15:56:15	0	0.00	9:12:15	0	0.00	14:15:15	0	0.63
15:56:30	0	0.00	9:12:30	0	0.00	14:15:30	0	0.63
15:56:45	0	0.00	9:12:45	0	0.00	14:15:45	0	0.63
15:57:00	0	0.00	9:13:00	0	0.00	14:16:00	0	0.63
15:57:15	0	0.00	9:13:15	0	0.00	14:16:15	0	0.63
15:57:30	0	0.00	9:13:30	0	0.00	14:16:30	10	1.04
15:57:45	0	0.00	9:13:45	0	0.00	14:16:45	0	1.04
15:58:00	0	0.00	9:14:00	0	0.00	14:17:00	0	1.04
15:58:15	0	0.00	9:14:15	0	0.00	14:17:15	0	1.04
15:58:30	0	0.00	9:14:30	0	0.00	14:17:30	0	1.04
15:58:45	0	0.00	9:14:45	0	0.00	14:17:45	0	1.04
15:59:00	0	0.00	9:15:00	0	0.00	14:18:00	0	1.04

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:59:15	0	0.00	9:15:15	0	0.00	14:18:15	0	1.04
15:59:30	0	0.00	9:15:30	0	0.00	14:18:30	0	1.04
15:59:45	0	0.00	9:15:45	0	0.00	14:18:45	0	1.04
16:00:00	0	0.00	9:16:00	0	0.00	14:19:00	0	1.04
16:00:15	0	0.00	9:16:15	0	0.00	14:19:15	0	0.42
16:00:30	0	0.00	9:16:30	0	0.00	14:19:30	0	0.42
16:00:45	0	0.00	9:16:45	0	0.00	14:19:45	0	0.42
16:01:00	0	0.00	9:17:00	0	0.00	14:20:00	0	0.42
16:01:15	0	0.00	9:17:15	0	0.00	14:20:15	0	0.42
16:01:30	0	0.00	9:17:30	0	0.00	14:20:30	0	0.42
16:01:45	0	0.00	9:17:45	0	0.00	14:20:45	0	0.42
16:02:00	0	0.00	9:18:00	0	0.00	14:21:00	0	0.42
16:02:15	0	0.00	9:18:15	0	0.00	14:21:15	0	0.42
16:02:30	0	0.00	9:18:30	0	0.00	14:21:30	0	0.42
16:02:45	0	0.00	9:18:45	0	0.00	14:21:45	0	0.42
16:03:00	0	0.00	9:19:00	0	0.00	14:22:00	0	0.42
16:03:15	0	0.00	9:19:15	0	0.00	14:22:15	0	0.42
16:03:30	0	0.00	9:19:30	0	0.00	14:22:30	0	0.00
16:03:45	0	0.00	9:19:45	0	0.00	14:22:45	0	0.00
16:04:00	0	0.00	9:20:00	0	0.00	14:23:00	0	0.00
16:04:15	0	0.00	9:20:15	0	0.00	14:23:15	0	0.00
16:04:30	0	0.00	9:20:30	0	0.00	14:23:30	0	0.00
16:04:45	0	0.00	9:20:45	0	0.00	14:23:45	0	0.00
16:05:00	0	0.00	9:21:00	0	0.00	14:24:00	0	0.00
16:05:15	0	0.00	9:21:15	0	0.00	14:24:15	0	0.00
16:05:30	0	0.00	9:21:30	0	0.00	14:24:30	0	0.00
16:05:45	0	0.00	9:21:45	0	0.00	14:24:45	0	0.00
16:06:00	0	0.00	9:22:00	5	0.21	14:25:00	0	0.00
16:06:15	0	0.00	9:22:15	0	0.21	14:25:15	0	0.00
16:06:30	0	0.00	9:22:30	0	0.21	14:25:30	0	0.00
16:06:45	0	0.00	9:22:45	0	0.21	14:25:45	0	0.00
16:07:00	0	0.00	9:23:00	0	0.21	14:26:00	0	0.00
16:07:15	0	0.00	9:23:15	0	0.21	14:26:15	0	0.00
16:07:30	0	0.00	9:23:30	0	0.21	14:26:30	0	0.00
16:07:45	0	0.00	9:23:45	0	0.21	14:26:45	0	0.00
16:08:00	0	0.00	9:24:00	0	0.21	14:27:00	0	0.00
16:08:15	0	0.00	9:24:15	10	0.63	14:27:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:08:30	0	0.00	9:24:30	0	0.63	14:27:30	0	0.00
16:08:45	0	0.00	9:24:45	0	0.63	14:27:45	0	0.00
16:09:00	0	0.00	9:25:00	0	0.63	14:28:00	0	0.00
16:09:15	0	0.00	9:25:15	0	0.63	14:28:15	0	0.00
16:09:30	0	0.00	9:25:30	0	0.63	14:28:30	0	0.00
16:09:45	0	0.00	9:25:45	0	0.63	14:28:45	0	0.00
16:10:00	0	0.00	9:26:00	0	0.63	14:29:00	0	0.00
16:10:15	0	0.00	9:26:15	0	0.63	14:29:15	0	0.00
16:10:30	0	0.00	9:26:30	0	0.63	14:29:30	0	0.00
16:10:45	0	0.00	9:26:45	0	0.63	14:29:45	0	0.00
16:11:00	0	0.00	9:27:00	0	0.63	14:30:00	0	0.00
16:11:15	0	0.00	9:27:15	0	0.63	14:30:15	0	0.00
16:11:30	0	0.00	9:27:30	0	0.63	14:30:30	0	0.00
16:11:45	0	0.00	9:27:45	0	0.63	14:30:45	0	0.00
16:12:00	0	0.00	9:28:00	0	0.42	14:31:00	0	0.00
16:12:15	0	0.00	9:28:15	0	0.42	14:31:15	0	0.00
16:12:30	0	0.00	9:28:30	0	0.42	14:31:30	0	0.00
16:12:45	0	0.00	9:28:45	0	0.42	14:31:45	0	0.00
16:13:00	0	0.00	9:29:00	0	0.42	14:32:00	0	0.00
16:13:15	0	0.00	9:29:15	0	0.42	14:32:15	0	0.00
16:13:30	0	0.00	9:29:30	0	0.42	14:32:30	0	0.00
16:13:45	0	0.00	9:29:45	0	0.42	14:32:45	0	0.00
16:14:00	0	0.00	9:30:00	0	0.42	14:33:00	0	0.00
16:14:15	0	0.00	9:30:15	0	0.00	14:33:15	0	0.00
16:14:30	0	0.00	9:30:30	0	0.00	14:33:30	0	0.00
16:14:45	0	0.00	9:30:45	0	0.00	14:33:45	15	0.63
16:15:00	0	0.00	9:31:00	0	0.00	14:34:00	0	0.63
16:15:15	0	0.00	9:31:15	0	0.00	14:34:15	0	0.63
16:15:30	0	0.00	9:31:30	0	0.00	14:34:30	0	0.63
16:15:45	20	0.83	9:31:45	0	0.00	14:34:45	0	0.63
16:16:00	0	0.83	9:32:00	0	0.00	14:35:00	0	0.63
16:16:15	0	0.83	9:32:15	0	0.00	14:35:15	0	0.63
16:16:30	0	0.83	9:32:30	15	0.63	14:35:30	0	0.63
16:16:45	10	1.25	9:32:45	0	0.63	14:35:45	0	0.63
16:17:00	0	1.25	9:33:00	0	0.63	14:36:00	0	0.63
16:17:15	0	1.25	9:33:15	0	0.63	14:36:15	0	0.63
16:17:30	0	1.25	9:33:30	0	0.63	14:36:30	0	0.63

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:17:45	0	1.25	9:33:45	0	0.63	14:36:45	0	0.63
16:18:00	0	1.25	9:34:00	0	0.63	14:37:00	0	0.63
16:18:15	0	1.25	9:34:15	0	0.63	14:37:15	0	0.63
16:18:30	0	1.25	9:34:30	0	0.63	14:37:30	0	0.63
16:18:45	0	1.25	9:34:45	0	0.63	14:37:45	0	0.63
16:19:00	0	1.25	9:35:00	0	0.63	14:38:00	0	0.63
16:19:15	0	1.25	9:35:15	0	0.63	14:38:15	0	0.63
16:19:30	0	1.25	9:35:30	0	0.63	14:38:30	0	0.63
16:19:45	0	1.25	9:35:45	0	0.63	14:38:45	0	0.63
16:20:00	0	1.25	9:36:00	0	0.63	14:39:00	0	0.63
16:20:15	0	1.25	9:36:15	0	0.63	14:39:15	0	0.63
16:20:30	0	1.25	9:36:30	0	0.63	14:39:30	0	0.63
16:20:45	0	1.25	9:36:45	0	0.63	14:39:45	0	0.00
16:21:00	0	1.25	9:37:00	0	0.63	14:40:00	0	0.00
16:21:15	0	1.25	9:37:15	0	0.63	14:40:15	0	0.00
16:21:30	0	1.25	9:37:30	0	0.63	14:40:30	0	0.00
16:21:45	0	0.42	9:37:45	0	0.63	14:40:45	0	0.00
16:22:00	0	0.42	9:38:00	0	0.63	14:41:00	0	0.00
16:22:15	0	0.42	9:38:15	0	0.63	14:41:15	0	0.00
16:22:30	0	0.42	9:38:30	0	0.00	14:41:30	0	0.00
16:22:45	0	0.00	9:38:45	0	0.00	14:41:45	0	0.00
16:23:00	0	0.00	9:39:00	0	0.00	14:42:00	0	0.00
16:23:15	0	0.00	9:39:15	0	0.00	14:42:15	0	0.00
16:23:30	0	0.00	9:39:30	0	0.00	14:42:30	0	0.00
16:23:45	0	0.00	9:39:45	0	0.00	14:42:45	0	0.00
16:24:00	0	0.00	9:40:00	0	0.00	14:43:00	0	0.00
16:24:15	0	0.00	9:40:15	0	0.00	14:43:15	0	0.00
16:24:30	0	0.00	9:40:30	0	0.00	14:43:30	0	0.00
16:24:45	0	0.00	9:40:45	0	0.00	14:43:45	0	0.00
16:25:00	0	0.00	9:41:00	0	0.00	14:44:00	0	0.00
16:25:15	0	0.00	9:41:15	0	0.00	14:44:15	0	0.00
16:25:30	0	0.00	9:41:30	0	0.00	14:44:30	0	0.00
16:25:45	0	0.00	9:41:45	0	0.00	14:44:45	0	0.00
16:26:00	0	0.00	9:42:00	0	0.00	14:45:00	0	0.00
16:26:15	0	0.00	9:42:15	0	0.00	14:45:15	0	0.00
16:26:30	0	0.00	9:42:30	0	0.00	14:45:30	0	0.00
16:26:45	0	0.00	9:42:45	0	0.00	14:45:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:27:00	0	0.00	9:43:00	0	0.00	14:46:00	0	0.00
16:27:15	0	0.00	9:43:15	0	0.00	14:46:15	0	0.00
16:27:30	0	0.00	9:43:30	0	0.00	14:46:30	0	0.00
16:27:45	0	0.00	9:43:45	0	0.00	14:46:45	0	0.00
16:28:00	0	0.00	9:44:00	10	0.42	14:47:00	0	0.00
16:28:15	15	0.63	9:44:15	0	0.42	14:47:15	0	0.00
16:28:30	0	0.63	9:44:30	0	0.42	14:47:30	0	0.00
16:28:45	0	0.63	9:44:45	0	0.42	14:47:45	0	0.00
16:29:00	0	0.63	9:45:00	0	0.42	14:48:00	0	0.00
16:29:15	0	0.63	9:45:15	0	0.42	14:48:15	0	0.00
16:29:30	10	1.04	9:45:30	0	0.42	14:48:30	0	0.00
16:29:45	0	1.04	9:45:45	0	0.42	14:48:45	0	0.00
16:30:00	0	1.04	9:46:00	0	0.42	14:49:00	0	0.00
16:30:15	0	1.04	9:46:15	0	0.42	14:49:15	0	0.00
16:30:30	0	1.04	9:46:30	0	0.42	14:49:30	0	0.00
16:30:45	0	1.04	9:46:45	0	0.42	14:49:45	0	0.00
16:31:00	0	1.04	9:47:00	0	0.42	14:50:00	0	0.00
16:31:15	0	1.04	9:47:15	0	0.42	14:50:15	0	0.00
16:31:30	20	1.88	9:47:30	0	0.42	14:50:30	0	0.00
16:31:45	0	1.88	9:47:45	0	0.42	14:50:45	0	0.00
16:32:00	0	1.88	9:48:00	0	0.42	14:51:00	0	0.00
16:32:15	0	1.88	9:48:15	0	0.42	14:51:15	0	0.00
16:32:30	0	1.88	9:48:30	0	0.42	14:51:30	0	0.00
16:32:45	0	1.88	9:48:45	0	0.42	14:51:45	0	0.00
16:33:00	0	1.88	9:49:00	0	0.42	14:52:00	0	0.00
16:33:15	0	1.88	9:49:15	0	0.42	14:52:15	0	0.00
16:33:30	0	1.88	9:49:30	0	0.42	14:52:30	0	0.00
16:33:45	0	1.88	9:49:45	0	0.42	14:52:45	0	0.00
16:34:00	0	1.88	9:50:00	0	0.00	14:53:00	0	0.00
16:34:15	0	1.25	9:50:15	0	0.00	14:53:15	0	0.00
16:34:30	0	1.25	9:50:30	0	0.00	14:53:30	0	0.00
16:34:45	0	1.25	9:50:45	0	0.00	14:53:45	0	0.00
16:35:00	0	1.25	9:51:00	0	0.00	14:54:00	0	0.00
16:35:15	0	1.25	9:51:15	0	0.00	14:54:15	0	0.00
16:35:30	0	0.83	9:51:30	0	0.00	14:54:30	0	0.00
16:35:45	0	0.83	9:51:45	0	0.00	14:54:45	0	0.00
16:36:00	0	0.83	9:52:00	0	0.00	14:55:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:36:15	0	0.83	9:52:15	0	0.00	14:55:15	0	0.00
16:36:30	0	0.83	9:52:30	0	0.00	14:55:30	0	0.00
16:36:45	0	0.83	9:52:45	0	0.00	14:55:45	0	0.00
16:37:00	0	0.83	9:53:00	0	0.00	14:56:00	0	0.00
16:37:15	0	0.83	9:53:15	0	0.00	14:56:15	0	0.00
16:37:30	0	0.00	9:53:30	0	0.00	14:56:30	0	0.00
16:37:45	0	0.00	9:53:45	0	0.00	14:56:45	0	0.00
16:38:00	0	0.00	9:54:00	0	0.00	14:57:00	0	0.00
16:38:15	0	0.00	9:54:15	0	0.00	14:57:15	0	0.00
16:38:30	0	0.00	9:54:30	0	0.00	14:57:30	0	0.00
16:38:45	20	0.83	9:54:45	0	0.00	14:57:45	0	0.00
16:39:00	0	0.83	9:55:00	0	0.00	14:58:00	0	0.00
16:39:15	0	0.83	9:55:15	0	0.00	14:58:15	0	0.00
16:39:30	0	0.83	9:55:30	0	0.00	14:58:30	0	0.00
16:39:45	0	0.83	9:55:45	0	0.00	14:58:45	0	0.00
16:40:00	0	0.83	9:56:00	0	0.00	14:59:00	0	0.00
16:40:15	0	0.83	9:56:15	0	0.00	14:59:15	0	0.00
16:40:30	0	0.83	9:56:30	0	0.00	14:59:30	0	0.00
16:40:45	0	0.83	9:56:45	0	0.00	14:59:45	0	0.00
16:41:00	0	0.83	9:57:00	10	0.42	15:00:00	0	0.00
16:41:15	0	0.83	9:57:15	0	0.42	15:00:15	0	0.00
16:41:30	0	0.83	9:57:30	0	0.42	15:00:30	0	0.00
16:41:45	0	0.83	9:57:45	0	0.42	15:00:45	0	0.00
16:42:00	0	0.83	9:58:00	0	0.42	15:01:00	0	0.00
16:42:15	0	0.83	9:58:15	0	0.42	15:01:15	0	0.00
16:42:30	0	0.83	9:58:30	0	0.42	15:01:30	0	0.00
16:42:45	0	0.83	9:58:45	0	0.42	15:01:45	0	0.00
16:43:00	0	0.83	9:59:00	0	0.42	15:02:00	0	0.00
16:43:15	0	0.83	9:59:15	0	0.42	15:02:15	0	0.00
16:43:30	0	0.83	9:59:30	0	0.42	15:02:30	0	0.00
16:43:45	0	0.83	9:59:45	0	0.42	15:02:45	0	0.00
16:44:00	0	0.83	10:00:00	0	0.42	15:03:00	0	0.00
16:44:15	0	0.83	10:00:15	0	0.42	15:03:15	0	0.00
16:44:30	0	0.83	10:00:30	0	0.42	15:03:30	0	0.00
16:44:45	0	0.00	10:00:45	0	0.42	15:03:45	0	0.00
16:45:00	0	0.00	10:01:00	0	0.42	15:04:00	0	0.00
16:45:15	0	0.00	10:01:15	0	0.42	15:04:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:45:30	0	0.00	10:01:30	0	0.42	15:04:30	0	0.00
16:45:45	0	0.00	10:01:45	0	0.42	15:04:45	0	0.00
16:46:00	0	0.00	10:02:00	0	0.42	15:05:00	0	0.00
16:46:15	0	0.00	10:02:15	0	0.42	15:05:15	0	0.00
16:46:30	0	0.00	10:02:30	0	0.42	15:05:30	0	0.00
16:46:45	0	0.00	10:02:45	0	0.42	15:05:45	0	0.00
16:47:00	0	0.00	10:03:00	0	0.00	15:06:00	0	0.00
16:47:15	0	0.00	10:03:15	0	0.00	15:06:15	0	0.00
16:47:30	0	0.00	10:03:30	0	0.00	15:06:30	0	0.00
16:47:45	0	0.00	10:03:45	0	0.00	15:06:45	0	0.00
16:48:00	0	0.00	10:04:00	0	0.00	15:07:00	0	0.00
16:48:15	0	0.00	10:04:15	0	0.00	15:07:15	0	0.00
16:48:30	0	0.00	10:04:30	0	0.00	15:07:30	0	0.00
16:48:45	0	0.00	10:04:45	0	0.00	15:07:45	0	0.00
16:49:00	0	0.00	10:05:00	0	0.00	15:08:00	0	0.00
16:49:15	0	0.00	10:05:15	15	0.63	15:08:15	0	0.00
16:49:30	0	0.00	10:05:30	0	0.63	15:08:30	0	0.00
16:49:45	0	0.00	10:05:45	0	0.63	15:08:45	0	0.00
16:50:00	0	0.00	10:06:00	0	0.63	15:09:00	0	0.00
16:50:15	0	0.00	10:06:15	0	0.63	15:09:15	0	0.00
16:50:30	0	0.00	10:06:30	0	0.63	15:09:30	0	0.00
16:50:45	0	0.00	10:06:45	0	0.63	15:09:45	0	0.00
16:51:00	0	0.00	10:07:00	0	0.63	15:10:00	0	0.00
16:51:15	10	0.42	10:07:15	0	0.63	15:10:15	0	0.00
16:51:30	0	0.42	10:07:30	0	0.63	15:10:30	0	0.00
16:51:45	0	0.42	10:07:45	0	0.63	15:10:45	0	0.00
16:52:00	0	0.42	10:08:00	0	0.63	15:11:00	0	0.00
16:52:15	0	0.42	10:08:15	0	0.63	15:11:15	0	0.00
16:52:30	25	1.46	10:08:30	0	0.63	15:11:30	0	0.00
16:52:45	0	1.46	10:08:45	0	0.63	15:11:45	0	0.00
16:53:00	0	1.46	10:09:00	0	0.63	15:12:00	0	0.00
16:53:15	0	1.46	10:09:15	0	0.63	15:12:15	0	0.00
16:53:30	0	1.46	10:09:30	0	0.63	15:12:30	0	0.00
16:53:45	0	1.46	10:09:45	0	0.63	15:12:45	0	0.00
16:54:00	0	1.46	10:10:00	0	0.63	15:13:00	0	0.00
16:54:15	0	1.46	10:10:15	0	0.63	15:13:15	0	0.00
16:54:30	0	1.46	10:10:30	0	0.63	15:13:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:54:45	0	1.46	10:10:45	0	0.63	15:13:45	0	0.00
16:55:00	0	1.46	10:11:00	0	0.63	15:14:00	0	0.00
16:55:15	0	1.46	10:11:15	0	0.00	15:14:15	0	0.00
16:55:30	0	1.46	10:11:30	0	0.00	15:14:30	0	0.00
16:55:45	0	1.46	10:11:45	0	0.00	15:14:45	0	0.00
16:56:00	0	1.46	10:12:00	15	0.63	15:15:00	0	0.00
16:56:15	0	1.46	10:12:15	0	0.63	15:15:15	0	0.00
16:56:30	0	1.46	10:12:30	0	0.63	15:15:30	0	0.00
16:56:45	20	2.29	10:12:45	0	0.63	15:15:45	0	0.00
16:57:00	0	2.29	10:13:00	0	0.63	15:16:00	0	0.00
16:57:15	0	1.88	10:13:15	10	1.04	15:16:15	0	0.00
16:57:30	0	1.88	10:13:30	0	1.04	15:16:30	0	0.00
16:57:45	0	1.88	10:13:45	0	1.04	15:16:45	0	0.00
16:58:00	0	1.88	10:14:00	0	1.04	15:17:00	0	0.00
16:58:15	0	1.88	10:14:15	0	1.04	15:17:15	0	0.00
16:58:30	0	0.83	10:14:30	0	1.04	15:17:30	0	0.00
16:58:45	0	0.83	10:14:45	0	1.04	15:17:45	0	0.00
16:59:00	0	0.83	10:15:00	0	1.04	15:18:00	0	0.00
16:59:15	0	0.83	10:15:15	0	1.04	15:18:15	0	0.00
16:59:30	0	0.83	10:15:30	0	1.04	15:18:30	0	0.00
16:59:45	0	0.83	10:15:45	0	1.04	15:18:45	0	0.00
17:00:00	0	0.83	10:16:00	0	1.04	15:19:00	0	0.00
17:00:15	0	0.83	10:16:15	0	1.04	15:19:15	0	0.00
17:00:30	0	0.83	10:16:30	0	1.04	15:19:30	0	0.00
17:00:45	0	0.83	10:16:45	10	1.46	15:19:45	0	0.00
17:01:00	0	0.83	10:17:00	0	1.46	15:20:00	0	0.00
17:01:15	0	0.83	10:17:15	0	1.46	15:20:15	0	0.00
17:01:30	0	0.83	10:17:30	0	1.46	15:20:30	0	0.00
17:01:45	0	0.83	10:17:45	0	1.46	15:20:45	0	0.00
17:02:00	0	0.83	10:18:00	15	1.46	15:21:00	0	0.00
17:02:15	0	0.83	10:18:15	0	1.46	15:21:15	0	0.00
17:02:30	0	0.83	10:18:30	0	1.46	15:21:30	0	0.00
17:02:45	0	0.00	10:18:45	0	1.46	15:21:45	0	0.00
17:03:00	0	0.00	10:19:00	0	1.46	15:22:00	0	0.00
17:03:15	0	0.00	10:19:15	0	1.04	15:22:15	0	0.00
17:03:30	0	0.00	10:19:30	0	1.04	15:22:30	0	0.00
17:03:45	0	0.00	10:19:45	0	1.04	15:22:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:04:00	0	0.00	10:20:00	0	1.04	15:23:00	0	0.00
17:04:15	0	0.00	10:20:15	10	1.46	15:23:15	0	0.00
17:04:30	0	0.00	10:20:30	0	1.46	15:23:30	0	0.00
17:04:45	0	0.00	10:20:45	0	1.46	15:23:45	0	0.00
17:05:00	0	0.00	10:21:00	0	1.46	15:24:00	0	0.00
17:05:15	0	0.00	10:21:15	0	1.46	15:24:15	0	0.00
17:05:30	0	0.00	10:21:30	0	1.46	15:24:30	0	0.00
17:05:45	0	0.00	10:21:45	0	1.46	15:24:45	0	0.00
17:06:00	0	0.00	10:22:00	0	1.46	15:25:00	0	0.00
17:06:15	0	0.00	10:22:15	15	2.08	15:25:15	0	0.00
17:06:30	0	0.00	10:22:30	0	2.08	15:25:30	0	0.00
17:06:45	0	0.00	10:22:45	0	1.67	15:25:45	0	0.00
17:07:00	0	0.00	10:23:00	0	1.67	15:26:00	0	0.00
17:07:15	0	0.00	10:23:15	0	1.67	15:26:15	0	0.00
17:07:30	0	0.00	10:23:30	0	1.67	15:26:30	0	0.00
17:07:45	0	0.00	10:23:45	0	1.67	15:26:45	0	0.00
17:08:00	0	0.00	10:24:00	0	1.04	15:27:00	0	0.00
17:08:15	0	0.00	10:24:15	0	1.04	15:27:15	0	0.00
17:08:30	20	0.83	10:24:30	0	1.04	15:27:30	0	0.00
17:08:45	0	0.83	10:24:45	0	1.04	15:27:45	0	0.00
17:09:00	0	0.83	10:25:00	0	1.04	15:28:00	0	0.00
17:09:15	0	0.83	10:25:15	0	1.04	15:28:15	0	0.00
17:09:30	0	0.83	10:25:30	0	1.04	15:28:30	0	0.00
17:09:45	0	0.83	10:25:45	0	1.04	15:28:45	0	0.00
17:10:00	0	0.83	10:26:00	0	1.04	15:29:00	0	0.00
17:10:15	0	0.83	10:26:15	0	0.63	15:29:15	0	0.00
17:10:30	0	0.83	10:26:30	0	0.63	15:29:30	0	0.00
17:10:45	0	0.83	10:26:45	0	0.63	15:29:45	0	0.00
17:11:00	0	0.83	10:27:00	15	1.25	15:30:00	0	0.00
17:11:15	0	0.83	10:27:15	0	1.25	15:30:15	0	0.00
17:11:30	0	0.83	10:27:30	0	1.25	15:30:30	0	0.00
17:11:45	0	0.83	10:27:45	0	1.25	15:30:45	0	0.00
17:12:00	0	0.83	10:28:00	0	1.25	15:31:00	0	0.00
17:12:15	0	0.83	10:28:15	15	1.25	15:31:15	0	0.00
17:12:30	0	0.83	10:28:30	0	1.25	15:31:30	0	0.00
17:12:45	0	0.83	10:28:45	0	1.25	15:31:45	0	0.00
17:13:00	0	0.83	10:29:00	0	1.25	15:32:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:13:15	0	0.83	10:29:15	0	1.25	15:32:15	0	0.00
17:13:30	0	0.83	10:29:30	0	1.25	15:32:30	0	0.00
17:13:45	0	0.83	10:29:45	0	1.25	15:32:45	0	0.00
17:14:00	0	0.83	10:30:00	0	1.25	15:33:00	0	0.00
17:14:15	0	0.83	10:30:15	0	1.25	15:33:15	0	0.00
17:14:30	25	1.04	10:30:30	0	1.25	15:33:30	0	0.00
17:14:45	0	1.04	10:30:45	0	1.25	15:33:45	0	0.00
17:15:00	0	1.04	10:31:00	0	1.25	15:34:00	0	0.00
17:15:15	0	1.04	10:31:15	0	1.25	15:34:15	0	0.00
17:15:30	20	1.88	10:31:30	0	1.25	15:34:30	0	0.00
17:15:45	0	1.88	10:31:45	0	1.25	15:34:45	0	0.00
17:16:00	0	1.88	10:32:00	0	1.25	15:35:00	0	0.00
17:16:15	0	1.88	10:32:15	0	1.25	15:35:15	0	0.00
17:16:30	0	1.88	10:32:30	0	1.25	15:35:30	0	0.00
17:16:45	0	1.88	10:32:45	0	1.25	15:35:45	0	0.00
17:17:00	0	1.88	10:33:00	0	0.63	15:36:00	0	0.00
17:17:15	0	1.88	10:33:15	0	0.63	15:36:15	0	0.00
17:17:30	0	1.88	10:33:30	0	0.63	15:36:30	0	0.00
17:17:45	0	1.88	10:33:45	0	0.63	15:36:45	0	0.00
17:18:00	0	1.88	10:34:00	0	0.63	15:37:00	0	0.00
17:18:15	0	1.88	10:34:15	0	0.00	15:37:15	0	0.00
17:18:30	0	1.88	10:34:30	0	0.00	15:37:30	0	0.00
17:18:45	0	1.88	10:34:45	0	0.00	15:37:45	0	0.00
17:19:00	0	1.88	10:35:00	15	0.63	15:38:00	0	0.00
17:19:15	0	1.88	10:35:15	0	0.63	15:38:15	0	0.00
17:19:30	0	1.88	10:35:30	0	0.63	15:38:30	0	0.00
17:19:45	0	1.88	10:35:45	0	0.63	15:38:45	0	0.00
17:20:00	0	1.88	10:36:00	0	0.63	15:39:00	0	0.00
17:20:15	0	1.88	10:36:15	10	1.04	15:39:15	0	0.00
17:20:30	0	0.83	10:36:30	0	1.04	15:39:30	0	0.00
17:20:45	0	0.83	10:36:45	0	1.04	15:39:45	0	0.00
17:21:00	0	0.83	10:37:00	0	1.04	15:40:00	0	0.00
17:21:15	0	0.83	10:37:15	0	1.04	15:40:15	0	0.00
17:21:30	0	0.00	10:37:30	0	1.04	15:40:30	0	0.00
17:21:45	0	0.00	10:37:45	0	1.04	15:40:45	0	0.00
17:22:00	0	0.00	10:38:00	0	1.04	15:41:00	0	0.00
17:22:15	0	0.00	10:38:15	0	1.04	15:41:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:22:30	0	0.00	10:38:30	0	1.04	15:41:30	0	0.00
17:22:45	0	0.00	10:38:45	0	1.04	15:41:45	25	1.04
17:23:00	0	0.00	10:39:00	5	1.25	15:42:00	0	1.04
17:23:15	0	0.00	10:39:15	0	1.25	15:42:15	0	1.04
17:23:30	0	0.00	10:39:30	0	1.25	15:42:30	0	1.04
17:23:45	0	0.00	10:39:45	0	1.25	15:42:45	0	1.04
17:24:00	0	0.00	10:40:00	10	1.67	15:43:00	0	1.04
17:24:15	0	0.00	10:40:15	0	1.67	15:43:15	0	1.04
17:24:30	0	0.00	10:40:30	0	1.67	15:43:30	0	1.04
17:24:45	0	0.00	10:40:45	0	1.67	15:43:45	0	1.04
17:25:00	0	0.00	10:41:00	10	1.46	15:44:00	0	1.04
17:25:15	0	0.00	10:41:15	0	1.46	15:44:15	0	1.04
17:25:30	0	0.00	10:41:30	0	1.46	15:44:30	0	1.04
17:25:45	0	0.00	10:41:45	0	1.46	15:44:45	0	1.04
17:26:00	0	0.00	10:42:00	0	1.46	15:45:00	0	1.04
17:26:15	0	0.00	10:42:15	0	1.04	15:45:15	0	1.04
17:26:30	0	0.00	10:42:30	0	1.04	15:45:30	0	1.04
17:26:45	0	0.00	10:42:45	0	1.04	15:45:45	0	1.04
17:27:00	0	0.00	10:43:00	0	1.04	15:46:00	0	1.04
17:27:15	0	0.00	10:43:15	10	1.46	15:46:15	0	1.04
17:27:30	0	0.00	10:43:30	0	1.46	15:46:30	0	1.04
17:27:45	0	0.00	10:43:45	0	1.46	15:46:45	0	1.04
17:28:00	0	0.00	10:44:00	0	1.46	15:47:00	0	1.04
17:28:15	0	0.00	10:44:15	0	1.46	15:47:15	0	1.04
17:28:30	0	0.00	10:44:30	0	1.46	15:47:30	0	1.04
17:28:45	0	0.00	10:44:45	0	1.46	15:47:45	0	0.00
17:29:00	0	0.00	10:45:00	0	1.25	15:48:00	0	0.00
17:29:15	0	0.00	10:45:15	0	1.25	15:48:15	0	0.00
17:29:30	0	0.00	10:45:30	15	1.88	15:48:30	0	0.00
17:29:45	0	0.00	10:45:45	0	1.88	15:48:45	0	0.00
17:30:00	0	0.00	10:46:00	0	1.46	15:49:00	0	0.00
17:30:15	0	0.00	10:46:15	0	1.46	15:49:15	0	0.00
17:30:30	0	0.00	10:46:30	0	1.46	15:49:30	0	0.00
17:30:45	0	0.00	10:46:45	0	1.46	15:49:45	0	0.00
17:31:00	0	0.00	10:47:00	0	1.04	15:50:00	0	0.00
17:31:15	0	0.00	10:47:15	0	1.04	15:50:15	0	0.00
17:31:30	0	0.00	10:47:30	0	1.04	15:50:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:31:45	0	0.00	10:47:45	0	1.04	15:50:45	0	0.00
17:32:00	0	0.00	10:48:00	0	1.04	15:51:00	0	0.00
17:32:15	0	0.00	10:48:15	0	1.04	15:51:15	0	0.00
17:32:30	0	0.00	10:48:30	0	1.04	15:51:30	0	0.00
17:32:45	0	0.00	10:48:45	0	1.04	15:51:45	0	0.00
17:33:00	0	0.00	10:49:00	0	1.04	15:52:00	0	0.00
17:33:15	0	0.00	10:49:15	0	0.63	15:52:15	0	0.00
17:33:30	0	0.00	10:49:30	0	0.63	15:52:30	0	0.00
17:33:45	0	0.00	10:49:45	0	0.63	15:52:45	0	0.00
17:34:00	0	0.00	10:50:00	15	1.25	15:53:00	0	0.00
17:34:15	0	0.00	10:50:15	0	1.25	15:53:15	0	0.00
17:34:30	0	0.00	10:50:30	0	1.25	15:53:30	0	0.00
17:34:45	0	0.00	10:50:45	0	1.25	15:53:45	0	0.00
17:35:00	0	0.00	10:51:00	0	1.25	15:54:00	0	0.00
17:35:15	0	0.00	10:51:15	10	1.67	15:54:15	0	0.00
17:35:30	0	0.00	10:51:30	0	1.04	15:54:30	0	0.00
17:35:45	0	0.00	10:51:45	0	1.04	15:54:45	0	0.00
17:36:00	0	0.00	10:52:00	0	1.04	15:55:00	0	0.00
17:36:15	0	0.00	10:52:15	0	1.04	15:55:15	0	0.00
17:36:30	0	0.00	10:52:30	0	1.04	15:55:30	0	0.00
17:36:45	0	0.00	10:52:45	0	1.04	15:55:45	0	0.00
17:37:00	0	0.00	10:53:00	0	1.04	15:56:00	0	0.00
17:37:15	0	0.00	10:53:15	0	1.04	15:56:15	0	0.00
17:37:30	0	0.00	10:53:30	0	1.04	15:56:30	0	0.00
17:37:45	0	0.00	10:53:45	0	1.04	15:56:45	0	0.00
17:38:00	0	0.00	10:54:00	0	1.04	15:57:00	0	0.00
17:38:15	0	0.00	10:54:15	0	1.04	15:57:15	0	0.00
17:38:30	0	0.00	10:54:30	0	1.04	15:57:30	0	0.00
17:38:45	0	0.00	10:54:45	0	1.04	15:57:45	0	0.00
17:39:00	0	0.00	10:55:00	0	1.04	15:58:00	0	0.00
17:39:15	0	0.00	10:55:15	0	1.04	15:58:15	0	0.00
17:39:30	0	0.00	10:55:30	0	1.04	15:58:30	0	0.00
17:39:45	0	0.00	10:55:45	0	1.04	15:58:45	0	0.00
17:40:00	0	0.00	10:56:00	0	0.42	15:59:00	0	0.00
17:40:15	0	0.00	10:56:15	0	0.42	15:59:15	0	0.00
17:40:30	0	0.00	10:56:30	0	0.42	15:59:30	0	0.00
17:40:45	0	0.00	10:56:45	0	0.42	15:59:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:41:00	0	0.00	10:57:00	0	0.42	16:00:00	0	0.00
17:41:15	0	0.00	10:57:15	0	0.00	16:00:15	0	0.00
17:41:30	0	0.00	10:57:30	0	0.00	16:00:30	0	0.00
17:41:45	0	0.00	10:57:45	0	0.00	16:00:45	0	0.00
17:42:00	0	0.00	10:58:00	0	0.00	16:01:00	0	0.00
17:42:15	0	0.00	10:58:15	0	0.00	16:01:15	0	0.00
17:42:30	0	0.00	10:58:30	0	0.00	16:01:30	0	0.00
17:42:45	0	0.00	10:58:45	0	0.00	16:01:45	0	0.00
17:43:00	0	0.00	10:59:00	0	0.00	16:02:00	0	0.00
17:43:15	0	0.00	10:59:15	0	0.00	16:02:15	0	0.00
17:43:30	0	0.00	10:59:30	0	0.00	16:02:30	0	0.00
17:43:45	0	0.00	10:59:45	0	0.00	16:02:45	0	0.00
17:44:00	0	0.00	11:00:00	0	0.00	16:03:00	0	0.00
17:44:15	0	0.00	11:00:15	0	0.00	16:03:15	0	0.00
17:44:30	0	0.00	11:00:30	0	0.00	16:03:30	0	0.00
17:44:45	0	0.00	11:00:45	0	0.00	16:03:45	0	0.00
17:45:00	0	0.00	11:01:00	0	0.00	16:04:00	0	0.00
17:45:15	0	0.00	11:01:15	0	0.00	16:04:15	0	0.00
17:45:30	0	0.00	11:01:30	0	0.00	16:04:30	0	0.00
17:45:45	0	0.00	11:01:45	0	0.00	16:04:45	0	0.00
17:46:00	0	0.00	11:02:00	0	0.00	16:05:00	0	0.00
17:46:15	0	0.00	11:02:15	0	0.00	16:05:15	0	0.00
17:46:30	0	0.00	11:02:30	0	0.00	16:05:30	0	0.00
17:46:45	0	0.00	11:02:45	0	0.00	16:05:45	0	0.00
17:47:00	0	0.00	11:03:00	0	0.00	16:06:00	0	0.00
17:47:15	0	0.00	11:03:15	0	0.00	16:06:15	0	0.00
17:47:30	0	0.00	11:03:30	0	0.00	16:06:30	0	0.00
17:47:45	0	0.00	11:03:45	0	0.00	16:06:45	0	0.00
17:48:00	0	0.00	11:04:00	0	0.00	16:07:00	0	0.00
17:48:15	0	0.00	11:04:15	0	0.00	16:07:15	0	0.00
17:48:30	0	0.00	11:04:30	0	0.00	16:07:30	0	0.00
17:48:45	0	0.00	11:04:45	0	0.00	16:07:45	0	0.00
17:49:00	0	0.00	11:05:00	0	0.00	16:08:00	0	0.00
17:49:15	0	0.00	11:05:15	0	0.00	16:08:15	0	0.00
17:49:30	0	0.00	11:05:30	0	0.00	16:08:30	0	0.00
17:49:45	0	0.00	11:05:45	0	0.00	16:08:45	0	0.00
17:50:00	0	0.00	11:06:00	0	0.00	16:09:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:50:15	0	0.00	11:06:15	0	0.00	16:09:15	0	0.00
17:50:30	0	0.00	11:06:30	0	0.00	16:09:30	0	0.00
17:50:45	0	0.00	11:06:45	0	0.00	16:09:45	0	0.00
17:51:00	0	0.00	11:07:00	0	0.00	16:10:00	0	0.00
17:51:15	0	0.00	11:07:15	0	0.00	16:10:15	0	0.00
17:51:30	0	0.00	11:07:30	0	0.00	16:10:30	0	0.00
17:51:45	0	0.00	11:07:45	0	0.00	16:10:45	0	0.00
17:52:00	0	0.00	11:08:00	0	0.00	16:11:00	0	0.00
17:52:15	0	0.00	11:08:15	0	0.00	16:11:15	0	0.00
17:52:30	0	0.00	11:08:30	0	0.00	16:11:30	0	0.00
17:52:45	0	0.00	11:08:45	0	0.00	16:11:45	0	0.00
17:53:00	0	0.00	11:09:00	0	0.00	16:12:00	0	0.00
17:53:15	0	0.00	11:09:15	0	0.00	16:12:15	0	0.00
17:53:30	0	0.00	11:09:30	0	0.00	16:12:30	0	0.00
17:53:45	0	0.00	11:09:45	0	0.00	16:12:45	0	0.00
17:54:00	0	0.00	11:10:00	0	0.00	16:13:00	0	0.00
17:54:15	0	0.00	11:10:15	0	0.00	16:13:15	0	0.00
17:54:30	0	0.00	11:10:30	0	0.00	16:13:30	0	0.00
17:54:45	0	0.00	11:10:45	0	0.00	16:13:45	0	0.00
17:55:00	0	0.00	11:11:00	0	0.00	16:14:00	0	0.00
17:55:15	0	0.00	11:11:15	0	0.00	16:14:15	0	0.00
17:55:30	0	0.00	11:11:30	0	0.00	16:14:30	0	0.00
17:55:45	0	0.00	11:11:45	0	0.00	16:14:45	0	0.00
17:56:00	0	0.00	11:12:00	0	0.00	16:15:00	0	0.00
17:56:15	0	0.00	11:12:15	0	0.00	16:15:15	0	0.00
17:56:30	0	0.00	11:12:30	0	0.00	16:15:30	0	0.00
17:56:45	0	0.00	11:12:45	0	0.00	16:15:45	0	0.00
17:57:00	0	0.00	11:13:00	0	0.00	16:16:00	0	0.00
17:57:15	0	0.00	11:13:15	0	0.00	16:16:15	0	0.00
17:57:30	0	0.00	11:13:30	0	0.00	16:16:30	0	0.00
17:57:45	0	0.00	11:13:45	0	0.00	16:16:45	0	0.00
17:58:00	0	0.00	11:14:00	0	0.00	16:17:00	0	0.00
17:58:15	0	0.00	11:14:15	0	0.00	16:17:15	0	0.00
17:58:30	0	0.00	11:14:30	0	0.00	16:17:30	0	0.00
17:58:45	0	0.00	11:14:45	0	0.00	16:17:45	0	0.00
17:59:00	0	0.00	11:15:00	0	0.00	16:18:00	0	0.00
17:59:15	0	0.00	11:15:15	0	0.00	16:18:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:59:30	0	0.00	11:15:30	0	0.00	16:18:30	0	0.00
17:59:45	0	0.00	11:15:45	0	0.00	16:18:45	0	0.00
18:00:00	0	0.00	11:16:00	0	0.00	16:19:00	0	0.00
18:00:15	0	0.00	11:16:15	0	0.00	16:19:15	0	0.00
18:00:30	0	0.00	11:16:30	0	0.00	16:19:30	0	0.00
18:00:45	0	0.00	11:16:45	0	0.00	16:19:45	0	0.00
18:01:00	0	0.00	11:17:00	0	0.00			
18:01:15	0	0.00	11:17:15	0	0.00			
18:01:30	0	0.00	11:17:30	0	0.00			
18:01:45	0	0.00	11:17:45	0	0.00			
18:02:00	0	0.00	11:18:00	0	0.00			
18:02:15	0	0.00	11:18:15	0	0.00			
18:02:30	0	0.00	11:18:30	0	0.00			
18:02:45	0	0.00	11:18:45	0	0.00			
18:03:00	0	0.00	11:19:00	0	0.00			
18:03:15	0	0.00	11:19:15	0	0.00			
18:03:30	0	0.00	11:19:30	0	0.00			
18:03:45	0	0.00	11:19:45	0	0.00			
18:04:00	0	0.00	11:20:00	0	0.00			
18:04:15	0	0.00	11:20:15	0	0.00			
18:04:30	0	0.00	11:20:30	0	0.00			
18:04:45	0	0.00	11:20:45	0	0.00			
18:05:00	0	0.00	11:21:00	0	0.00			
18:05:15	0	0.00						
18:05:30	0	0.00						
18:05:45	0	0.00						
18:06:00	0	0.00						
18:06:15	0	0.00						
18:06:30	0	0.00						
18:06:45	0	0.00						
18:07:00	0	0.00						
18:07:15	0	0.00						
18:07:30	0	0.00						
18:07:45	0	0.00						
18:08:00	0	0.00						
18:08:15	0	0.00						
18:08:30	0	0.00						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:08:45	0	0.00						
18:09:00	0	0.00						
18:09:15	0	0.00						
18:09:30	0	0.00						
18:09:45	0	0.00						
18:10:00	0	0.00						
18:10:15	0	0.00						
18:10:30	0	0.00						
18:10:45	0	0.00						
18:11:00	0	0.00						
18:11:15	0	0.00						
18:11:30	0	0.00						
18:11:45	0	0.00						
18:12:00	0	0.00						
18:12:15	0	0.00						
18:12:30	0	0.00						
18:12:45	0	0.00						
18:13:00	0	0.00						
18:13:15	0	0.00						
18:13:30	0	0.00						
18:13:45	0	0.00						
18:14:00	0	0.00						
18:14:15	0	0.00						
18:14:30	25	1.04						
18:14:45	0	1.04						
18:15:00	0	1.04						
18:15:15	0	1.04						
18:15:30	0	1.04						
18:15:45	0	1.04						
18:16:00	0	1.04						
18:16:15	0	1.04						
18:16:30	0	1.04						
18:16:45	0	1.04						
18:17:00	0	1.04						
18:17:15	0	1.04						
18:17:30	0	1.04						
18:17:45	0	1.04						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:18:00	0	1.04						
18:18:15	0	1.04						
18:18:30	0	1.04						
18:18:45	0	1.04						
18:19:00	0	1.04						
18:19:15	0	1.04						
18:19:30	0	1.04						
18:19:45	0	1.04						
18:20:00	0	1.04						
18:20:15	0	1.04						
18:20:30	0	0.00						
18:20:45	0	0.00						
18:21:00	0	0.00						
18:21:15	25	1.04						
18:21:30	5	1.25						
18:21:45	0	1.25						
18:22:00	0	1.25						
18:22:15	0	1.25						
18:22:30	0	1.25						
18:22:45	0	1.25						
18:23:00	0	1.25						
18:23:15	0	1.25						
18:23:30	0	1.25						
18:23:45	0	1.25						
18:24:00	0	1.25						
18:24:15	0	1.25						
18:24:30	0	1.25						
18:24:45	0	1.25						
18:25:00	0	1.25						
18:25:15	0	1.25						
18:25:30	0	1.25						
18:25:45	0	1.25						
18:26:00	0	1.25						
18:26:15	0	1.25						
18:26:30	0	1.25						
18:26:45	0	1.25						
18:27:00	0	1.25						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:27:15	0	0.21						
18:27:30	0	0.00						
18:27:45	0	0.00						
18:28:00	0	0.00						
18:28:15	0	0.00						
18:28:30	0	0.00						
18:28:45	0	0.00						
18:29:00	0	0.00						
18:29:15	0	0.00						
18:29:30	0	0.00						
18:29:45	0	0.00						
18:30:00	0	0.00						
18:30:15	0	0.00						
18:30:30	0	0.00						
18:30:45	0	0.00						
18:31:00	0	0.00						
18:31:15	0	0.00						
18:31:30	0	0.00						
18:31:45	0	0.00						
18:32:00	0	0.00						
18:32:15	0	0.00						
18:32:30	0	0.00						
18:32:45	0	0.00						
18:33:00	0	0.00						
18:33:15	15	0.63						
18:33:30	0	0.63						
18:33:45	0	0.63						
18:34:00	0	0.63						
18:34:15	0	0.63						
18:34:30	20	1.46						
18:34:45	0	1.46						
18:35:00	0	1.46						
18:35:15	0	1.46						
18:35:30	30	2.71						
18:35:45	0	2.71						
18:36:00	0	2.71						
18:36:15	0	2.71						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:36:30	0	2.71						
18:36:45	0	2.71						
18:37:00	0	2.71						
18:37:15	0	2.71						
18:37:30	0	2.71						
18:37:45	0	2.71						
18:38:00	0	2.71						
18:38:15	0	2.71						
18:38:30	0	2.71						
18:38:45	0	2.71						
18:39:00	0	2.71						
18:39:15	0	2.08						
18:39:30	0	2.08						
18:39:45	30	3.33						
18:40:00	0	3.33						
18:40:15	0	3.33						
18:40:30	0	2.50						
18:40:45	0	2.50						
18:41:00	0	2.50						
18:41:15	0	2.50						
18:41:30	0	1.25						
18:41:45	0	1.25						
18:42:00	0	1.25						
18:42:15	0	1.25						
18:42:30	0	1.25						
18:42:45	0	1.25						
18:43:00	0	1.25						
18:43:15	0	1.25						
18:43:30	0	1.25						
18:43:45	0	1.25						
18:44:00	0	1.25						
18:44:15	0	1.25						
18:44:30	0	1.25						
18:44:45	0	1.25						
18:45:00	0	1.25						
18:45:15	0	1.25						
18:45:30	25	2.29						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:45:45	5	1.25						
18:46:00	0	1.25						
18:46:15	0	1.25						
18:46:30	0	1.25						
18:46:45	0	1.25						
18:47:00	0	1.25						
18:47:15	0	1.25						
18:47:30	0	1.25						
18:47:45	0	1.25						
18:48:00	0	1.25						
18:48:15	0	1.25						
18:48:30	0	1.25						
18:48:45	0	1.25						
18:49:00	0	1.25						
18:49:15	0	1.25						
18:49:30	0	1.25						
18:49:45	0	1.25						
18:50:00	0	1.25						
18:50:15	0	1.25						
18:50:30	0	1.25						
18:50:45	0	1.25						
18:51:00	0	1.25						
18:51:15	0	1.25						
18:51:30	0	0.21						
18:51:45	0	0.00						
18:52:00	0	0.00						
18:52:15	0	0.00						
18:52:30	0	0.00						
18:52:45	0	0.00						
18:53:00	0	0.00						
18:53:15	0	0.00						
18:53:30	0	0.00						
18:53:45	0	0.00						
18:54:00	0	0.00						
18:54:15	0	0.00						
18:54:30	0	0.00						
18:54:45	0	0.00						

TEST 1			TEST 2			TEST 3		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:55:00	0	0.00						
18:55:15	0	0.00						
18:55:30	0	0.00						
18:55:45	0	0.00						
18:56:00	0	0.00						
18:56:15	0	0.00						
18:56:30	0	0.00						
18:56:45	0	0.00						
18:57:00	0	0.00						
18:57:15	0	0.00						
18:57:30	0	0.00						
18:57:45	0	0.00						
18:58:00	0	0.00						
18:58:15	0	0.00						
18:58:30	0	0.00						
18:58:45	0	0.00						
18:59:00	Too dark for VE's							

SECTION 3

SAMPLING AND ANALYTICAL PROCEDURES

The sampling and analytical procedures used in this test program conform to **EPA** Reference Methods 1-4, 5D, and 9, as published in the Federal Register.

LOCATION OF MEASUREMENT SITES

EPA Method **1,** "Sample Velocity Traverses for Stationary Sources," was used to select representative measurement sites. Sample locations are shown in Section 4.

STACK GAS VOLUMETRIC FLOW RATE

EPA Method **2,** "Determination of Stack Gas Velocity and Volumetric Flow Rates," was used at each location to determine stack gas volumetric flow rates. Standard and Type "S" pitot tubes, meeting the **EPA** specifications, and an inclined manometer were used to measure velocity pressures. **A** calibrated Type " **K** thermocouple, attached directly to the pitot tube, was used to measure stack gas temperature. The stack gas velocity was calculated from the average square root of the stack gas velocity pressure, average stack gas temperature, stack gas molecular weight, and absolute static pressure. The volumetric flow rate is the product of velocity and stack cross-sectional area.

STACK GAS DRY MOLECULAR WEIGHT

EPA Reference Method **3A,** "Gas Analysis for the Determination of Dry Molecular Weight," was used to determine stack gas dry molecular weight. Bag samples were collected and analyzed for each measurement run using Orsat combustion analyzers.

STACK GAS MOISTURE CONTENT

EPA Reference Method **4,** "Determination of Moisture Content in Stack Gases," was used to determine outlet stack gas moisture content. This method was conducted as

part of each total particulate matter measurement run. The initial and final contents of all impingers are determined gravimetrically.

PARTICULATE MATTER

EPA Reference Method 5D, "Determination of Particulate Matter Emissions from Positive Pressure Fabric Filter Baghouses," was used to determine the total particulate matter concentration and mass emission rates. The sample train consisted of a stainless steel nozzle, glass probe and filter holder, glass fiber filter, and a series of impingers followed by a vacuum pump, dry gas meter, and calibrated orifice. The particulate sample was withdrawn isokinetically and collected on the filter. Thermocouples were used to monitor temperatures of the stack gas and impinger exit gas. A schematic of the sample train is shown in Figure 3.1.

VISIBLE EMISSION OBSERVATIONS

EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources," was used to determine opacity from the baghouse exhaust as well as from the melt shop roof monitor. Observations were conducted simultaneously with the particulate sampling runs.

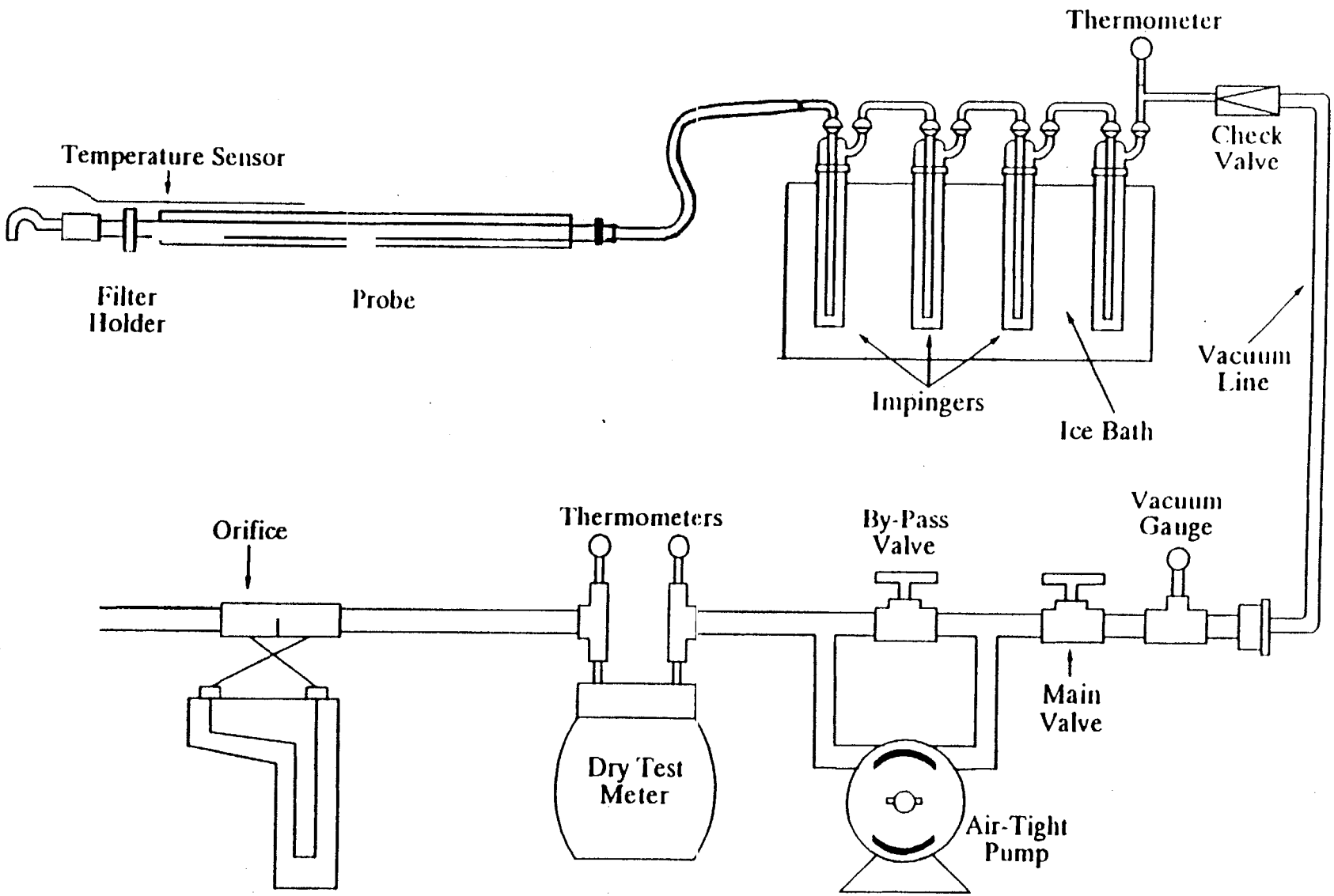


Figure 3.1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

SECTION 4

PROCESS DESCRIPTION/SAMPLING LOCATIONS

Kentucky Electric Steel, Inc. owns and operates and electric arc furnace (EAF) melt shop and bar steel rolling facility located on U.S. Route 60 approximately 12 miles west of Ashland, Kentucky.

Kentucky Electric Steel, Inc. has two EAFs for steel production. Scrap steel is delivered by rail and truck and is stored in open piles. Scrap steel and various fluxing agents are weighed and charged to the EAF. The charge material is melted by electrical current flowing among three graphite electrodes lowered into the furnace. Slag (melt impurities) is separated from the product metal and is transferred to slag storage and processing using an endloader. Molten metal is tapped from the EAF into preheated transfer ladles by tilting the furnace, allowing the metal to flow through a hole in the side.

Molten metal is then transferred to the ladle metallurgy furnace (LMF). Raw materials (bulk alloys and fluxes) are added to the molten metal in the LMF to further purify it. The metal is heated during refining using electrodes. After metal treatment is complete, the transfer ladle is removed from the LMF and carried to the continuous casting machine.

At the continuous caster, molten metal is poured into a preheated tundish and then flows into molds and is allowed to partially cool. The strips of metal are cut into pieces at the caster to form billets. Cooled billets are later reheated in a reheat furnace and rolled to the desired dimensions. The bar steel is descaled using water sprays and the ends of the bars are sheared off. The final product is bound into bundles and stored until shipped offsite.

Emissions from the EAFs and LMF are vented to the Harsell Positive Pressure Baghouse. A general process flow diagram is provided in Figure 4-1.

Throughout the test program the following process data was collected:

A) Charge weights and materials and tap weights and materials (these are provided on the heat sheets in Appendix **C).**

B) Heat times, including start and stop times, log off process operation including periods of no operation during testing (These are

provided on the heat sheets and production field data in Appendices C and B respectively.)

C) Pressure Drop across the baghouse. (Shown in Table 2.3 and in Appendix B) A visual inspection of the baghouse was made prior to testing.

D) Fan/duct damper position (shown in Table 4.1).

E) Fan amperes (shown in Table 4.2).

Fan and damper data was monitored continuously electronically and manually every 15 minutes. Ranges of the data are provided in Table 4.1. The fan amperes are summarized in Table 4.2.

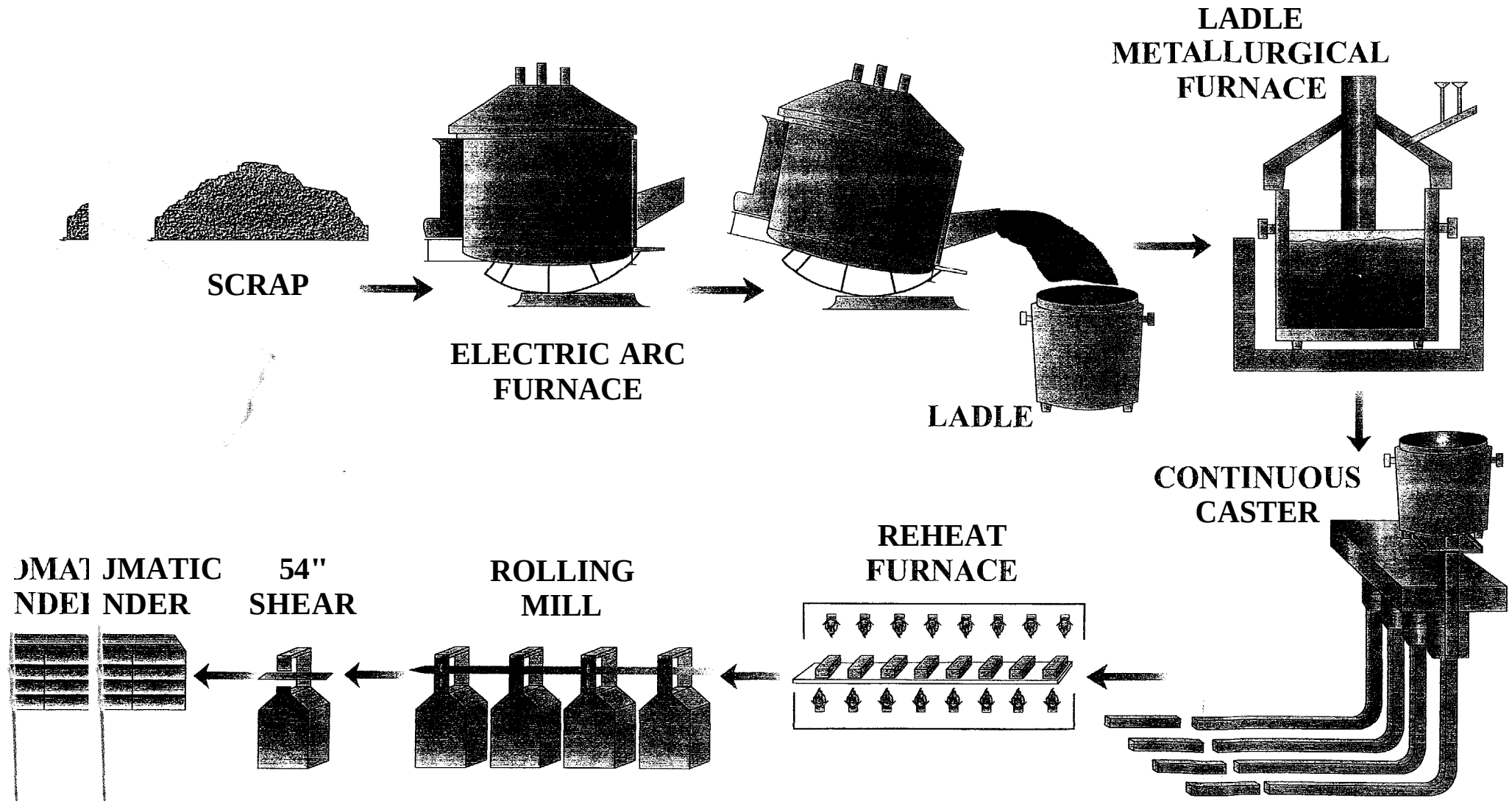


Figure 4.1. Process Flow Diagram

KES, Inc.	EQ
Process Flow Diagram: Plant Process Flow	
Drawing No: 0	
Revision: 0	
Date: 1/9/98	

TABLE 4.1. DAMPER POSITIONS (PERCENT OPEN DURING ACTIVITY)

Damper	Melting A&B	Charging A Melting B	Charging B Melting A	Tapping A Melting B	Tapping B Melting A	Charging A Charging B
West Blower	100	100	100	100	100	100
East Blower	100	100	100	100	100	100
A Furnace Plenum	0-100	0	0	0	0	0
B Furnace Plenum	0-100	0-100	0	0	0	0
A Water Cooled	100	100	100	0	100	0-100
B Water Cooled	100	100	0	100	0	0-100
Furnace Blower Inlet	100	99-100	100	100	100	62-78
Furnace Blower Outlet	100	99-100	100	100	100	62-79

TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE

DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
TEST 1								
5/11/00	1:50:00 pm	5.18	105.61	191.26	182.86	110.83	484.95	Charge
5/11/00	1:55:00 pm	5.25	107.18	192.25	183.88	102.22	478.36	Charge
5/11/00	2:00:00 pm	5.34	106.86	192.88	184.60	108.64	486.13	Charge
5/11/00	2:05:00 pm	5.42	109.05	192.61	184.13	109.03	485.78	Charge
5/11/00	2:10:00 pm	5.55	108.11	192.77	184.45	114.93	492.15	Charge
5/11/00	2:15:00 pm	5.57	110.93	190.26	182.00	110.00	482.25	Charge
5/11/00	2:20:00 pm	5.56	113.74	187.18	178.96	98.54	464.68	Charge
5/11/00	2:25:00 pm	5.68	118.74	189.67	181.19	102.56	473.41	Charge
5/11/00	2:30:00 pm	5.72	118.11	189.57	181.30	100.84	471.72	Charge
5/11/00	2:35:00 pm	5.98	116.55	189.80	181.28	103.36	474.44	Charge
5/11/00	2:40:00 pm	5.79	123.74	186.04	177.65	95.06	458.75	Tap
5/11/00	2:45:00 pm	5.95	122.18	188.28	179.99	103.20	471.47	Charge
5/11/00	2:50:00 pm	5.72	125.92	186.09	177.62	107.68	471.39	Charge
5/11/00	2:55:00 pm	5.58	130.92	186.23	177.87	113.44	477.54	Charge
5/11/00	3:00:00 pm	5.58	131.24	186.85	178.80	100.66	466.32	Melt
5/11/00	3:05:00 pm	5.53	121.24	188.97	181.03	104.24	474.25	Melt
5111100	3:10:00 pm	5.67	120.30	188.85	180.85	104.44	474.14	Tap
5/11/00	3:15:00 pm	5.40	124.99	187.43	179.53	100.01	466.98	Tap
5/11/00	3:20:00 pm	5.11	129.67	187.82	179.80	101.75	469.37	Charge
5/11/00	3:25:00 pm	5.23	128.74	186.99	179.28	115.40	481.67	Charge
5/11/00	3:30:00 pm	5.25	129.05	188.68	180.67	119.89	489.23	Charge
5/11/00	3:35:00 pm	5.19	131.55	188.67	180.68	119.47	488.82	Charge
5/11/00	3:40:00 pm	5.27	128.42	187.31	179.55	117.74	484.61	Charge
5/11/00	3:45:00 pm	5.31	129.05	185.60	177.84	117.19	480.63	Melt
5/11/00	3:50:00 pm	5.37	127.49	185.26	177.81	106.01	469.08	Melt
5/11/00	3:55:00 pm	5.47	121.86	188.41	180.55	111.56	480.52	Melt
5/11/00	4:00:00 pm	5.40	121.86	186.83	178.71	106.62	472.17	Melt
5/11/00	4:05:00 pm	5.60	139.99	185.83	177.70	102.44	465.97	Melt
5/11/00	4:10:00 pm	5.71	126.86	186.80	178.58	104.67	470.04	Melt
5/11/00	4:15:00 pm	5.80	124.99	187.43	179.26	106.16	472.85	Melt
5/11/00	4:20:00 pm	5.90	123.74	186.24	177.98	102.40	466.63	Charge
5/11/00	4:25:00 pm	5.81	133.11	185.66	177.22	98.16	461.04	Charge
5/11/00	4:30:00 pm	5.74	141.55	186.16	178.07	96.92	461.15	Melt
5/11/00	4:35:00 pm	6.06	127.49	187.27	178.92	106.01	472.20	Melt
5/11/00	4:40:00 pm	5.99	123.74	185.43	177.31	104.76	467.49	Melt
5/11/00	4:45:00 pm	5.98	122.49	185.59	177.50	103.66	466.75	Tap

TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE								
DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/11/00	4:50:00 pm	5.63	124.99	186.08	178.12	100.93	465.13	Charge
5/11/00	4:55:00 pm	5.63	135.30	185.14	176.86	107.49	469.48	Charge
5/11/00	5:00:00 pm	5.56	143.42	183.01	174.74	108.04	465.79	Charge
5/11/00	5:05:00 pm	5.66	144.67	182.62	174.43	106.29	463.35	Charge
5/11/00	5:10:00 pm	5.60	141.55	183.78	175.71	112.58	472.07	Charge
5/11/00	5:15:00 pm	5.47	138.42	185.67	177.72	116.59	479.99	Charge
5/11/00	5:20:00 pm	5.45	129.05	187.51	179.48	119.62	486.60	Charge
5/11/00	5:25:00 pm	5.15	127.17	188.01	180.29	116.02	484.32	Melt
5/11/00	5:30:00 pm	5.16	122.18	188.71	181.27	107.98	477.96	Melt
5/11/00	5:35:00 pm	5.20	119.99	189.59	181.73	106.69	478.02	Melt
5/11/00	5:40:00 pm	5.26	119.05	190.03	182.18	108.86	481.08	Melt
5/11/00	5:45:00 pm	5.30	117.80	189.98	182.11	107.08	479.18	Charge
5/11/00	5:50:00 pm	5.33	120.61	190.06	181.90	116.29	488.25	Charge
5/11/00	5:55:00 pm	5.44	122.80	189.02	181.06	111.80	481.88	Melt
5/11/00	6:00:00 pm	5.42	134.05	186.34	178.07	107.04	471.44	Melt
5/11/00	6:05:00 pm	5.59	127.80	187.92	179.83	105.48	473.23	Melt
5/11/00	6:10:00 pm	5.61	123.74	186.67	178.55	103.74	468.95	Melt
5/11/00	6:15:00 pm	5.66	125.92	185.65	177.55	101.66	464.87	Melt
5/11/00	6:20:00 pm	5.75	142.17	183.17	174.96	91.86	449.98	Melt
5/11/00	6:25:00 pm	6.18	132.17	186.10	177.77	104.77	468.64	Melt
5/11/00	6:30:00 pm	5.94	128.42	185.77	177.51	104.12	467.41	Tap
5/11/00	6:35:00 pm	5.72	133.42	187.82	179.58	104.74	472.14	Tap
5/11/00	6:40:00 pm	5.62	130.61	188.37	180.10	109.18	477.66	Melt
5/11/00	6:45:00 pm	5.51	132.17	187.76	179.55	117.02	484.34	Charge
5/11/00	6:50:00 pm	5.56	133.11	186.92	178.73	119.72	485.37	Charge
5/11/00	6:55:00 pm	5.18	138.11	186.96	178.97	118.18	484.11	Melt
5/11/00	7:00:00 pm	5.13	127.80	191.11	183.23	116.67	491.01	Melt
5/11/00	7:05:00 pm	3.57	119.68	191.09	183.28	118.52	492.89	Melt
5/11/00	7:10:00 pm	5.11	116.24	191.10	183.28	118.67	493.05	Melt
5/11/00	7:15:00 pm	5.22	118.43	187.44	179.67	112.43	479.55	Melt
5/11/00	7:20:00 pm	5.30	120.93	188.02	180.29	108.55	476.87	Melt
5/11/00	7:25:00 pm	5.40	120.30	188.79	180.98	109.84	479.61	Melt
5/11/00	7:30:00 pm	5.46	118.43	189.95	182.06	114.58	486.58	Tap
5/11/00	7:35:00 pm	5.41	120.61	189.14	181.04	118.52	488.71	Melt
				Ampere Range Test 1		450.0 - 493.1		
TEST 2								
5/12/00	7:15:00 am	6.01	122.49	184.39	176.08	108.11	468.58	Melt

TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE								
BATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/12/00	7:20:00 am	5.93	123.43	182.48	174.69	102.06	459.23	Melt
5/12/00	7:25:00 am	5.93	127.17	183.56	175.60	102.78	461.95	Melt
5/12/00	7:30:00 am	5.83	125.92	184.12	176.12	104.52	464.76	Melt
5/12/00	7:35:00 am	5.75	126.55	184.77	176.59	103.55	464.91	Tap
5/12/00	7:40:00 am	5.51	129.36	182.62	174.52	107.87	465.00	Charge
5/12/00	7:45:00 am	5.56	137.80	182.80	174.61	111.13	468.54	Charge
5/12/00	7:50:00 am	5.54	145.92	180.58	172.27	113.15	466.00	Charge
5/12/00	7:55:00 am	5.64	145.92	182.07	173.82	109.02	464.91	Charge
5/12/00	8:00:00 am	5.54	142.17	182.68	174.65	107.36	464.69	Melt
5/12/00	8:05:00 am	5.42	135.30	183.34	175.59	101.44	460.37	Melt
5/12/00	8:10:00 am	5.49	134.05	184.70	176.75	100.91	462.36	Melt
5/12/00	8:15:00 am	5.51	131.24	187.42	179.35	104.49	471.26	Melt
5/12/00	8:20:00 am	5.60	130.92	188.65	180.68	101.73	471.06	Melt
5/12/00	8:25:00 am	5.41	129.67	186.62	178.78	101.53	466.93	Melt
5/12/00	8:30:00 am	5.34	127.80	187.04	179.26	103.55	469.85	Charge
5/12/00	8:35:00 am	5.17	133.74	185.84	177.98	103.54	467.36	Charge
5/12/00	8:40:00 am	5.05	139.36	183.50	175.98	90.88	450.35	Melt
5/12/00	8:45:00 am	5.22	133.11	185.59	177.92	99.66	463.16	Tap
5/12/00	8:50:00 am	5.30	129.36	186.58	178.60	110.92	476.11	Tap
5/12/00	8:55:00 am	5.30	133.74	185.07	177.01	108.79	470.87	Charge
5/12/00	9:00:00 am	5.34	142.49	183.30	175.17	112.74	471.22	Charge
5/12/00	9:05:00 am	5.44	138.11	184.50	176.44	106.16	467.09	Melt
5/12/00	9:10:00 am	5.45	138.11	183.98	175.96	89.91	449.84	Melt
5/12/00	9:15:00 am	5.56	143.74	184.61	176.58	88.04	449.23	Melt
5/12/00	9:20:00 am	5.65	149.36	183.85	175.71	88.16	447.72	Melt
5/12/00	9:25:00 am	5.75	154.36	181.69	173.52	83.69	438.90	Melt
5/12/00	9:30:00 am	5.94	158.73	181.59	173.28	82.96	437.83	Melt
5/12/00	9:35:00 am	5.85	158.42	180.08	171.74	85.14	436.96	Charge
5/12/00	9:40:00 am	5.71	173.42	178.99	170.68	82.48	432.15	Melt
5/12/00	9:45:00 am	5.55	179.04	178.82	170.69	81.55	431.06	Charge
5/12/00	9:50:00 am	5.58	179.67	179.32	171.17	84.21	434.69	Melt
5/12/00	9:55:00 am	5.68	173.42	180.81	172.64	85.84	439.28	Tap
5/12/00	10:00:00 am	5.93	159.36	180.85	172.58	89.26	442.68	Tap
5/12/00	10:05:00 am	6.15	150.61	181.85	173.61	94.68	450.13	Charge
5/12/00	10:10:00 am	5.80	152.48	178.76	170.50	98.88	448.14	Charge
5/12/00	10:15:00 am	5.67	161.86	179.92	171.75	99.68	451.35	Melt
5/12/00	10:20:00 am	5.66	147.17	182.66	174.85	94.22	451.73	Melt

TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE

DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/12/00	10:25:00 am	5.62	139.05	184.06	176.18	98.75	458.99	Melt
5/12/00	10:30:00 am	5.70	137.80	183.37	175.34	100.02	458.72	
5/12/00	10:35:00 am	5.58	142.49	182.80	174.83	105.90	463.54	[illegible]
5/12/00	10:40:00 am	5.53	142.17	184.73	176.54	112.82	474.09	Charge
5/12/00	10:45:00 am	5.54	140.92	185.22	177.00	117.72	479.94	Charge
5/12/00	10:50:00 am	5.54	138.11	185.74	177.76	118.92	482.42	Charge
5/12/00	10:55:00 am	5.37	134.99	185.01	177.23	118.87	481.11	Charge
5/12/00	11:00:00 am	4.10	139.36	184.16	176.62	116.86	477.63	Charge
5/12/00	11:05:00 am	4.96	136.86	182.18	174.61	112.10	468.89	Charge
5/12/00	11:10:00 am	5.01	147.17	181.42	173.99	88.53	443.94	Melt
5/12/00	11:15:00 am	5.25	143.11	183.39	175.88	97.84	457.11	Melt
5/12/00	11:20:00 am	5.31	141.24	184.73	176.81	91.53	453.07	Melt
				Ampere Range Test 3		431.1 - 482.4		
TEST 3								
5/12/00	12:15:00 pm	5.75	141.86	182.26	174.32	96.45	453.03	Melt
5/12/00	12:20:00 pm	5.58	140.61	181.30	173.39	94.98	449.68	Melt
5/12/00	12:25:00 pm	5.67	145.92	181.37	173.17	94.76	449.29	Melt
5/12/00	12:30:00 pm	5.69	138.74	182.55	174.60	102.35	459.50	Melt
5/12/00	12:35:00 pm	5.69	146.55	179.73	171.72	92.39	443.84	Charge
5/12/00	12:40:00 pm	5.41	154.05	179.63	171.59	91.08	442.31	Melt
5/12/00	12:45:00 pm	5.38	156.23	178.94	170.99	87.19	437.13	Melt
5/12/00	12:50:00 pm	5.55	149.05	181.39	173.38	105.59	460.36	Tap
5/12/00	12:55:00 pm	5.47	150.30	180.21	172.03	105.26	457.49	Charge
5/12/00	1:00:00 pm	5.37	167.48	177.73	169.61	103.05	450.39	Charge
5/12/00	1:05:00 pm	5.31	149.67	181.85	174.09	93.37	449.31	Melt
5/12/00	1:10:00 pm	5.38	142.49	182.55	174.92	97.73	455.20	Melt
5/12/00	1:15:00 pm	5.44	143.11	183.52	175.58	98.84	457.94	Melt
5/12/00	1:20:00 pm	5.48	142.80	179.21	171.04	92.13	442.38	Melt
5/12/00	1:25:00 pm	5.53	143.42	181.98	173.89	94.20	450.07	Tap
5/12/00	1:30:00 pm	5.60	142.80	185.83	177.74	105.50	469.07	Tap
5/12/00	1:35:00 pm	5.58	144.05	184.46	176.18	114.02	474.67	Charge
5/12/00	1:40:00 pm	5.60	152.17	179.87	171.87	112.09	463.83	Charge
5/12/00	1:45:00 pm	5.65	155.92	180.41	172.08	108.83	461.32	Charge
5/12/00	1:50:00 pm	5.73	156.86	182.60	174.23	120.38	477.21	Charge
5/12/00	1:55:00 pm	5.72	150.61	182.46	174.34	118.11	474.91	Charge
5/12/00	2:00:00 pm	5.76	151.23	181.12	172.91	105.79	459.82	Charge
5/12/00	2:05:00 pm	6.10	150.30	180.47	172.16	106.30	458.93	Charge

TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE								
DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/12/00	2:10:00 pm	5.94	152.17	180.64	172.20	109.75	462.59	Charge
5/12/00	2:15:00 pm	5.88	155.92	179.96	171.57	105.78	457.31	Charge
5/12/00	2:20:00 pm	5.58	167.48	177.04	168.82	86.96	432.81	Melt
5/12/00	2:25:00 pm	5.78	159.05	179.85	171.82	85.72	437.38	Melt
5/12/00	2:30:00 pm	5.66	152.17	181.16	173.02	90.60	444.78	Melt
5/12/00	2:35:00 pm	5.55	150.30	181.06	172.99	89.98	444.03	Tap
5/12/00	2:40:00 pm	5.59	149.36	181.21	173.07	91.86	446.14	Tap
5/12/00	2:45:00 pm	5.65	148.74	180.42	172.33	99.97	452.72	Charge
5/12/00	2:50:00 pm	5.70	161.23	178.84	170.48	104.23	453.55	Charge
5/12/00	2:55:00 pm	5.52	163.11	179.57	171.24	104.59	455.41	Charge
5/12/00	3:00:00 pm	5.49	157.48	180.41	171.99	107.59	459.99	Charge
5/12/00	3:05:00 pm	5.28	161.86	180.53	172.55	103.84	456.93	Melt
5/12/00	3:10:00 pm	5.34	148.42	182.78	174.95	98.14	455.88	Melt
5/12/00	3:15:00 pm	5.43	144.05	182.86	175.06	101.12	459.04	Melt
5/12/00	3:20:00 pm	5.39	149.36	180.02	172.17	91.81	444.00	Melt
5/12/00	3:25:00 pm	5.46	155.61	178.57	170.81	85.76	435.14	Melt
5/12/00	3:30:00 pm	5.59	159.98	179.49	171.56	87.08	438.13	Melt
5/12/00	3:35:00 pm	5.77	149.05	180.78	172.95	97.74	451.47	Melt
5/12/00	3:40:00 pm	5.75	147.80	179.93	171.93	93.32	445.18	Charge
5/12/00	3:45:00 pm	6.02	151.23	178.71	170.62	97.24	446.56	Tap
5/12/00	3:50:00 pm	6.03	148.74	179.11	170.79	89.64	439.54	Charge
5/12/00	3:55:00 pm	5.69	152.17	178.54	170.27	92.06	440.87	Charge
5/12/00	4:00:00 pm	5.71	163.11	177.17	168.79	101.94	447.89	Charge
5/12/00	4:05:00 pm	5.80	155.61	180.95	172.68	114.82	468.45	Charge
5/12/00	4:10:00 pm	5.71	150.61	178.69	170.47	107.68	456.83	Charge
5/12/00	4:15:00 pm	5.72	167.80	177.92	169.57	108.94	456.43	Charge
5/12/00	4:20:00 pm	3.34	162.17	178.96	170.58	98.81	448.35	Charge
				Ampere Range Test 3		**432.8 - 477.2**		
				Ampere Range All Tests		**431.1 - 493.0**		

SECTION 5

SAMPLING LOCATIONS

The baghouse inlet sampling location was in a section of rectangular duct approximately 193 inches downstream of a bend and 165 inches upstream of a reduction in duct size. The duct dimensions were 131.5 inches by 144 inches. Six ports on the top of the duct were sampled with a total of 48 sampling points, eight per port. Figure 5.1 is a schematic of the baghouse inlet sampling location.

Figure 5.2 is a schematic of the baghouse outlet compartments sampled for the particulate emissions. A sampling matrix of four by two points, eight points per compartment, was used for sampling purposes.

A total of **32** points within four compartments was sampled at a minimum during each test run. Of the twenty compartments present, a total of **13** compartments were sampled during the course of the sampling program

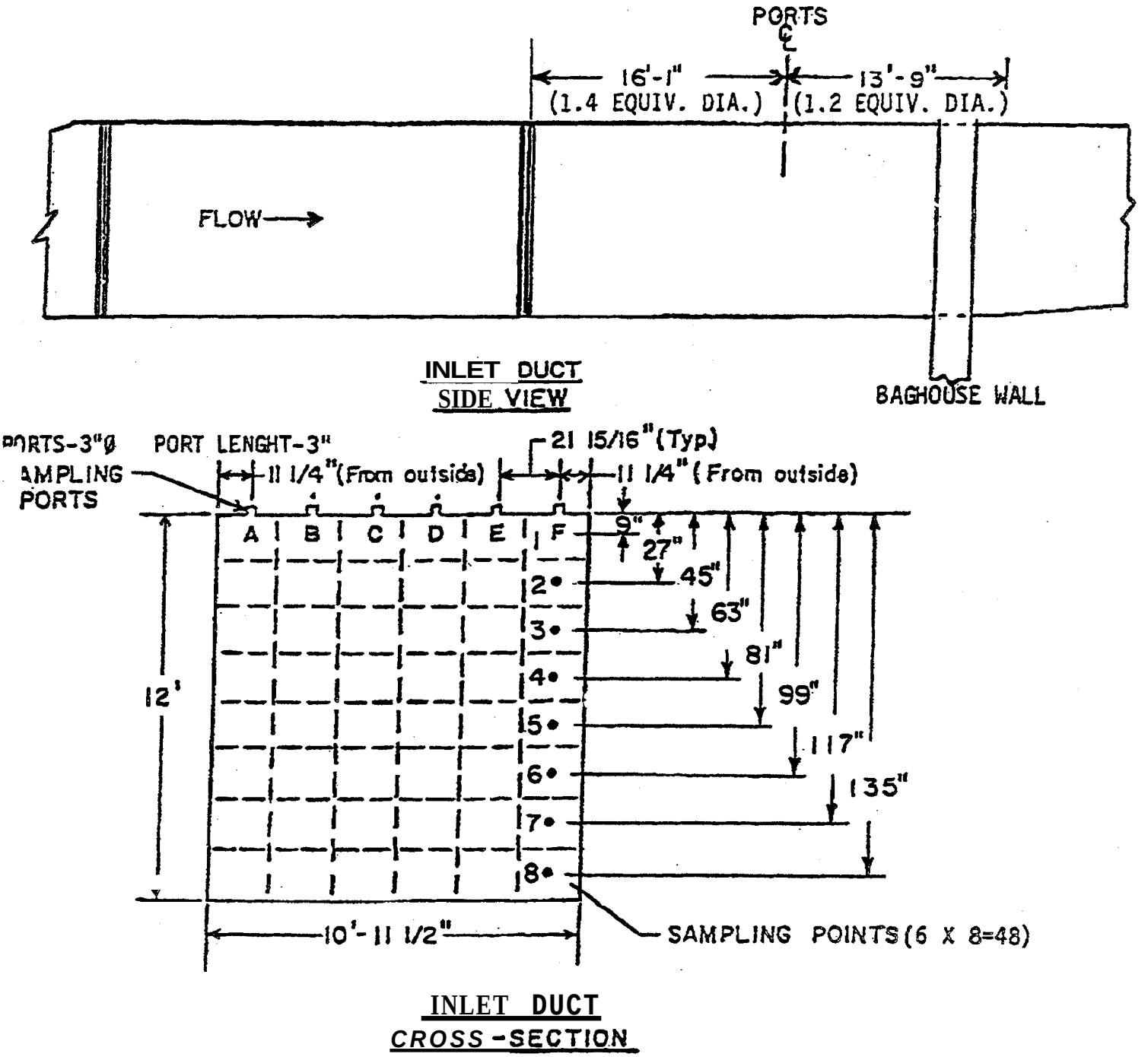
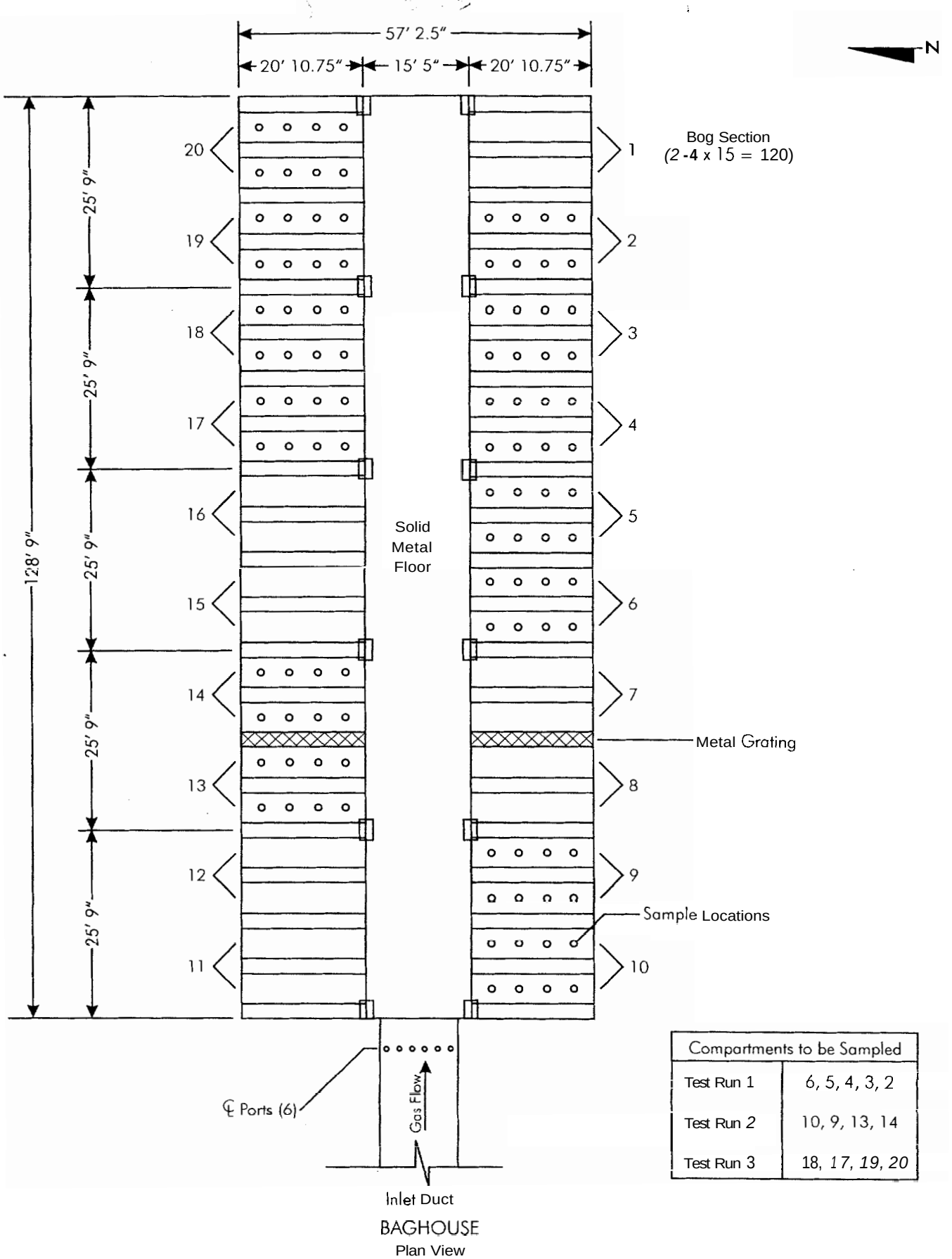


Figure 5.1. Baghouse Inlet Sampling Location



Baghouse Outlet Sampling Locations

Figure 5-2. Schematic of Baghouse Outlet

SECTION 6

QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling quality assurance for this project included the use of: calibrated source sampling equipment; reference test methods; and traceability protocols for the recording and calculation of data. The analytical quality assurance includes use of validated analytical procedures; calibration of equipment; and analysis of control samples and blanks. The calibration and quality control procedures used for this test program are described in the following subsection:

CALIBRATION PROCEDURES AND FREQUENCY

All manual stack gas sampling equipment is calibrated before the test program in accordance with the procedures outlined in the ***Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III***, EPA-600/4-72-027B. Summarized in Table 5.1 are the stack gas sampling equipment calibrations which are performed in preparation for this project. The meter boxes are re-calibrated after the test.

Listed in Table 6.2 are the additional calibration checks which are performed on the sampling equipment onsite, just prior to the testing, to ensure that equipment was not damaged during transport.

TABLE 6.1

FIELD EQUIPMENT CALIBRATION SUMMARY*

Equipment	Calibrated against	Allowable error
Method 5 meter box	Reference test meter	Y ±0.02 Y ▲H@ ±0.20 ▲H@ post-test Y ±0.05 Y
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	±1.5%
Impinger (or condenser thermometer)	ASTM-3F	±2°F
Dry gas meter thermometer	ASTM-3F	±5°F
Probe nozzles	Caliper	±0.004 in.
Barometer	NBS traceable barometer	±0.1 in.Hg

*As recommended in the *Quality Assurance Handbook for Air PollutionMeasurement Systems: Volume 111. Stationary Source-Specific Methods*. EPA-600/4-77-027b, August 1977.

TABLE 6.2

FIELD CHECKS OF SAMPLING EQUIPMENT

Equipment	Checked against	Allowable difference
Pitot tube	Inspection	No visible damage
Thermocouples	ASTM 2F or 3F	±1.5%
Probe nozzles	Caliper	±0.004 in.

Appendix A

Visible Emission Field Data

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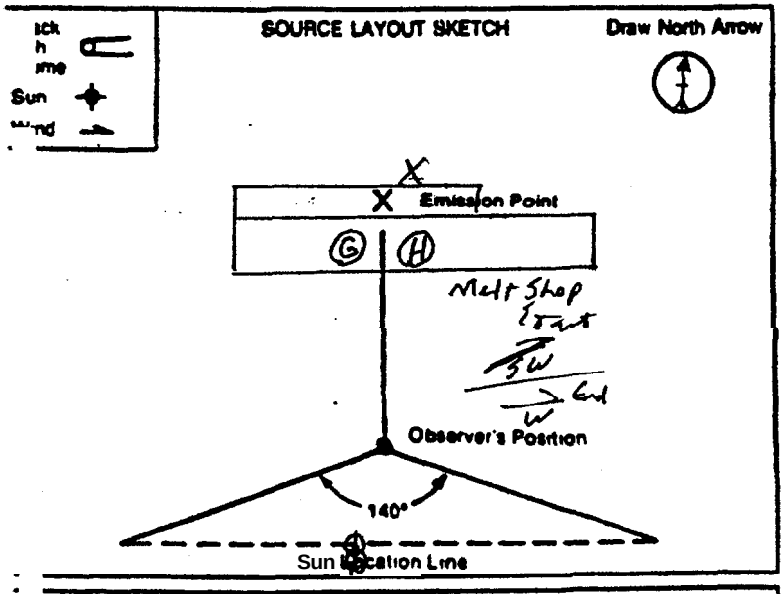
VISIBLE EMISSION OBSERVATION FORM

No. 1 of 12

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle of Melt shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start ~~[illegible]~~ BD Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' over the roof monitor End
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 MPH End ✓
WIND DIRECTION	Start Southwest End West
AMBIENT TEMP	Start 80 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION

1st Helper -

Helper -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1359	1429

SEC / MIN	0	15	30	45	COMMENTS
1359	0	0	0	0	Melt shop
2	5	5	5	5	
3	5	0	0	0	
4	0	0	0	0	
5	0	0	0	0	25/24 = 1.04%
6 1404	0	0	0	0	
1405	0	~~0~~ 10	~~0~~ 10	~~0~~ 5	Should have been on
8	5 ~~0~~	5 ~~0~~	0 ~~0~~	0	baghouse VES.
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	35/24 = 1.46%
12 1410	0	0	0	0	
13 1411	0	0	0	0	
14	0	0	0	0	
15	0	0	5	5	
16	5	5	5	10	
17	10	5	5	5	75/24 = 3.13%
18 1416	5	5	5	0	
19 1417	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	5	40/24 = 1.67%
23	5	10	10	5	
24 1423	5	0	0	0	
25 1424	0	5	5	5	
26	5	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	~~20/24 = 0.83%~~ 20/24 = 0.83%
30 1429	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

CONTINUED ON VEO FORM NUMBER 0 3 ~~0~~ 2

Privileged and Confidential - Prepared at the Request of Legal Council

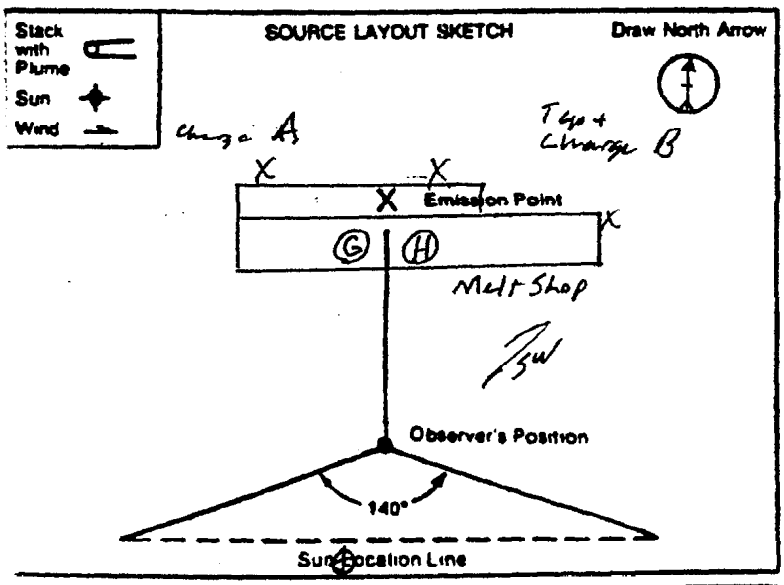
VISIBLE EMISSION OBSERVATION FORM

No. 2 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle, East + West End of Melt Shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lefrong End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End Baghouse + Trees
BACKGROUND COLOR	Start Green End Brown + Green
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 mph End ✓
WIND DIRECTION	Start Southwest End ✓
AMBIENT TEMP	Start 80° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1429	1459

MIN \ SEC	0	15	30	45	COMMENTS
1429	0	0	0	0	Melt Shop
2	0	0	0	0	
3	0	5	10	10	Charge A
4	10	5	5	0	
5	0	0	0	0	45/24 = 1.88%
6 1434	0	0	0	0	
7 1435	0	5	5	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	Tap B
11	0	0	0	0	15/24 = 0.63%
12 1440	0	0	0	5	
13 1441	5	5	10	10	
14	5	5	5	0	
15	0	10	10	15	
16	15	15	15	10	Charge B
17	10	15	15	15	265/24 = 11.04%
18 1446	15	20	20	20	
19 1447	20	15	15	15	
20	10	10	5	5	
21	5	5	10	15	
22	10	10	10	15	
23	15	10	5	5	260/24 = 10.83
24 1452	5	10	15	20	
25 1453	15	10	10	5	
26	5	5	5	5	
27	5	0	0	0	
28	0	0	0	0	
29	0	0	0	0	65/24 = 2.71%
30 1458	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

Melter -

CONTINUED ON VEO FORM NUMBER 0 3 0 2

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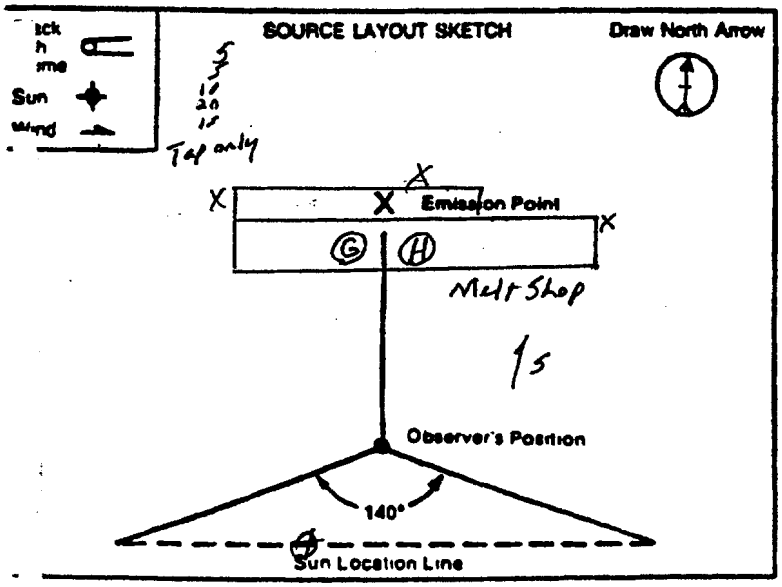
VISIBLE EMISSION OBSERVATION FORM

No. 3 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Same
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Loping End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Baghouse + Trees End ✓
BACKGROUND COLOR	Start Brown/Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 80 End 85°
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1459	1529

SEC / MIN	0	15	30	45	COMMENTS
1 1459	0	0	0	10	Meltshop
2	10	5	5	5	
3	5	0	0	0	
4	0	0	0	0	
5	0	0	0	0	30/24 = 1.25%
6 1504	0	0	0	0	
7 1505	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	5	5	5	
11	5	0	0	0	25/24 = 1.04%
12 1510	0	0	0	5	Tap A
13 1511	5	10	20	15	
14	15	15	10	10	
15	15	15	15	15	
16	10	5	5	5	
17	5	0	0	0	210/24 = 8.75%
18 1516	0	0	10	10	
19 1517	5	5	5	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	15/24 = 0.63%
24 1522	0	0	0	0	
25 1523	0	0	0	0	
26	0	10	10	5	
27	5	5	5	10	
28	10	10	5	5	
29	5	0	0	0	85/24 = 3.54%
30 1528	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Bromfield
OBSERVER'S SIGNATURE	Bryan Bromfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

Welder -

CONTINUED ON VEO FORM NUMBER 0 4 0 3

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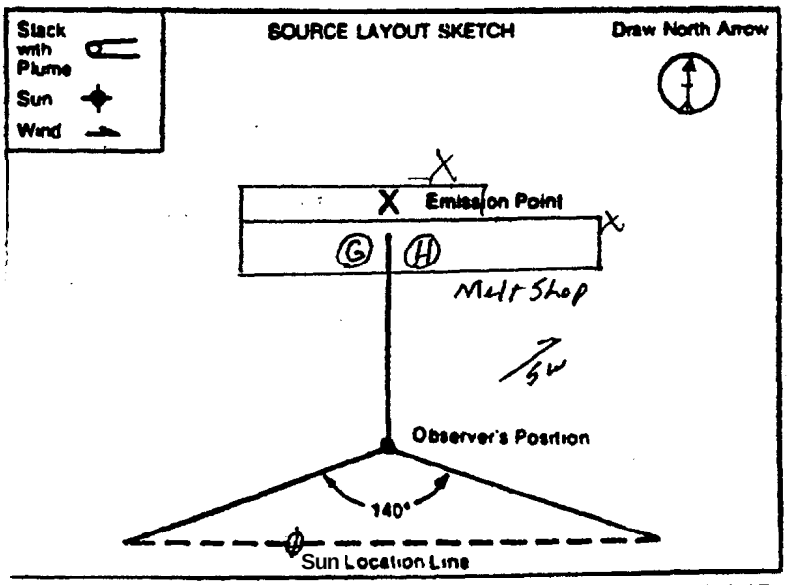
VISIBLE EMISSION OBSERVATION FOR

No. 4 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle + East end of Melt shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start ~~Same~~ End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85° End
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5-11-00	1529	1559

SEC / MIN	0	15	30	45	COMMENTS
1 1529	0	0	0	0	Melt shop
2	0	0	0	0	
3	0	0	5	10	
4	10	5	5	5	
5	0	0	0	0	
6 1534	0	0	0	0	40/24 = 1.67%
7 1535	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	5	5	5	0.83%
12 1540	5	0	0	0	
13 1541	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	0/24 = 0%
18 1546	0	0	0	0	
19 1547	0	0	0	0	
20	/	/	/	/	Could not read due to
21	/	/	/	/	LMF Emissions
22	/	0	0	0	
23	0	0	5	5	25/24 = 1.04%
24 1552	5	5	5	0	
25 1553	0	0	0	10	
26	15	10	25	70	~~Dust~~ Front end
27	75	80	70	65	Loader at Caster
28	75	90	85	80	
29	70	50	50	50	1225/24 = 51.04%
30 1559	60	60	70	65	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	0 5 0 4

ADDITIONAL INFORMATION

1st Helper -

Melter -

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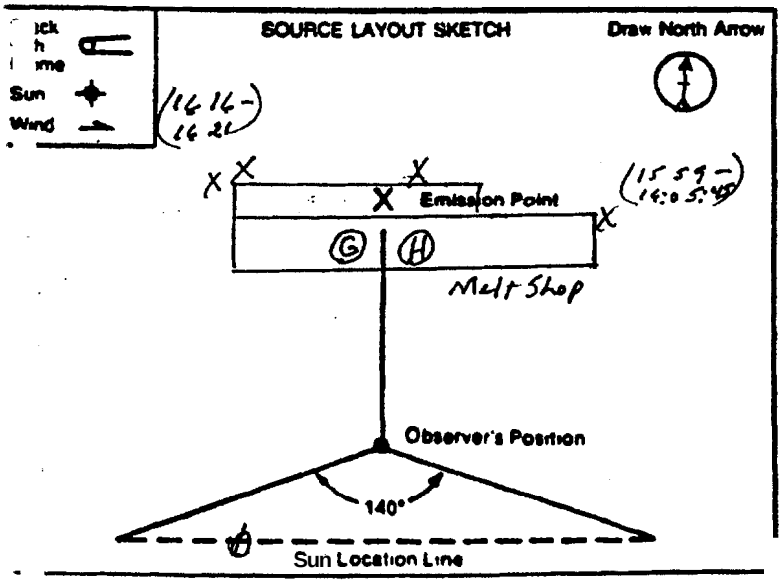
VISIBLE EMISSION OBSERVATION FORM

No. 5 of 12

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	East, West + middle of Melt shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Loaring End ✓
EMISSION COLOR	Start white End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End Scattered + Hazy
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1559	1629

SEC / MIN	0	15	30	45	COMMENTS
1559	65	65	60	50	Melt shop
2	40	35	25	20	
3	20	15	15	15	
4	15	10	10	5	
5	5	5	10	15	550/24 = 22.92%
6 1604	15	15	15	5	
7 1605	5	5	5	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	15/24 = 0.63
12 1610	0	0	0	0	
13 1611	0	0	0	0	
14	0	10	5	5	
15	5	5	0	0	
16	0	0	0	0	
17	0	0	0	0	55/24 = 2.29%
18 1616	0	5	10	10	
19 1617	5	5	5	0	
20	0	0	10	20	
21	10	5	5	0	
22	0	0	0	0	
23	0	0	0	0	75/24 = 3.13
24 1622	0	0	5	5	
25 1623	10	10	5	5	
26	0	0	5	5	
27	5	5	5	0	
28	0	0	0	0	
29	0	0	0	0	2.29% = 55/24
30 1628	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Bromfield
OBSERVER'S SIGNATURE	Bryan Bromfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

Filter -

CONTINUED ON VEO FORM NUMBER 0 6 0 5

Privileged and Confidential - Prepared at the Request of Legal Council

VISIBLE EMISSION OBSERVATION FOR

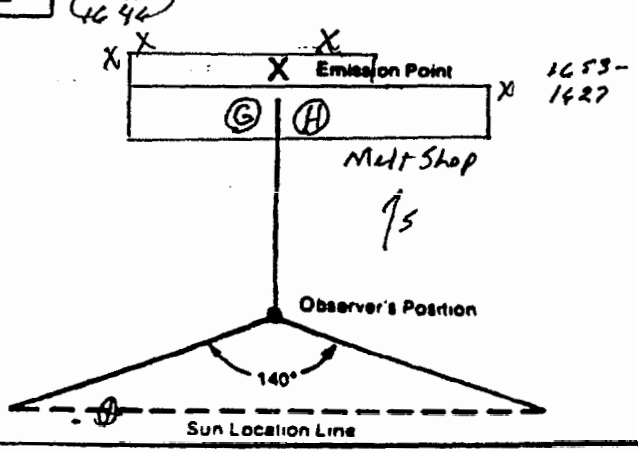
No. 6 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Same
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lo Fray End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Sky End ✓
SKY CONDITIONS	Start Scattered Clouds End ✓
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1629	~~1658~~ 1659

MIN \ SEC	0	15	30	45	COMMENTS
1 1629	0	0	0	0	Melt Shop
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1634	0	0	0	0	
7 1635	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	5	
11	5	5	0	0	15/24 = 0.63%
12 1640	0	0	0	0	
13 1641	0	0	0	0	
14	0	0	0	0	
15	0	0	5	10	~~Tap B BB~~ Tap B
16	5	5	10	15	
17	15	15	15	10	150/24 = 6.25%
18 1646	10	10	10	15	~~Tap B BB~~
19 1647	20	20	15	15	
20	15	15	15	15	
21	20	20	20	15	
22	15	10	10	10	
23	10	5	5	5	280/24 = 11.67%
24 1652	5	0	0	0	
25 1653	5	15	15	10	
26	10	5	5	5	
27	5	5	0	0	
28	0	0	0	0	
29	0	0	0	0	95/24 = 3.96%
30 1658	0	5	5	5	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	07

ADDITIONAL INFORMATION

1st Helper -

Melter -

Privileged and Confidential - Prepared at the Request of Legal Council

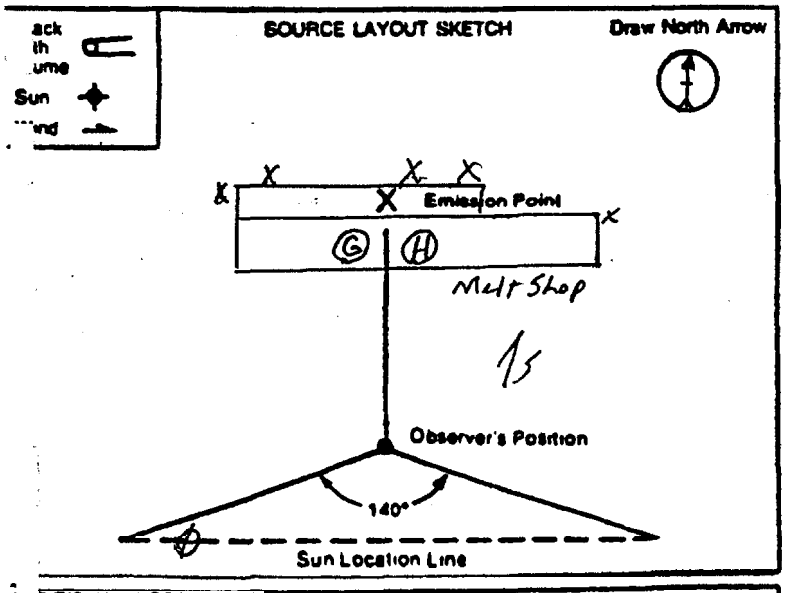
VISIBLE EMISSION OBSERVATION FORM

No. 2 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103_0340_0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Same
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered + hazy End ✓
WIND SPEED	Start 1-5 End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1659	1729

MIN \ SEC	0	15	30	45	COMMENTS
1 1659	5	5	5	5	Melt Shop
2	5	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	25/24 = 1.04%
6 1704	0	0	0	0	
7 1705	0	10	10	15	
8	15	10	5	5	
9	5	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12 1710	0	0	0	0	75/24 = 3.13%
13 1711	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	40/24 = 1.67%
18 1716	0	10	15	15	Charge B
19 1717	10	10	10	10	
20	5	5	5	5	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	60/24 = 2.50%
24 1722	0	0	0	0	
25 1723	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	0/24 = 0%
30 1728	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	[signature]
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

Shelter -

CONTINUED ON VEO FORM NUMBER 0 8

Privileged and Confidential - Prepared at the Request of Legal Council

VISIBLE EMISSION OBSERVATION FORM

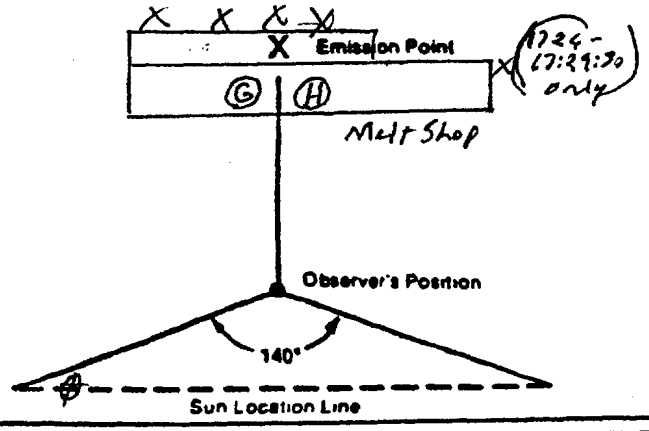
No. 8 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Same
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Water End ✓
EMISSION COLOR	Start Lt Gray End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered Clouds End Broken
WIND SPEED	Start 1-5 End 1-10 MPH
WIND DIRECTION	Start South End SE
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1729	1859

SEC / MIN	0	15	30	45	COMMENTS
1 1729	0	0	0	0	Melt shop
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1734	0	0	0	0	
7 1735	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1740	0	0	0	0	
13 1741	0	0	0	0	
14	0	0	5	15	Charge B
15	15	10	35	50	
16	40	40	30	20	
17	20	15	10	10	345/24 = 14.38%
18 1746	5	5	10	10	
19 1747	10	10	15	15	
20	10	5	5	5	
21	5	0	0	0	
22	0	0	0	10	
23	20	35	30	25	245/24 = 10.21%
24 1752	15	15	10	5	
25 1753	5	5	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	5	10	10	
29	5	5	0	0	45/24 = 1.88%
30 1758	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

Melter -

CONTINUED ON VEO FORM NUMBER 09

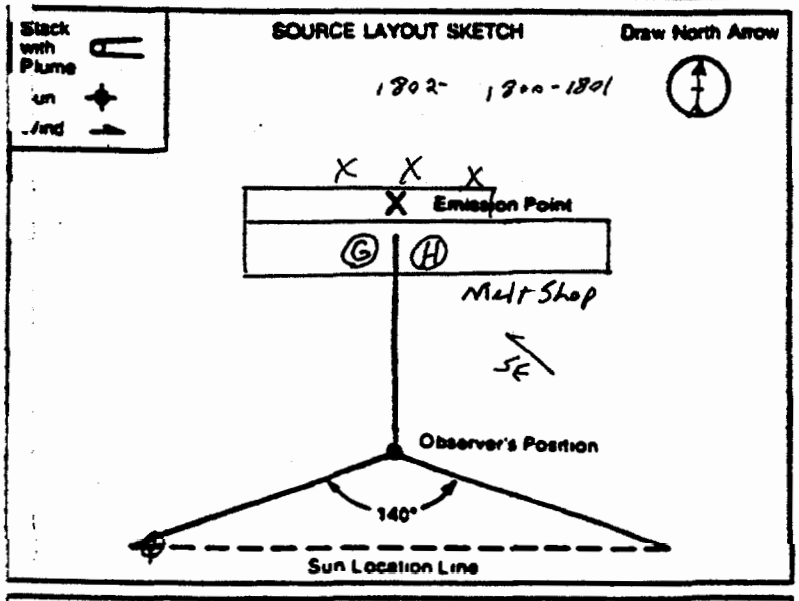
SIBLE EMISSION OBSERVATION FORI

No. 9 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle of Melt Shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End ✓
WIND SPEED	Start 1-10 mph End ✓
WIND DIRECTION	Start Southeast End SE
AMBIENT TEMP	Start 85° End 80°
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

St Helpers -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1759	

SEC / MIN	0	15	30	45	COMMENTS
1 1759	0	0	0	0	Melt Shop
2	0	10	10	5	
3	5	5	0	0	
4	0	0	0	10	
5	20	20	20	15	175/24 = 7.29%
6 1804	15	15	15	10	
7 1805	10	5	5	5	
8	5	0	0	0	
9	0	5	5	10	
10	10	10	5	5	
11	5	5	5	0	135/24 = 5.63%
12 1810	0	15	15	10	
13 1811	10	15	15	15	
14	20	20	15	15	
15	15	10	10	15	
16	15	15	10	10	
17	10	10	5	5	270/24 = 11.25%
18 1816	5	5	5	0	
19 1817	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1822	0	0	0	0	
25 1823	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1832	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

CONTINUED ON VEO FORM NUMBER

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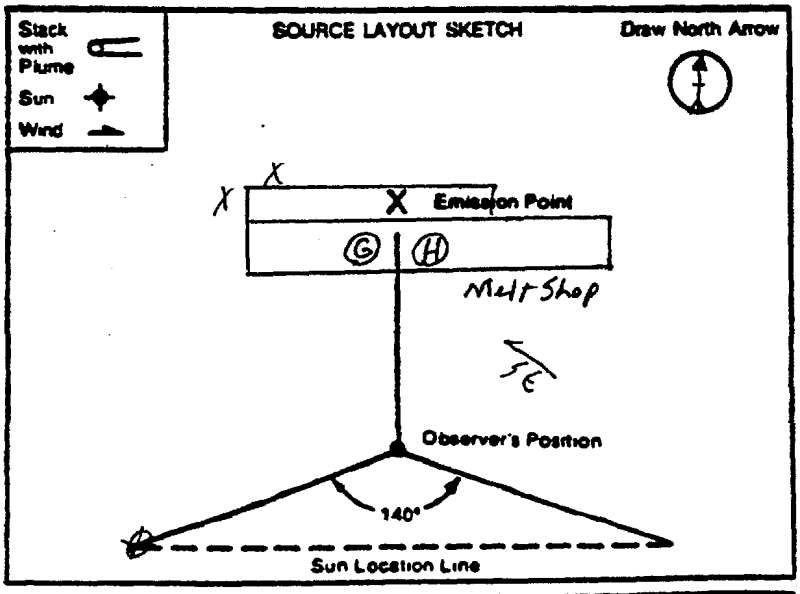
VISIBLE EMISSION OBSERVATION FO

No. 10 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	West end of Melt shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End ✓
WIND SPEED	Start 1-10 mph End ✓
WIND DIRECTION	Start SE End ✓
AMBIENT TEMP	Start 80° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION

1st Helper -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1829	1859

SEC / MIN	0	15	30	45	COMMENTS
1829	0	0	10	15	Tap A Melt shop
2	15	10	10	5	
3	5	5	5	5	
4	5	10	10	15	
5	25	20	15	15	255/24 = 10.63%
6 1834	10	10	15	20	
7 1835	25	25	20	15	
8	15	10	5	5	
9	5	5	5	0	
10	0	0	0	0	
11	0	0	0	0	135/24 = 5.63%
12 1840	0	0	0	0	
13 1841	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1846	0	0	0	0	
19 1847	0	0	0	0	
20	0	0	10	15	
21	10	10	5	5	
22	5	0	0	5	
23	5	10	10	5	105/24 = 4.38%
24 1852	5	5	0	0	
25 1853	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1858	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

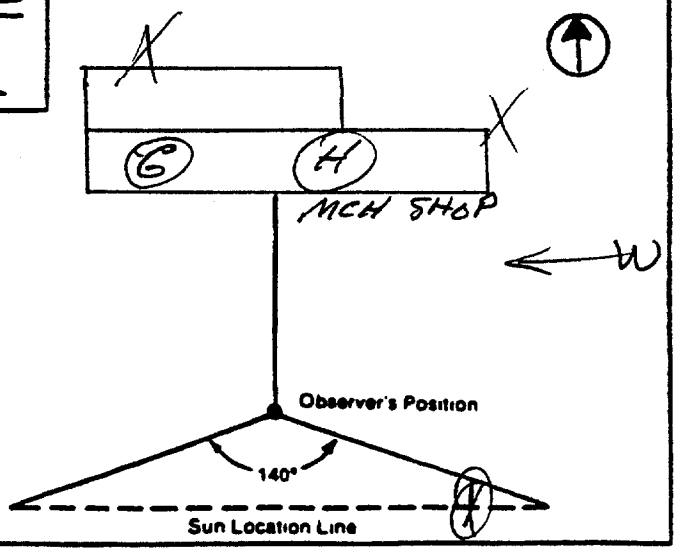
No. 1 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	~~Melt~~ Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coating End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Green Brown End ✓
SKY CONDITIONS	Start Overcast End
WIND SPEED	Start 4-6 mph End ✓
WIND DIRECTION	Start W From End
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	10	TAP A
17	0	0	0	10	
18	10	5	5	0	avg 30/24 = 1.25%
19	0	0	0	0	end TAP
20	0	0	0	0	
21	0	10	0	0	change A
22	0	5	5	0	
23	5	5	0	0	
24	5	0	0	0	avg 25/24 = 1.04%
25	0	10	5	5	
26	0	10	5	5	
27	5	5	5	0	
28	0	0	0	0	
29	0	0	10	15	Change B avg 7/8
30	25	35	35	35	end Change B 8:15

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

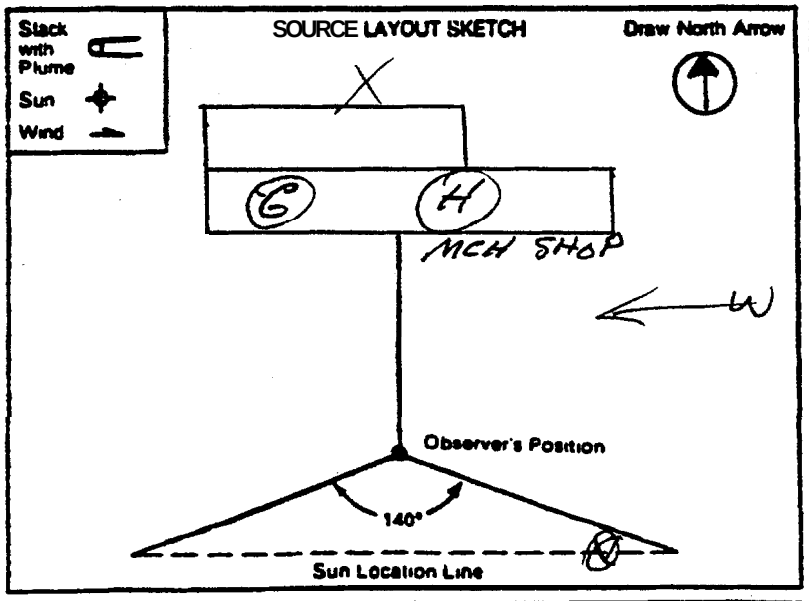
ADDITIONAL INFORMATION
Lot Helper - Jim Hall Woody Hill
Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

No. 2 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On' Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 60' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above mouth of End
DESCRIBE PLUME BACKGROUND	Start BAG House/TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6 mph End ✓
WIND DIRECTION	Start W FROM End
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION
1st Helper - Jim Hall Woody Hall
Melter - Bruce Moore

OBSERVATION DATE	START TIME	END TIME
5/12/08	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	35	40	35	35	
2	30	30	30	25	
3	25	20	20	15	
4	15	10	20	25	
5	20	5	5	5	
6	5	5	0	0	avg 455/24 = 18.96
7	0	30	30	40	
8	35	25	20	20	
9	10	0	0	0	
10	10	10	10	10	end charge A
11	10	0	0	0	
12	0	0	0	15	avg 275/24 = 11.46
13	15	10	0	0	
14	0	15	10	10	
15	10	5	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 75/24 = 3.13%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 0/24 = 0%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/08
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

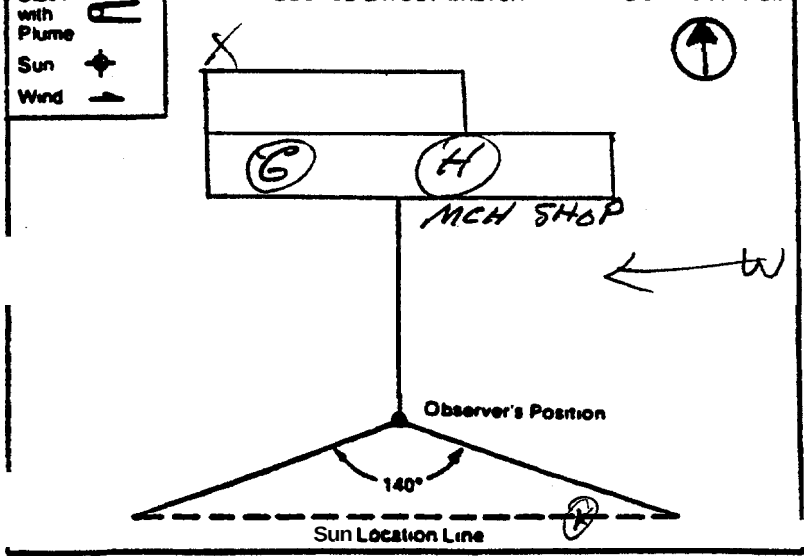
No. 3 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coffing End —
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Green/Brown End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6 mph End ✓
WIND DIRECTION	Start W From End ✓
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	10	25	30	Charge A
17	25	25	10	40	end charge
18	30	25	20	15	avg 245/24 = 10.21%
19	5	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 5/24 = 0.21%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hill

Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

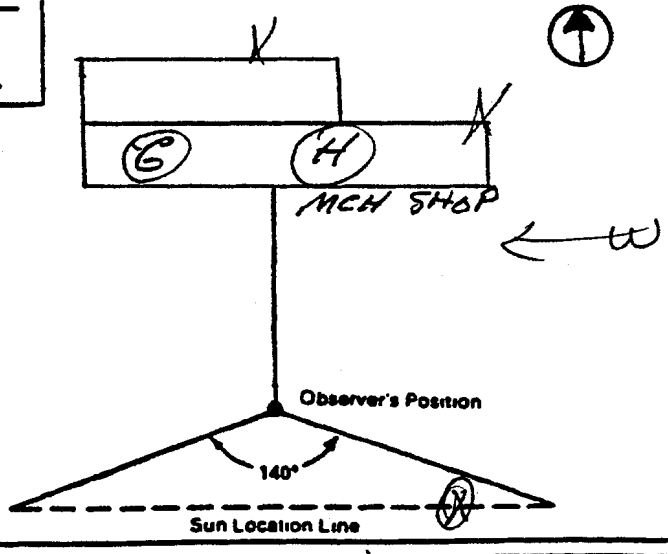
No. 4 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Green Brown End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 6-8 mph End ✓
WIND DIRECTION	Start W From End
AMBIENT TEMP	Start 72 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	15	15	15	20	tap B
2	15	15	20	20	
3	20	20	25	30	end tap B
4	25	25	30	25	
5	25	25	25	20	~~charge B~~
6	15	10	10	5	avg 470/24 = 19.58%
7	0	0	0	10	charge A
8	0	10	10	5	
9	0	0	0	0	end charge A
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 35/24 = 1.46%
13	0	0	0	10	charge B
14	0	0	0	0	
15	10	15	15	0	end charge B
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 40/24 = 1.67%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	10	0	0	0	
23	0	0	0	10	
24	0	0	0	0	avg 20/24 = 0.83%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0[illegible]
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper – [illegible]

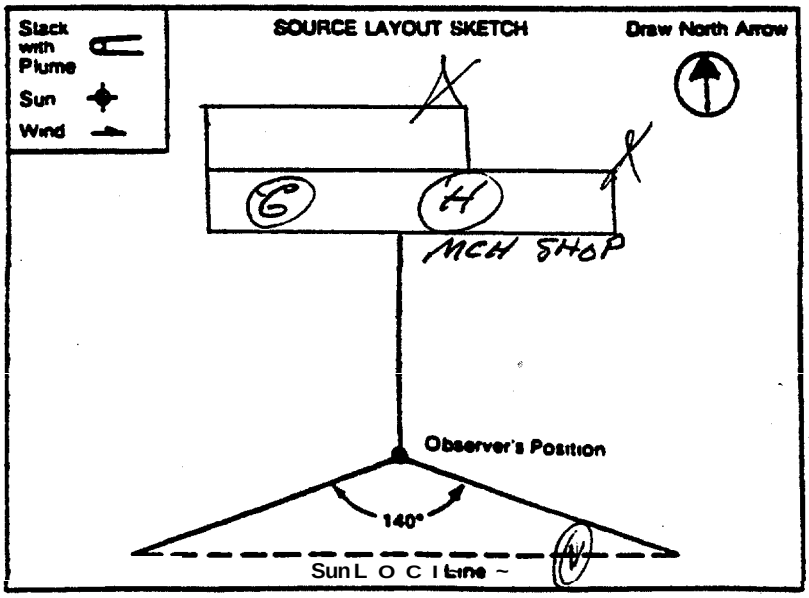
Melter – [illegible]

VISIBLE EMISSION OBSERVATION FORM

No. 5 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Green/Brown End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 6-8 mph End ✓
WIND DIRECTION	Start W End ✓
AMBIENT TEMP	Start 72 End
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	10	10	
11	10	10	10	5	
12	0	0	0	0	avg 55/24 = 2.29%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	10	10	15	charging B avg 15/24 = 6.[illegible]
18	25	30	30	40	end charge
19	45	45	35	40	
20	40	30	25	20	
21	20	15	15	15	
22	15	10	10	5	
23	0	0	0	0	
24	5	5	5	10	avg 410/24 = 17.08%
25	15	15	15	20	
26	25	25	25	20	
27	10	10	5	0	
28	10	10	10	5	
29	0	0	5	5	
30	0	0	10	0	avg 240/24 = 10.0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0[illegible]
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hall

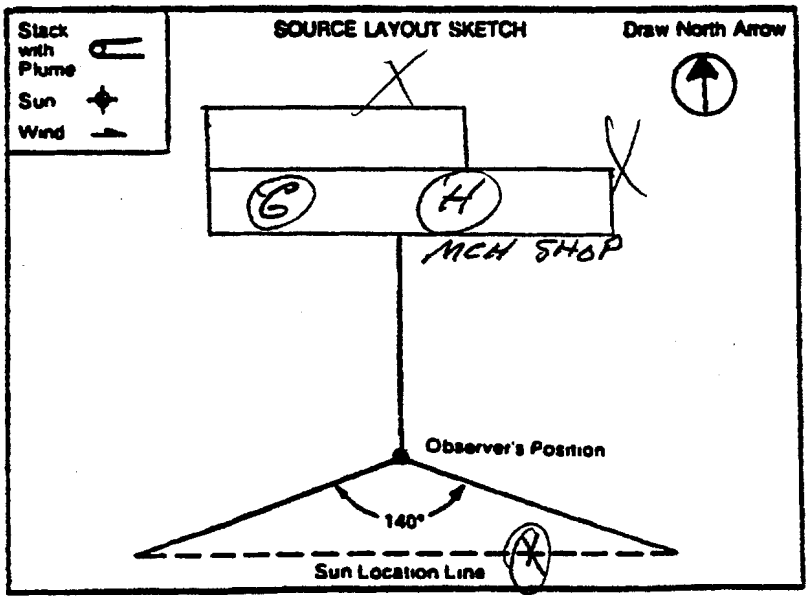
Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

No. 6 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 60' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coffing End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End Scattered
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW From End ✓
AMBIENT TEMP	Start 75 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	5	10	0	
3	15	20	35	35	
4	35	40	35	40	
5	40	40	40	35	
6	35	30	25	30	avg 545/24 = 22.71
7	30	30	25	20	
8	20	20	5	15	
9	10	10	10	5	
10	15	20	20	20	
11	15	20	20	20	TAP A
12	20	20	15	15	avg 420/24 = 17.50
13	10	10	10	10	
14	5	0	0	0	
15	0	0	0	0	end tap
16	0	0	0	0	~~change tap~~
17	0	0	0	0	~~end change~~
18	0	0	0	0	avg 45/24 = 1.88
19	0	0	0	0	change A
20	0	0	0	15	
21	10	10	10	20	
22	5	5	10	15	
23	20	25	25	25	
24	20	20	15	15	avg 265/24 = 11.04
25	25	20	20	15	
26	10	15	15	15	end change
27	15	15	10	10	
28	10	10	5	0	
29	0	0	0	0	
30	0	0	0	0	avg 210/24 = 8.75

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hall

Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

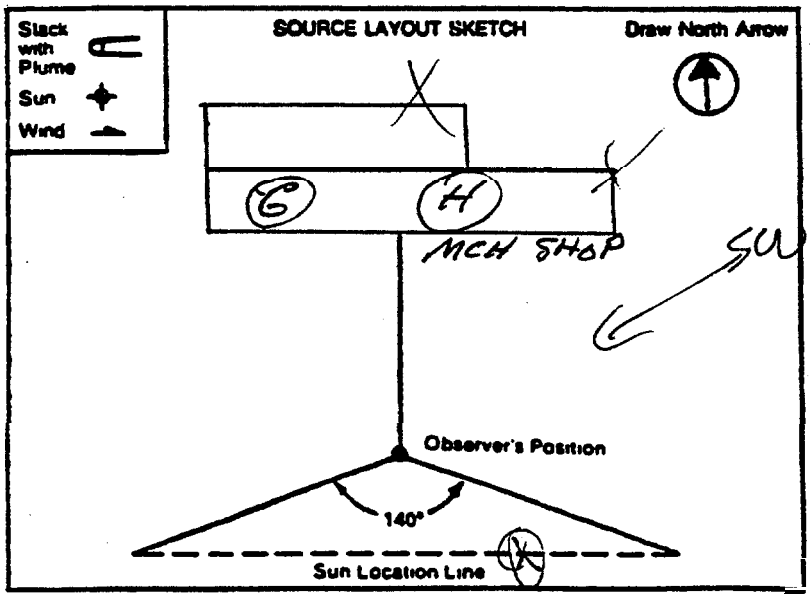
No. 2 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coming End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Brown Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 8-10 End ✓
WIND DIRECTION	Start SW From End ✓
AMBIENT TEMP	Start 75 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper - Jim Hall Wade Hill

Melter - Bruce Moore

OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	10	15	25	25	Top B
18	20	20	25	25	Bot Top
19	25	30	30	25	avg 55/24 = 6.46%
20	25	15	15	5	
21	5	0	0	0	
22	0	0	0	0	~~Bot Top B~~
23	0	0	0	0	
24	0	0	0	0	avg 12/24 = 5.0%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

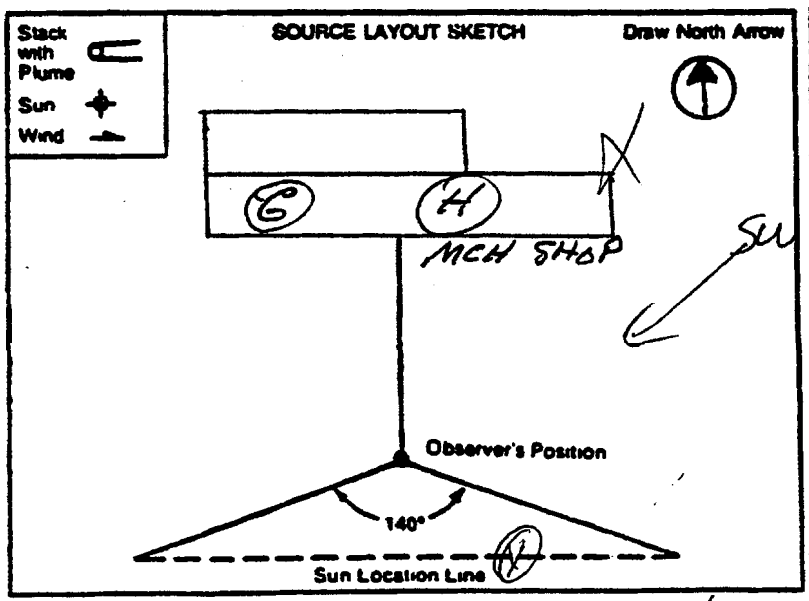
OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

No. 8 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor EAST END of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start BAGHOUSE/TREES End ✓
BACKGROUND COLOR	Start Brown Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 80 End 84
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION
1st Helper - Jim Hall Woody Hill
Melter - Bruce Moore

OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

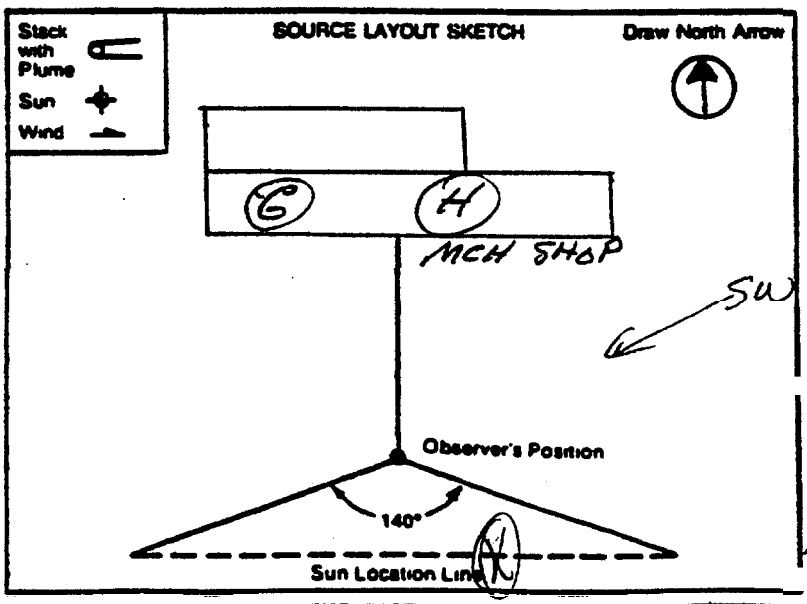
MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	10	0	0	0	Charge A
9	0	0	0	0	
10	0	0	0	0	end Charge
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	10	0	0	Charge B
18	0	0	0	01	end Charge B
19	0	0	0	0	avg 0/24 = 0%
20	0	0	0	0	
21	10	10	10	10	
22	5	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 40/24 = 1.67%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	10	10	avg 20/24 = 0.8%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start none End ✓
EMISSION COLOR	Start none End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Brown green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 84 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	Avg 0/24 = 0%
7					end Run
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hill

Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

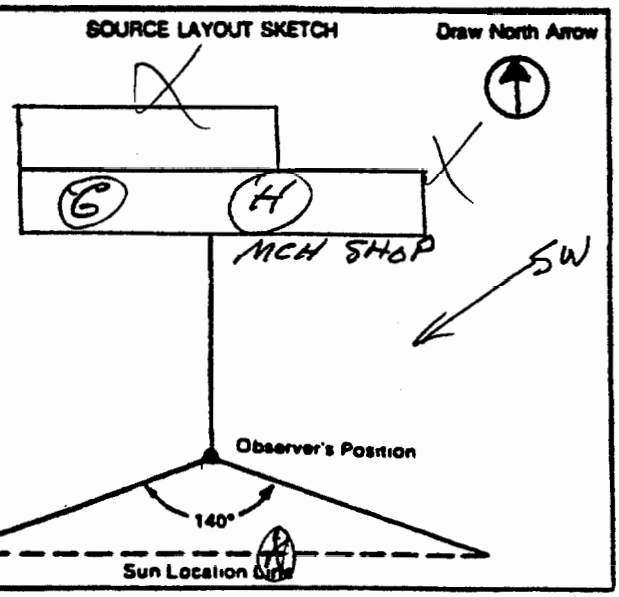
No. 1 OF 9

COMPANY NAME	Kentuck Electric Steel, Inc.
	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start white/dark red End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/trees End ✓
BACKGROUND COLOR	Start Green/brown End
SKY CONDITIONS	Start Broken End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	Start SW End
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	5	15	15	15	Dark red to white
2	30	30	30	30	Somewhere top on B
3	35	35	40	40	comes out sometimes hovering on top B
4	40	40	35	35	
5	30	30	30	25	655/24 = 27.29
6	25	15	15	15	avg 7/24 = end roofing leak
7	15	15	10	5	
8	5	5	5	5	
9	5	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 70/24 = 2.92%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	10	5	10	1.5	Change #
17	5	5	5	5	end change
18	0	0	5	5	avg 70/24 = 2.929%
19	5	10	15	15	
20	20	20	20	20	
21	20	20	20	15	
22	15	15	15	10	
23	15	15	10	20	
24	20	20	20	15	avg 390/24 = 16.25
25	15	15	5	5	
26	5	5	10	0	
27	0	0	5	15	
28	15	15	10	5	
29	10	10	10	15	avg 230/24 = 9.58
30	15	10	15	30	TAP B

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/0
CONTINUED ON VED FORM NUMBER	

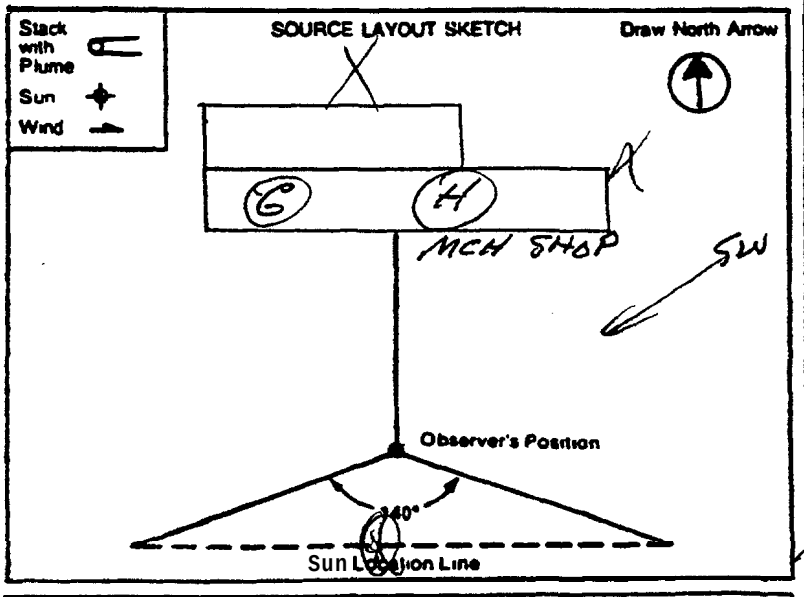
ADDITIONAL INFORMATION
1st Helper - Jim Hall Hardy Hill
Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

No. 2 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/Trees End ✓
BACKGROUND COLOR	Start Brown End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	25	25	25	30	
2	30	25	25	25	end tap B
3	30	25	25	20	
4	15	15	10	5	
5	5	10	5	5	
6	0	0	0	0	avg 380/24 = 15.83
7	0	0	0	0	charge B
8	0	25	35	30	
9	30	25	30	30	end charge B
10	30	35	35	30	
11	25	25	20	20	
12	10	10	5	5	avg 455/24 = 18.96
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 0/24 = 0%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 0/24 = 0%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

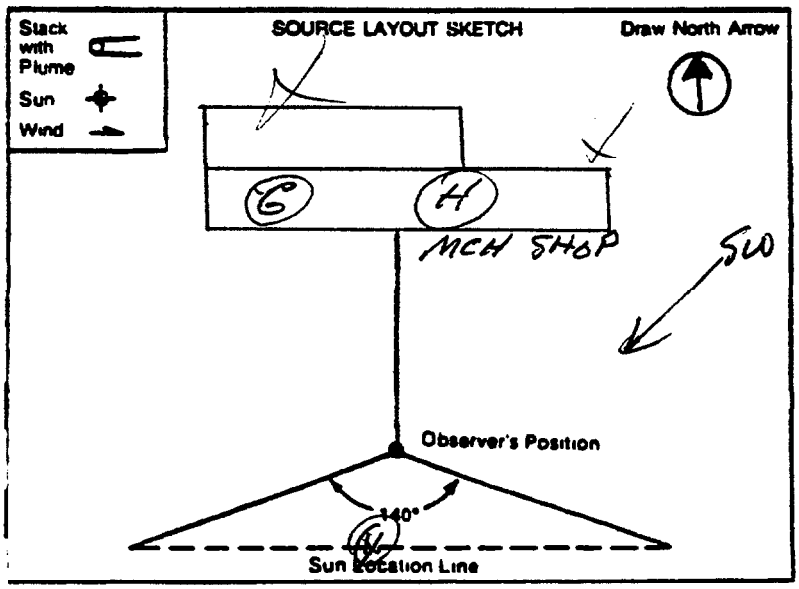
1st Helper - Jim Hall Woody Hill

Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

No. 3 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor East End of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coppting End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	sun 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start Baghouse/trees End ✓
BACKGROUND COLOR	Start Gray Brown End —
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 End
WIND DIRECTION	Start SW From End ✓
AMBIENT TEMP	Start 87 End
WET BULB TEMP	NA
RH, percent	NA



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	10	top A
9	15	15	10	5	
10	10	5	0	10	
11	5	5	0	0	
12	0	0	10	0	end top A avg 80/24 = 3.3
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 0/24 = 0%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	20	35	35	30	Shop B
24	30	25	30	20	avg 225/24 = 9.38%
25	25	25	30	20	
26	20	20	15	20	
27	20	20	15	15	Change B
28	20	15	15	10	
29	10	10	10	15	
30	15	15	15	5	avg 400/24 = 16.67%

OBSERVERS NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hall

Melter - Bruce Moore

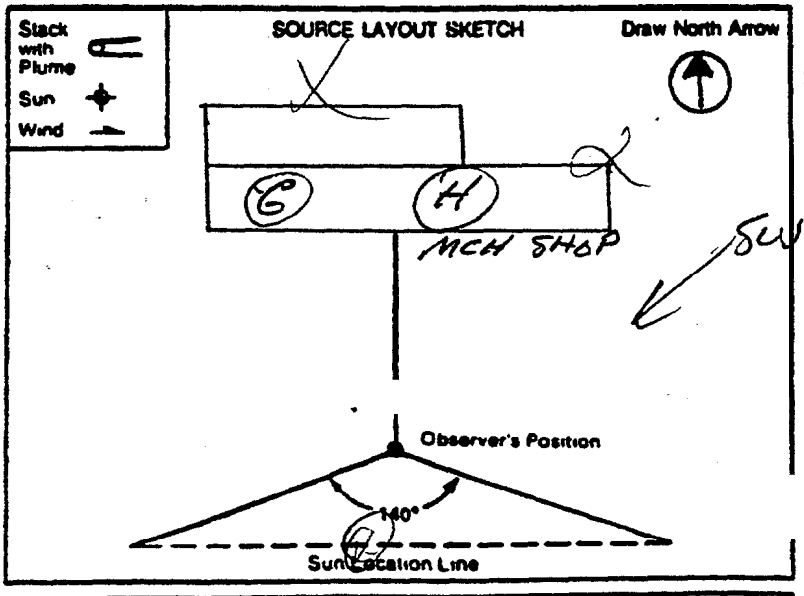
VISIBLE EMISSION OBSERVATION FORM

No. 4 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor EAST END of Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	LO' Ed ✓
DISTANCE FROM OBSERVER	Start 600' W 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coffing End
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start BAGHOUSE/TREES End ✓
BACKGROUND COLOR	Start Green Brown End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 88 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	10	5	5	10	
2	10	5	0	0	
3	0	0	0	10	
4	10	10	15	15	
5	20	20	15	15	end change B
6	10	10	5	5	avg 205/24 = 8.54%
7	5	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 5/24 = 0.21%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	10	
16	10	15	20	20	
17	20	20	15	15	Slip in B
18	15	15	20	25	avg 220/24 = 9.17%
19	30	30	35	40	
20	40	40	50	40	
21	40	30	40	30	
22	30	30	30	30	
23	25	25	25	25	
24	15	10	10	10	avg 710/24 = 29.58%
25	5	5	10	15	Change A
26	15	20	20	20	
27	20	25	25	20	end Change A
28	15	15	15	10	
29	10	20	20	10	
30	20	15	15	15	avg 370/24 = 15.42%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper - Jim Hall Wally Hill

Melter - Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

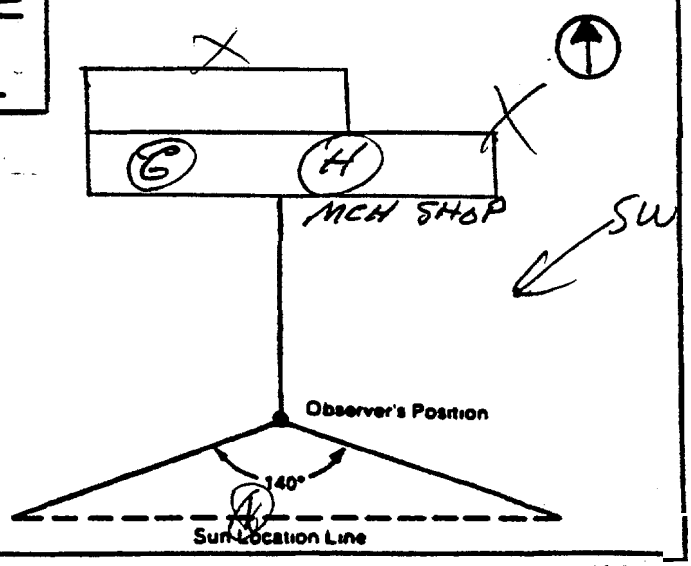
No. 5 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	~~Baghouse Exhaust~~ Roof Monitor EAST END OF Building
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End 600'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coating End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start BAGHOUSE/TREES End ✓
BACKGROUND COLOR	Start Brown Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW From End ✓
AMBIENT TEMP	Start 88 End ✓
WET BULB TEMP	Nil-
RH. percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hill

Melter - Bruce Moore

OBSERVATION DATE	START TIME	END TIME
5/12/00		

MIN \ SEC	0	15	30	45	COMMENTS
1	10	10	10	15	
2	15	15	15	15	
3	15	15	15	10	
4	5	15	15	10	
5	10	10	10	15	
6	15	15	15	5	Avg 310/24 = 12.92%
7					
8					
9					
10					
11					
12					
13					
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19					
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21					
22					
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24					
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26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

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'SIBLE EMISSION OBSERVATION FOR

No. 6 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle, East + West end of Melt Shop
HEIGHT ABOVE LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Visible + Opaque End
EMISSION COLOR	Start White + Opaque End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Baghouse + Trees End ✓
BACKGROUND COLOR	Start Brown + Green End ✓
SKY CONDITIONS	Start Scattered End
WIND SPEED	Start 7-15 mph End ✓
WIND DIRECTION	Start Southwest End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

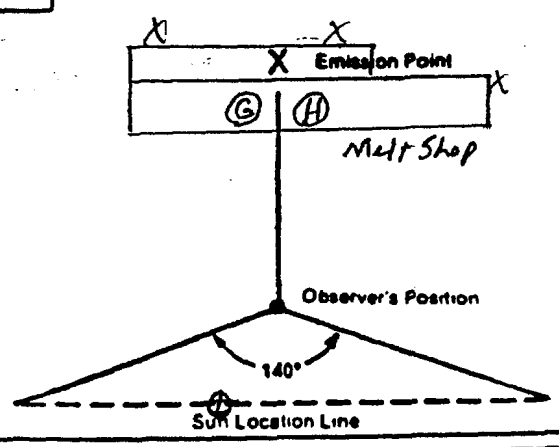
OBSERVATION DATE	START TIME	END TIME
5-12-00	1420	1450

MIN \ SEC	0	15	30	45	COMMENTS
1 1420	15	15	15	15	Melt shop
2	15	15	15	15	
3	15	15	15	15	
4	15	15	15	15	
5	15	20	20	30	420/24 = 17.50%
6 1425	30	25	20	20	
7 1426	20	15	15	15	
8	15	15	15	15	
9	15	15	15	15	
10	15	15	15	10	
11	10	10	10	10	340/24 = 14.17%
12 1431	15	15	15	15	
13 1432	15	15	15	10	
14	10	10	10	10	
15	10	10	10	10	
16	10	10	10	10	Tap B
17	15	20	20	20	310/24 = 12.92%
18 1437	15	15	15	15	
19 1438	15	15	15	15	
20	15	10	10	10	End Tap
21	10	10	10	10	
22	10	10	10	10	
23	10	10	10	5	240/24 = 10.00%
24 1443	5	5	5	5	Charge A
25	10	10	15	15	
26	15	10	10	10	
27	10	10	10	10	
28	10	10	10	10	
29	10	10	10	10	240/24 = 10.00%
30	10	5	5	5	

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
ADDITIONAL INFORMATION	1st Helper -
CONTINUED ON VEO FORM NUMBER	

Privileged and Confidential - Prepared at the Request of Legal Council

VISIBLE EMISSION OBSERVATION FORM

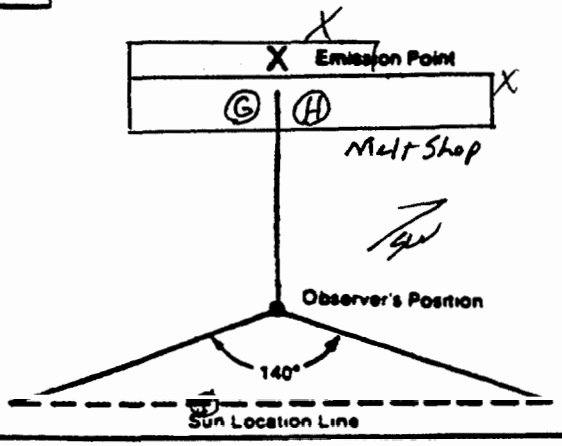
No. 2 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	East end + Middle of Melt Shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Light End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above roof End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 2-15. End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION
1st Helper -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1450	1520

SEC / MIN	0	15	30	45	COMMENTS
1450	5	5	5	0	Melt shop
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	55/24 = 2.29%
6 1455	0	0	15	25	Charge B
7 1456	25	30	30	30	End Charge
8	30	30	25	25	
9	25	20	20	15	
10	15	15	15	15	
11	15	15	10	10	450/24 = 18.75%
12 1501	10	10	10	5	
13 1502	5	5	5	5	
14	5	5	5	5	
15	5	0	0	0	
16	0	0	0	0	
17	0	0	0	0	45/24 = 1.88
18 1507	0	0	0	0	
19 1508	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	0/24 = 0 %
24 1513	0	0	0	0	
25 1514	0	0	0	0	
26	5	10	10	5	
27	5	5	0	0	
28	0	0	0	0	
29	0	0	10	10	90/24 = 3.75%
30 1519	5	5	10	10	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

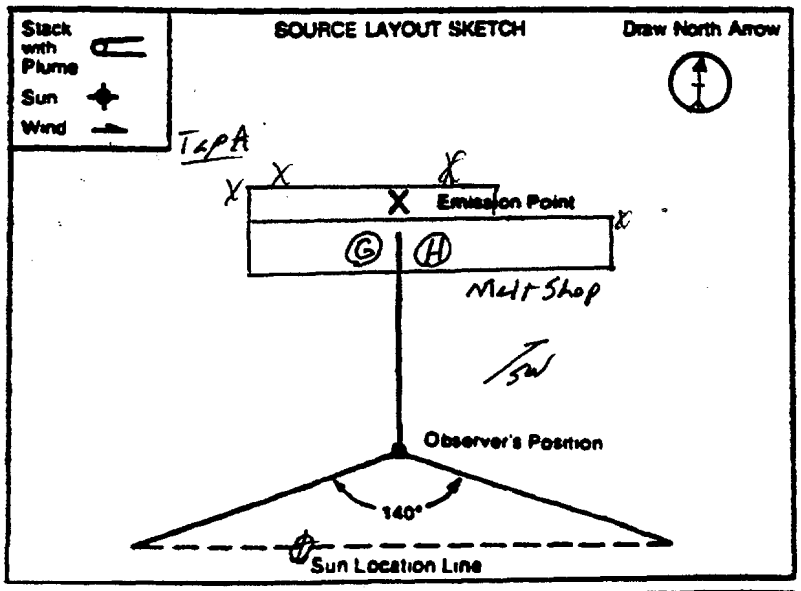
Privileged and Confidential - Prepared at the Request of Legal Council

VISIBLE EMISSION OBSERVATION FORM

No. 8 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle, East + West end of Melt shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start White End Off white ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION: 1st Helper -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1520	1550

MIN \ SEC	0	15	30	45	COMMENTS
1 1520	10	10	5	5	Melt shop
2	5	10	10	10	
3	15	20	20	20	
4	15	15	15	15	
5	15	15	15	15	320/24 = 13.33%
6 1525	15	15	15	15	
7 1526	15	10	10	10	
8	10	10	5	5	
9	5	5	5	5	
10	5	5	5	0	
11	0	0	5	10	175/24 = 7.29%
12 1531	10	10	15	15	
13 1532	15	20	20	15	
14	15	10	10	5	
15	5	5	5	5	
16	5	5	5	5	260/24 = 10.83%
17	5	10	10	15	Charge B
18 1537	15	15	20	20	
19 1538	20	15	15	15	
20	15	15	10	10	
21	10	10	10	5	
22	5	5	5	5	
23	5	0	0	0	210/24 = 8.75%
24 1543	0	10	10	15	Tap A
25 1544	15	15	20	20	
26	15	15	10	10	
27	10	10	10	10	
28	10	10	10	10	
29	10	10	5	5	285/24 = 11.88%
30 1549	5	15	15	20	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

Privileged and Confidential - Prepared at the Request of Legal Council

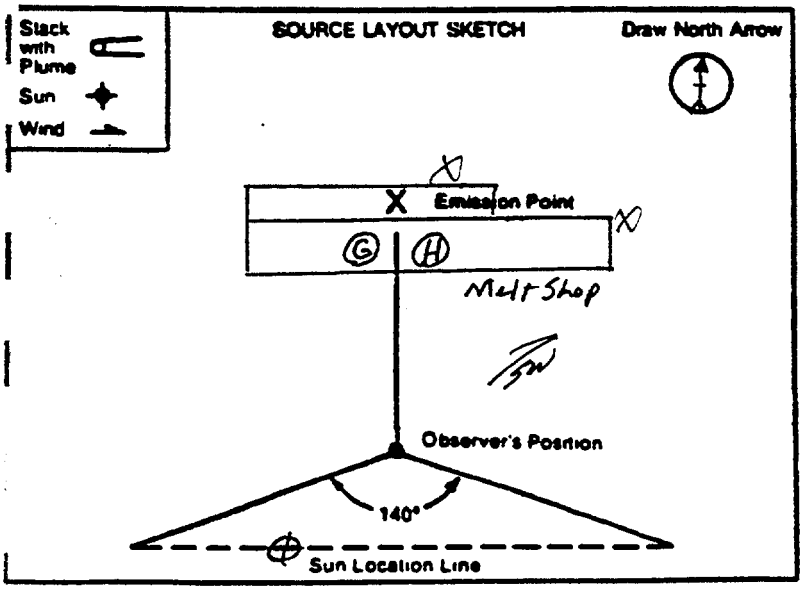
VISIBLE EMISSION OBSERVATION FORM

No. 9 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	Middle + East End of Melt Shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Same End ✓
EMISSION COLOR	Start Same End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1550	1620

SEC / MIN	0	15	30	45	COMMENTS
1 1550	20	25	25	25	Melt shop
2	25	25	25	30	
3	35	40	40	40	
4	40	40	40	40	
5	40	35	30	30	755/24 = 31.46%
6 1555	30	25	25	25	
7 1556	25	25	20	20	
8	20	15	15	15	
9	15	15	10	10	
10	10	10	10	10	
11	10	5	5	5	300/24 = 12.50%
12 1601	5	5	5	15	
13 1602	15	20	20	20	
14	20	20	20	20	
15	20	20	15	15	
16	15	15	15	15	405/24 = 16.88%
17	15	15	15	15	Pour back from LMF
18 1607	15	15	15	15	
19 1608	15	15	15	15	
20	15	15	10	10	
21	10	10	10	5	
22	5	5	5	10	
23	15	15	15	15	280/24 = 11.67%
24 1613	15	15	15	15	
25 1614	15	20	25	25	
26	25	25	25	25	
27	25	25	25	20	
28	20	15	15	15	
29	15	15	15	15	480/24 = 20.00
30 1620	15	20	20	20	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

Privileged and Confidential - Prepared at the Request of Legal Council

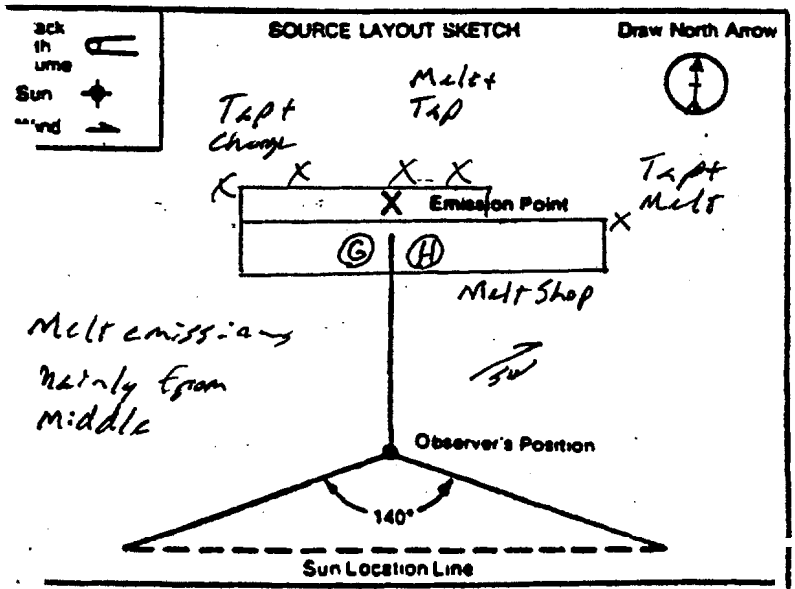
VISIBLE EMISSION OBSERVATION FORM

No. 1 of 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	Charge/Melt/Tap
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On line
DESCRIBE EMISSION POINT	East, West + Middle of Melt Shop
HEIGHT ABOVE GROUND LEVEL	60'
HEIGHT RELATIVE TO OBSERVER	Start 10' End ✓
DISTANCE FROM OBSERVER	Start 600' End ✓
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start L. Fring End
EMISSION COLOR	Start W Large End
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Baghouse + Trees End ✓
BACKGROUND COLOR	Start Brown + Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 mph End ✓
WIND DIRECTION	Start Southwest End ✓
AMBIENT TEMP	Start 90° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Welder -

OBSERVATION DATE	START TIME	END TIME
5-12-00	~~1715~~ 1718	1742

MIN \ SEC	0	15	30	45	COMMENTS
1718	10	10	10	15	Melt shop (600 HP fan turned off)
2	15	15	15	20	Tap A 1718
3	25	25	25	25	
4	25	25	25	20	End Tap
5	20	15	15	25	475/24 = 19.79%
6 1729	25	25	25	20	
7 1724	20	15	15	15	
8	15	15	10	10	
9	10	10	10	10	
10	10	10	10	15	Charge A
11	15	15	10	10	290/24 = 12.08%
12 1729	10	10	10	10	End Charge
13 1730	10	5	5	10	
14	10	15	20	25	
15	25	15	15	15	
16	10	10	15	20	
17	20	20	20	25	385/24 = 16.04%
18 1735	25	20	15	15	
19 1736	15	15	20	20	
20	20	20	25	15	
21	10	5	5	10	
22	10	15	15	20	
23	10	10	15	25	350/24 = 14.58%
24 1741	15	15	15	15	
25 1742					
26					
27					
28					
29					
30 1747					

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	

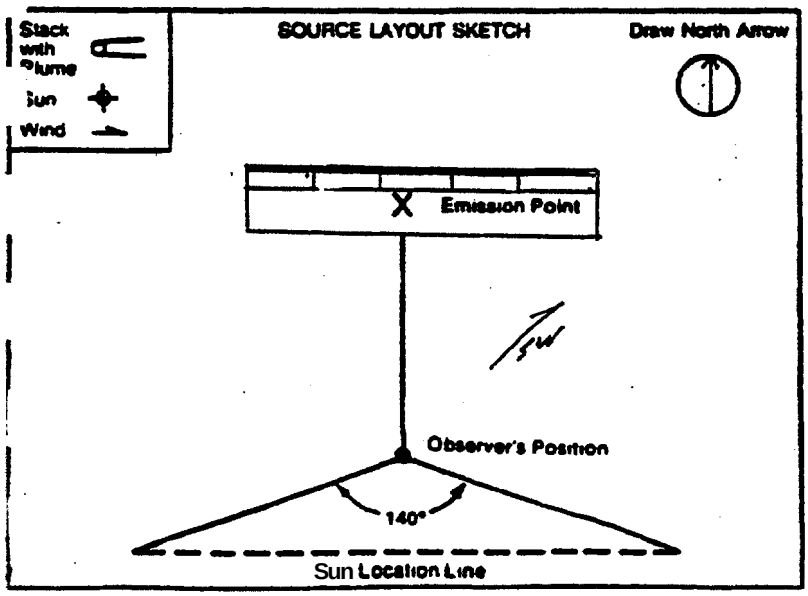
VISIBLE EMISSION OBSERVATION FORM

No. 1 of 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 MPH End ✓
WIND DIRECTION	Start Southwest End ✓
AMBIENT TEMP	Start 90° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-12-00	1718	1742

MIN \ SEC	0	15	30	45	COMMENTS
1 1718	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	0/24 = 0%
6 1723	0	0	0	0	
7 1724	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	0/24 = 0%
12 1729	0	0	0	0	
13 1730	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	0/24 = 0%
18 1735	0	0	0	0	
19 1736	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	0/24 = 0%
24 1741	0	0	0	0	
25 1742					
26					
27					
28					
29					
30 1747					

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

ADDITIONAL INFORMATION

1st Helper -

VISIBLE EMISSION OBSERVATION FORM

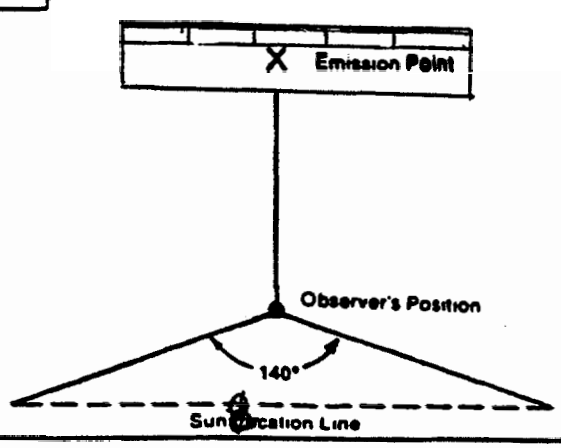
No. 1 of 12

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out & above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 MPH End ✓
WIND DIRECTION	Start Southwest End West
AMBIENT TEMP	Start 80 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1359	1429

MIN \ SEC	0	15	30	45	COMMENTS
1 1359	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	0/24=0%
6 1404	0	0	0	0	
7 1405	0	0 to 10	10 to 0	0 to 5	Should have been a
8	0 to 5	10 to 5	0 to 0	0	Melt shop VEs
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	0/24=0%
12 1410	0	0	0	0	
13 1411	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	0/24=0%
18 1416	0	0	0	0	
19 1417	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	0/24=0%
24 1423	0	0	0	0	
25 1427	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1428	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
ON	NNNNN

ADDITIONAL INFORMATION

1st Helper -

Melter -

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

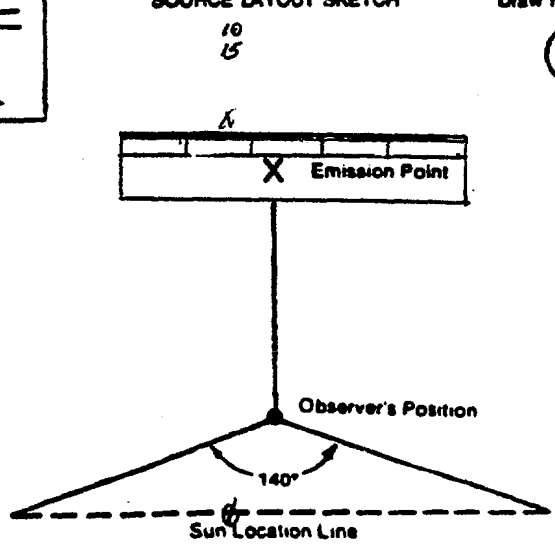
No. 2 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start Ok Loft End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 mph End
WIND DIRECTION	Start Southwest End
AMBIENT TEMP	Start 80° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1429	1459

SEC / MIN	0	15	30	45	COMMENTS
1 1429	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	10	0	0	
5	0	0	0	0	10/24 = 0.42%
6 1434	0	0	0	0	
7 1435	0	0	0	15	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	15/24 = 0.63%
12 1440	0	0	0	0	
13 1441	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1446	0	0	0	0	
19 1447	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1452	0	0	0	0	
25 1453	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	20	0	
29	0	0	0	0	20/24 = 0.83%
30 1458	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-01
ADDITIONAL INFORMATION	1st Helper - Melter -
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

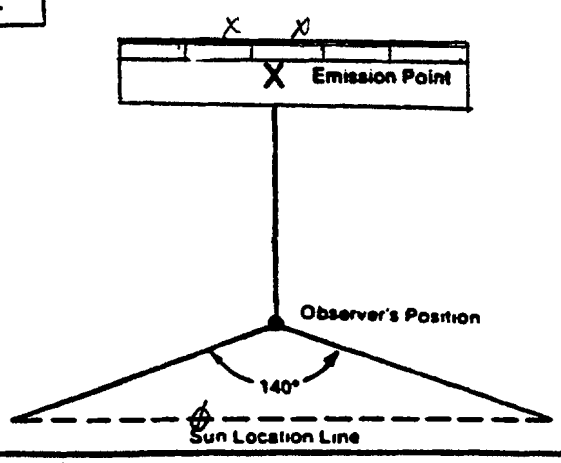
No. 3 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start Lofting End None
EMISSION COLOR	Start Orange End N/A
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 MPH End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 80 End 85
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1459	1529

SEC / MIN	0	15	30	45	COMMENTS
1 1459	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1504	0	0	0	0	
7 1505	0	0	0	25	
8	0	0	0	10	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	25/24 = 1.04%
12 1510	0	0	0	0	
13 1511	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1516	0	0	0	0	
19 1517	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1522	0	0	0	0	
25 1523	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1528	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

CONTINUED ON VEO FORM NUMBER 2 4 0

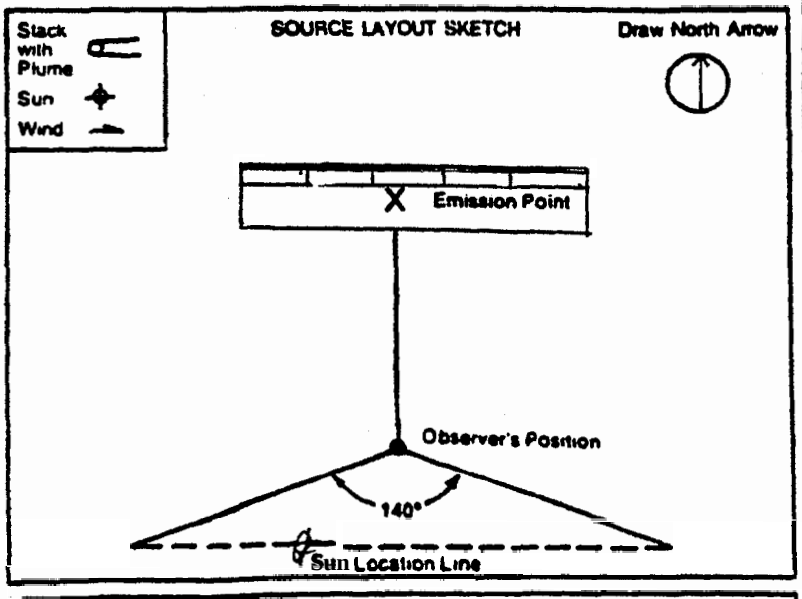
VISIBLE EMISSION OBSERVATION F M

No. 4 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SC	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	sun 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

M. [illegible] -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1529	1559

MIN \ SEC	0	15	30	45	COMMENTS
1 1529	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1534	0	0	0	0	
7 1535	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1540	0	0	0	0	
13 1541	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1546	0	0	0	0	
19 1547	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	Ø
23	0	0	0	0	
24 1552	0	0	0	0	
25 1553	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1559	0	0	0	0	

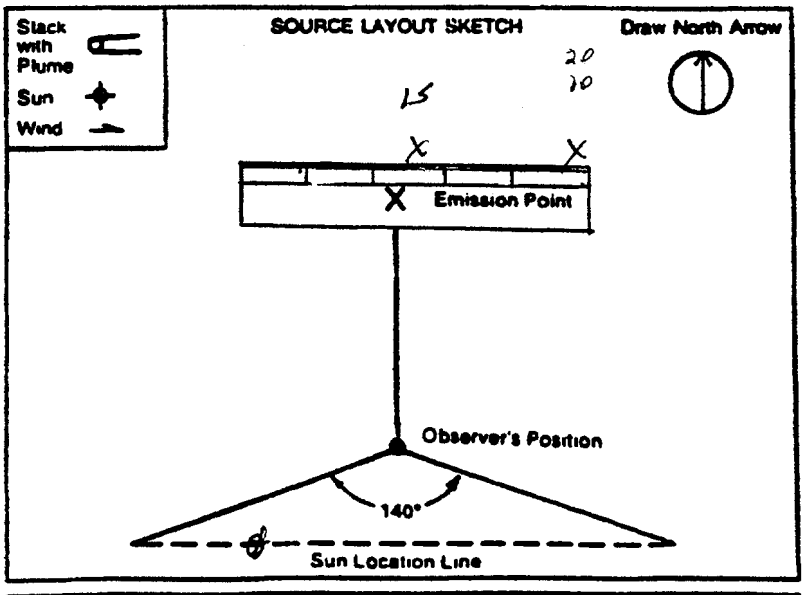
OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

No. 5 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End Lofting
EMISSION COLOR	Start N/A End Orange
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End Scattered + Hazy
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5-11-00	1559	1629

SEC / MIN	0	15	30	45	COMMENTS
1559	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1604	0	0	0	0	
7 1605	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1610	0	0	0	0	
13 1611	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	20	30/24 = 1.25%
18 1616	0	0	0	10	
19 1617	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1622	0	0	0	0	
1623 25 1628	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	15/24 = 0.63%
30 1629	0	15	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-01

ADDITIONAL INFORMATION

1st Helper -

Melter -

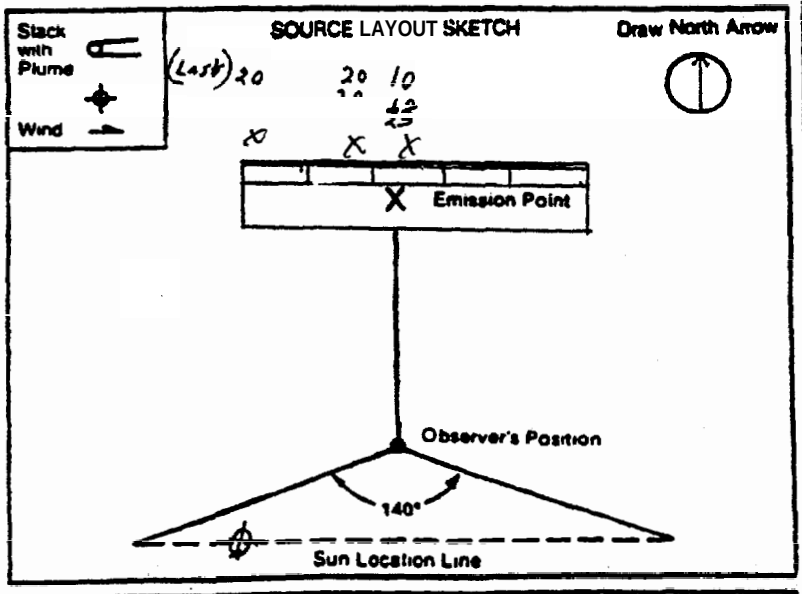
CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION F IM

No. 6 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	S 5 End ✓
DISTANCE FROM OBSERVER	Start 700' End
DIRECTION FROM OBSERVER	Start North ✓
DESCRIBE	Start L. Fray End ✓
EMISSION COLOR	Start Orange
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Sun End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered Hazy End ✓
WIND SPEED	Start 5-10 End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5-11-00	1629	~~1658~~ 16

SEC / MIN	0	15	30	45	COMMENTS
1 1629	0	0	10	0	Baghouse
2	0	0	0	0	
3	0	0	20	0	
4	0	0	0	0	
5	0	0	0	0	30/24 = 1.25%
6 1634	0	0	0	0	
7 1635	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	20	
11	0	0	0	0	20/24 = 0.83%
12 1640	0	0	0	0	
13 1641	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1646	0	0	0	0	
19 1647	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	10	0	0	35/24 = 1.46%
24 1652	0	0	25	0	
25 1653	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	20	
29	0	0	0	0	20/24 = 0.83%
30 1658	0	0	0	0	

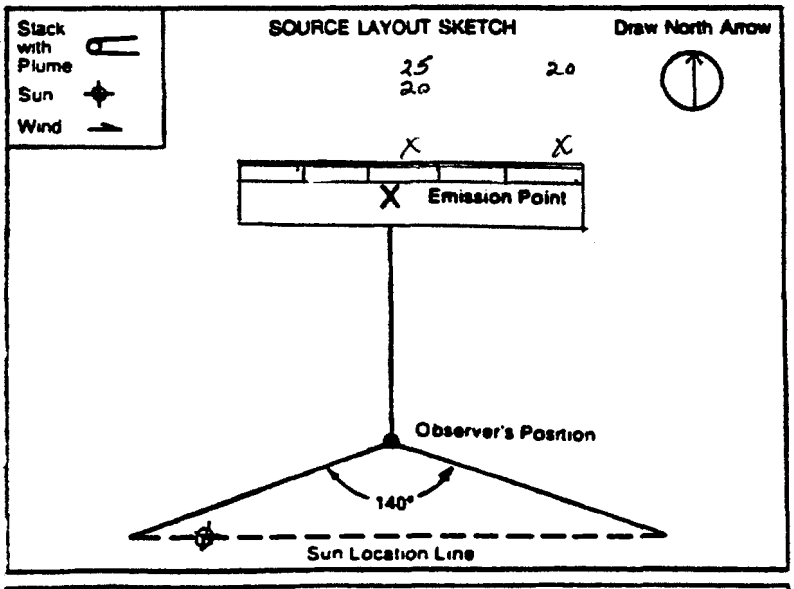
OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-01
ADDITIONAL INFORMATION	1st Helper -
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

No. 2 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Brown End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End Scattered hazy
WIND SPEED	Start 1-5 End ✓
WIND DIRECTION	Start South End ✓
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH



OBSERVATION DATE	START TIME	END TIME
5-11-00	1659	1729

MIN \ SEC	0	15	30	45	COMMENTS
1 1659	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1704	0	0	0	0	
7 1705	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	20	0	
11	0	0	0	0	20/24 = 0.83%
12 1710	0	0	0	0	
13 1711	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	25	0	
17	0	0	20	0	45/24 = 1.88%
18 1716	0	0	0	0	
19 1717	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1722	0	0	0	0	
25 1723	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1728	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
ADDITIONAL INFORMATION	1st Helper - Melter -
CONTINUED ON VEO FORM NUMBER	0 8

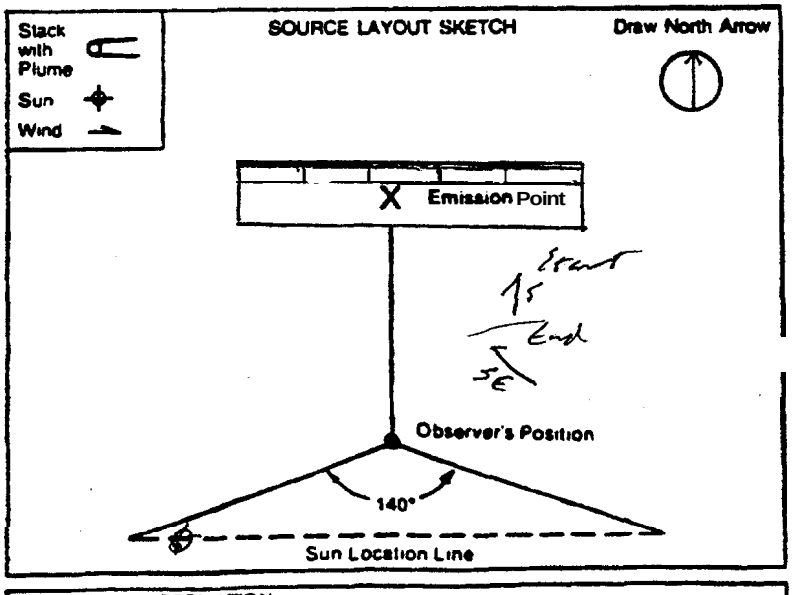
VISIBLE EMISSION OBSERVATION FORM

No. 8 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered clouds + Hazy End Broken
WIND SPEED	Start 1-5 End 1-10 mph
WIND DIRECTION	Start South End SE
AMBIENT TEMP	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1729	1759

MIN \ SEC	0	15	30	45	COMMENTS
1 1729	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1734	0	0	0	0	
7 1735	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1740	0	0	0	0	
13 1741	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1746	0	0	0	0	
19 1747	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1752	0	0	0	0	
25 1753	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1759	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	09

ADDITIONAL INFORMATION

1st Helper -

Melter -

VISIBLE EMISSION OBSERVATION FORM

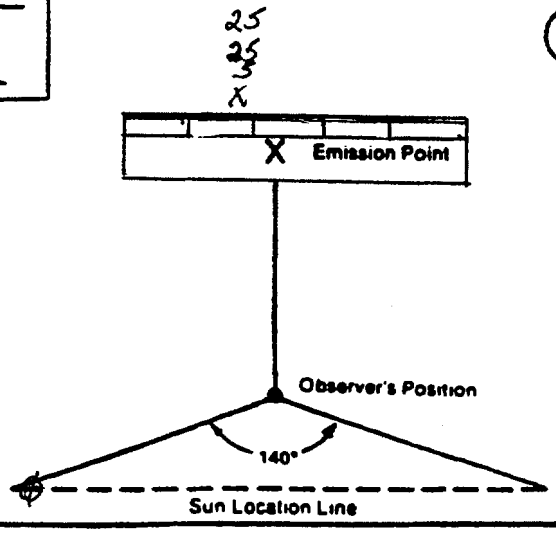
No. 9 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End Lot of Dry
EMISSION COLOR	Start N/A End Orange
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End ✓
WIND SPEED	Start 1-10 mph End ✓
WIND DIRECTION	Start Southeast End SE
AMBIENT TEMP	Start 85° End 80°
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-11-00	1759	

SEC / MIN	0	15	30	45	COMMENTS
1 1759	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1804	0	0	0	0	
7 1805	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1810	0	0	0	0	
13 1811	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	25	0	
17	0	0	0	0	25/24 = 1.04%
18 1816	0	0	0	0	
19 1817	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	25	5	0	30/24 = 1.25%
24 1822	0	0	0	0	
25 1823	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1828	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	/

VISIBLE EMISSION OBSERVATION FORM

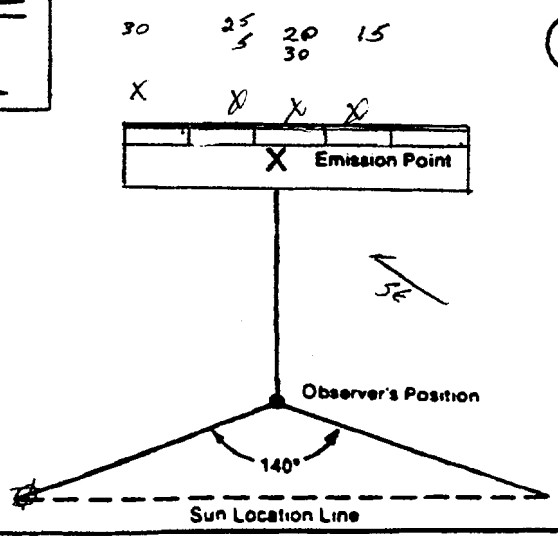
No. 12 of 10

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End ✓
WIND SPEED	Start 1-10 mph End ✓
WIND DIRECTION	Start Southeast End ✓
AMBIENT TEMP	Start 80° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-11-00	1829	1859

MIN \ SEC	0	15	30	45	COMMENTS
1 1829	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	15	0	0	35/24 = 1.46%
6 1834	0	0	20	0	
7 1835	0	0	30	0	
8 1836	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	30	6°/24 = 2.50%
12 1840	0	0	0	0	
13 1841	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	25	5	30/24 = 1.25%
18 1846	0	0	0	0	
19 1847	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1852	0	0	0	0	
25 1853	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1858	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
ADDITIONAL INFORMATION	1st Helper -
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

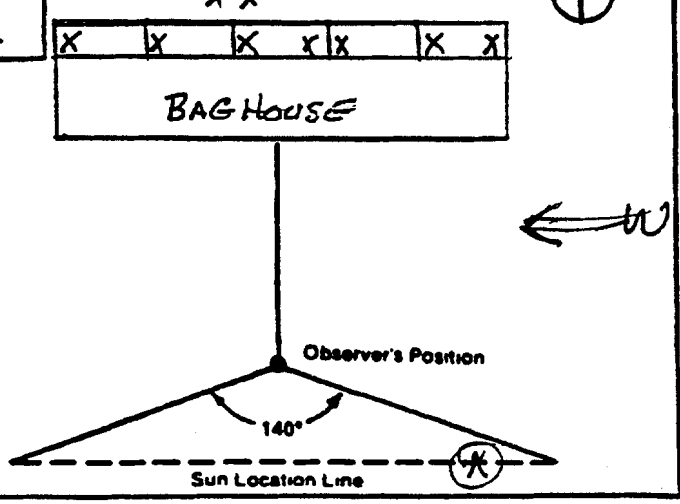
No. 1 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start COFT 1hrg End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6mph End ✓
WIND DIRECTION	Start W End ✓
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	10	0	#1R
3	0	0	0	10	#1L
4	0	0	0	0	
5	0	0	0	0	
6	0	5	0	0	#2L
7	0	15	0	0	#3R
8	0	20	0	0	3L
9	0	0	0	0	
10	0	0	0	15	4L
11	0	0	0	0	
12	0	0	0	0	
13	10	0	0	0	5L
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	20	0	4RN
18	0	0	0	10	3LN
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Tony Hall / Woody Hall
MEITER

VISIBLE EMISSION OBSERVATION FORM

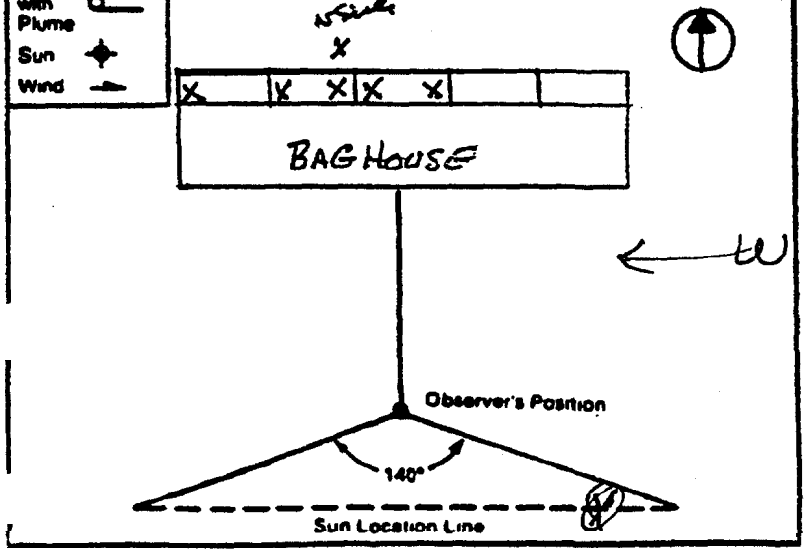
No. 2 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6 mph End ✓
WIND DIRECTION	Start W End FROM
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	15	0	#3L
2	0	0	0	0	
3	0	0	10	0	4L
4	0	0	0	0	
5	0	0	0	15	5L
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	15	0	#4RN
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	10	0	0	3R
24	0	0	15	0	3L
25	0	0	0	0	
26	0	0	0	5	4R
27	0	0	0	0	
28	0	0	0	0	
29	15	0	0	0	#5L
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hall
MELTER Bruce Mann

VISIBLE EMISSION OBSERVATION FORM

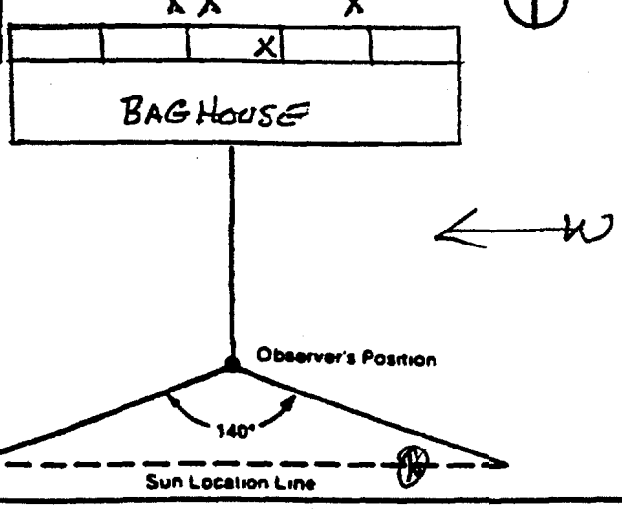
No. 3 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coffing End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6 End ✓
WIND DIRECTION	Start W End ✓ FROM
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH
N Side

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	20	4 RN
4	0	0	0	15	3 LN
5	0	0	0	0	
6	0	0	0	0	
7	0	10	0	0	#2 NR
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	10	0	0	#3 R
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Jim Hall Woodey Hill
MELTER Bruce [illegible]

VISIBLE EMISSION OBSERVATION FORM

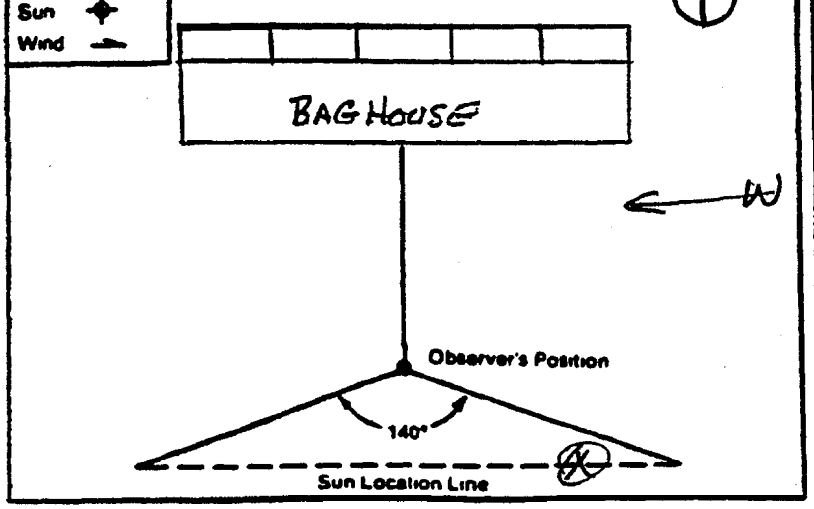
No. 4 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start None End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 6-8 mph End ✓
WIND DIRECTION	Start W End ✓ FROM
AMBIENT TEMP	Start 72 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hill
MELTER Bruce [illegible]

VISIBLE EMISSION OBSERVATION FORM

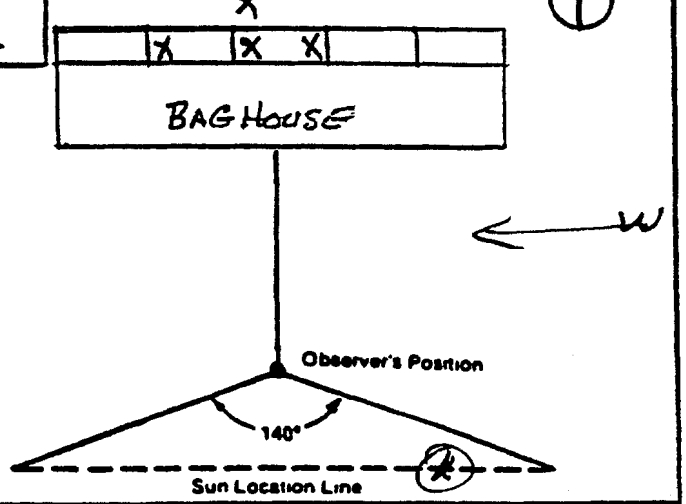
No. 5 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	~~Melt~~ Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start as(End as/
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ( ) NA
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 6-8 mph End ✓
WIND DIRECTION	Start W End ✓ FROM
AMBIENT TEMP	Start 72 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	5	0	0	0	#3 L
9	0	0	0	0	
10	0	10	0	0	4 L
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	15	0	#3 LN
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	10	0	0	0	#3 R

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hall
MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

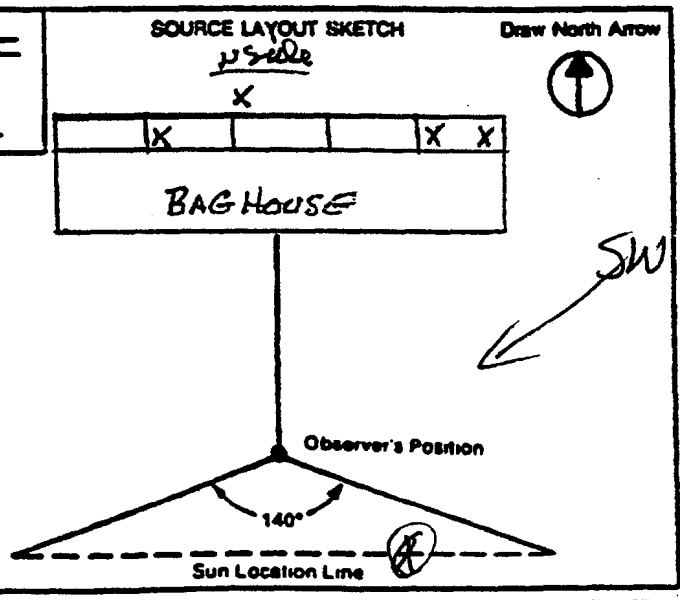
No. 6 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start COFTing End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Broken End Scattered
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	FROM Start SW End ✓
AMBIENT TEMP	Start 75 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	10	0	0	0	#4L
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	15	0	0	3LN
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	15	0	0	0	1R
29	0	10	0	0	1L
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st HELPER Jim Hall Woody Hill

MELTER Bruce [illegible]

VISIBLE EMISSION OBSERVATION FORM

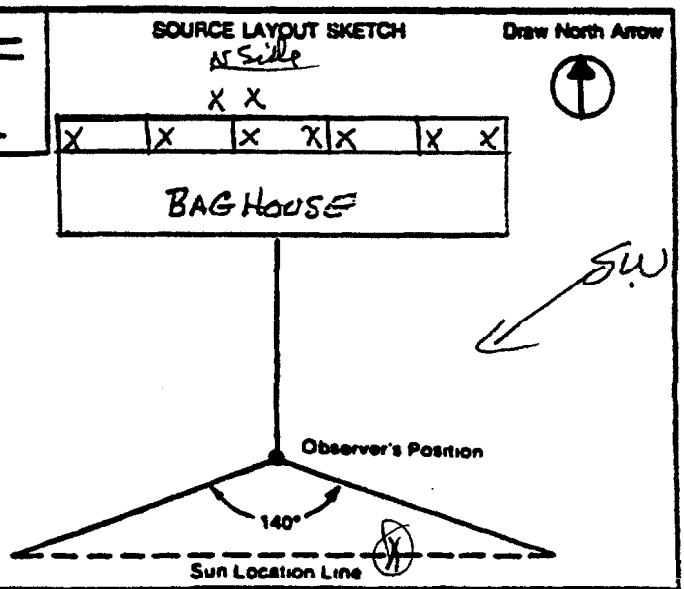
No. 7 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	~~Melt~~ Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	Start SW FROM End ✓
AMBIENT TEMP	Start 5 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	10	3R
3	0	0	0	0	
4	15	0	0	0	3L
5	0	0	0	0	
6	0	10	0	0	4L
7	0	0	0	0	
8	0	15	0	0	5L
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	15	0	0	0	4RN
14	0	15	0	0	3LN
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	15	0	0	0	1R
22	0	10	0	0	1L
23	0	0	0	0	
24	0	0	0	0	
25	5	0	0	0	2L
26	10	0	0	0	3R
27	10	0	0	0	3L
28	0	0	0	0	
29	0	10	0	0	4L
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st HELPER Jim Hall Woody Hall

MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

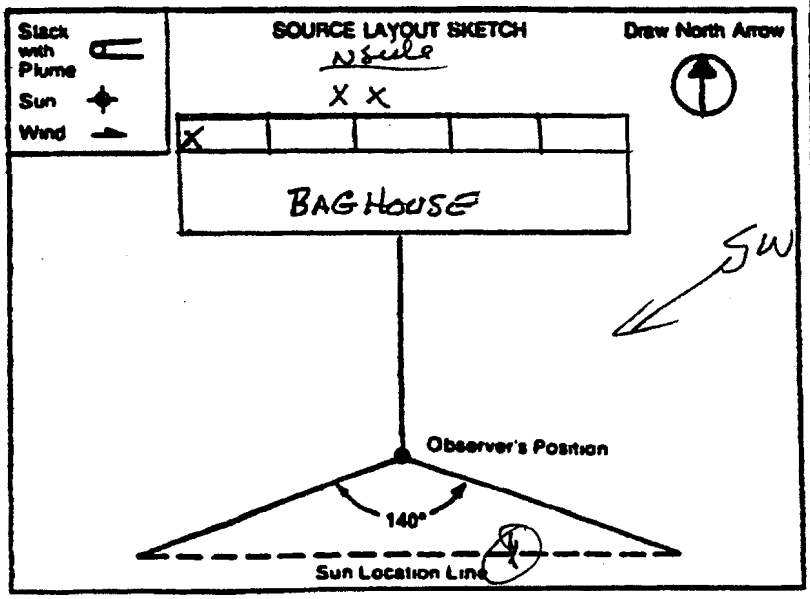
No. 8 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Coffing End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓ FROM
AMBIENT TEMP	Start 80 End 84
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	15	0	5 L
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	15	0	0	0	4RN
7	0	10	0	0	3RN
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1ST HELPER Jim Hall Woody Hill

MELTER Bruce Moore

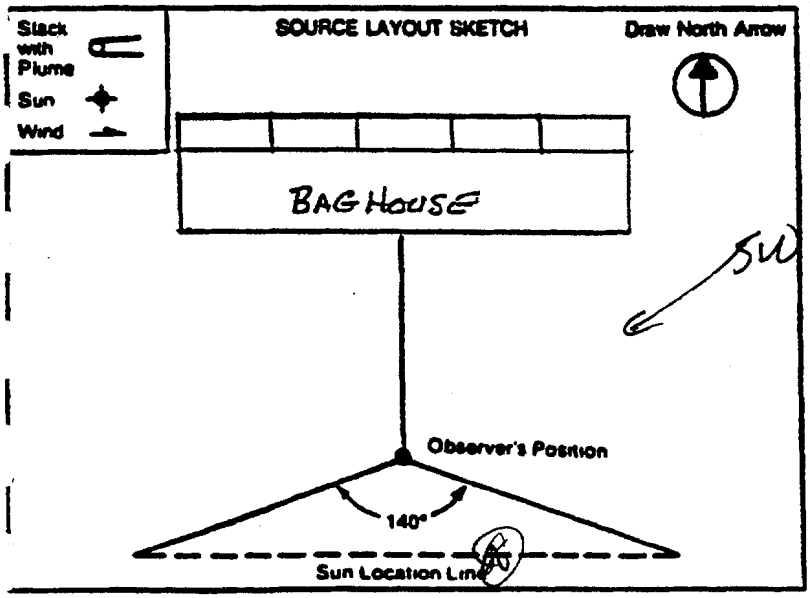
VISIBLE EMISSION OBSERVATION FORM

No. 9 OF 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start None End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓ FROM
AMBIENT TEMP	Start 84 End
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7					end Run
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1ST HELPER Jim Hall Woody Hill

MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FOR

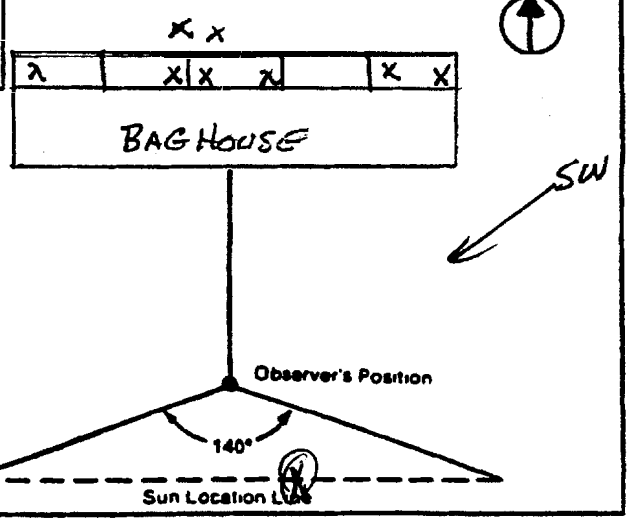
No. 1 OF 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start LOFTING End ✓
EMISSION COLOR	Start Gray End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME	Start TREES End
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	Start SW End ✓ FROM
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hall
MELTER Bruce Mark

OBSERVATION DATE	START TIME	END
5/12/00	1218	—

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	15	#1R
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	10	0	3R avg 25/24=1.04
7	0	0	10	0	3L
8	0	0	0	0	
9	0	0	0	10	4R
10	0	0	0	0	
11	0	0	0	0	
12	20	0	0	0	5L avg 40/24=1.67%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	25	4RN
17	0	0	0	0	
18	20	0	0	0	3LN avg 45/24=1.88%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	10	1R avg 10/24=0.42%
25	0	0	0	0	
26	10	0	0	0	1L
27	0	0	0	0	
28	0	0	0	0	
29	0	0	10	0	3R
30	0	0	0	20	3L avg 40/24=1.67

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FC 1

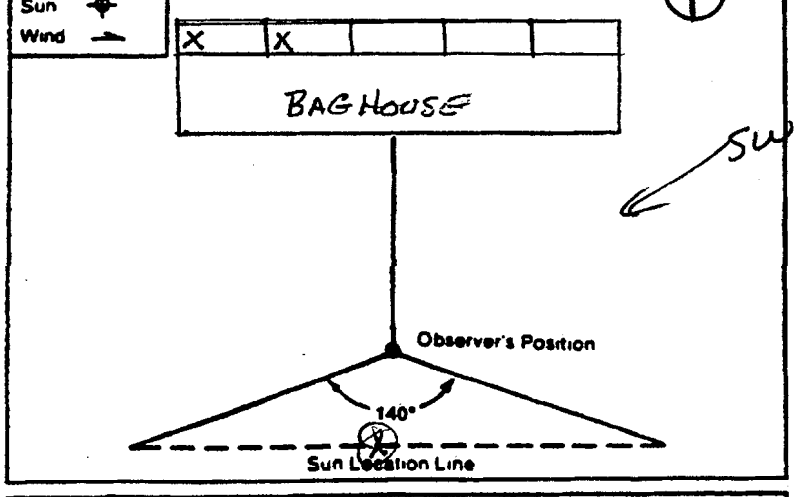
No. 2 OF 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start LOFTing End ✓
EMISSION COLOR	Start Gray End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hill
MELTER Bruce Zoare

OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	15	0	0	0	4L
4	0	0	0	0	
5	20	0	0	0	5L
6	0	0	0	0	avg 35/24 = 1.46%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 0/24 = 0%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 0/24 = 0%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FO'

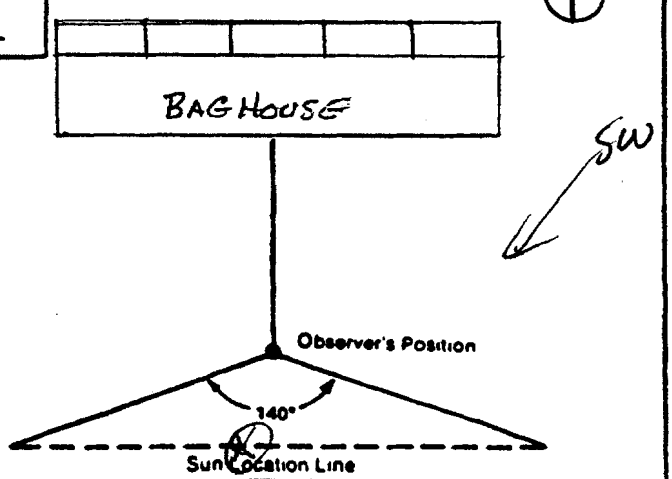
No. 3 OF 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End d ~ '
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start none End ✓
EMISSION COLOR	Start none End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 87 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 0/24 = 0%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 0/24 = 0%
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	avg 0/24 = 0%

OBSERVERS NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hall
MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FC

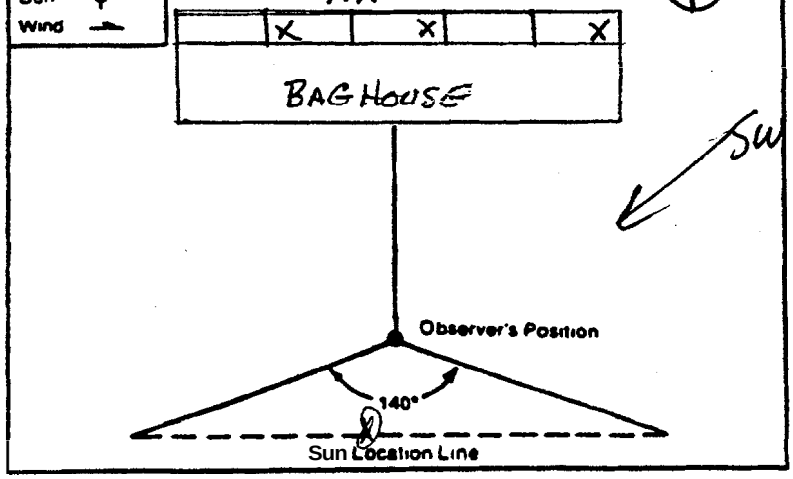
No. 4 OF 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Sun 25' End
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start Lofting End ✓
EMISSION COLOR	Start Orange End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	~ a Southern End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	FROM Start SW End ✓
AMBIENT TEMP	Start 88 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00	1218	

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	avg 0/24 = 0%
13	0	0	20	0	4RN
14	0	0	0	10	3LN
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	avg 30/24 = 1.25%
19	0	0	0	0	
20	0	0	0	0	
21	0	0	15	0	#1R
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	avg 15/24 = 0.63%
25	0	0	0	0	
26	0	15	0	0	3R
27	0	0	0	0	
28	0	0	0	0	
29	0	0	10	0	4C
30	0	0	0	0	avg 25/24 = 1.04%

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st HELPER Jim Hall Woody Hill

MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FC

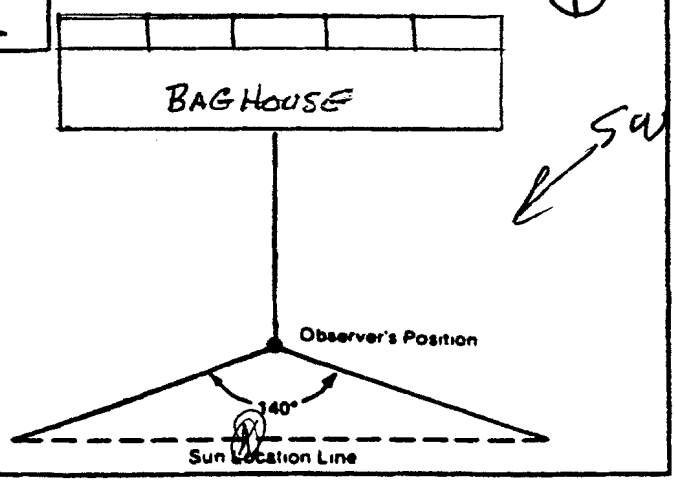
No. 5 OF 1

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End 25'
DISTANCE FROM OBSERVER	Start 700' End 700'
DIRECTION FROM OBSERVER	Start North End North
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start None End ✓
IF WATER DROPLET PLUME	Attached ☐ NA Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 5' to 10' Above Monitor End
DESCRIBE PLUME BACKGROUND	Start TREES End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start SW End FROM
AMBIENT TEMP	Start 88 End ✓
WET BULB TEMP	NA
RH, percent	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5/12/00		

MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	avg 0/24 = 0%
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)	George Hensley
OBSERVER'S SIGNATURE	George Hensley
DATE	5/12/00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3/29/00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st HELPER Jim Hall Woody Hill

MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FORM

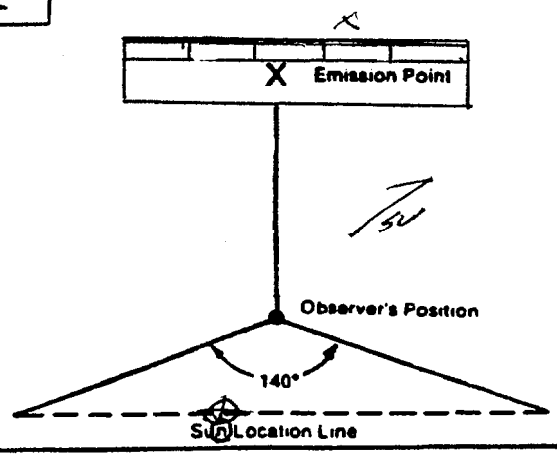
No. 6 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start Lofting End None
EMISSION COLOR	Start Orange End N/A
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out & above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 mph End ✓
WIND DIRECTION	Start Southwest End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

Stack with Plume
Sun 4
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1420	1459

MIN \ SEC	0	15	30	45	COMMENTS
1 1420	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1425	0	0	0	0	
7 1426	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1431	0	0	0	0	
13 1432	0	0	0	0	
14	0	0	0	15	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	15/24 = 0.63%
18 1437	0	0	0	0	
19 1438	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1443	0	0	0	0	
25 1444	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1449	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

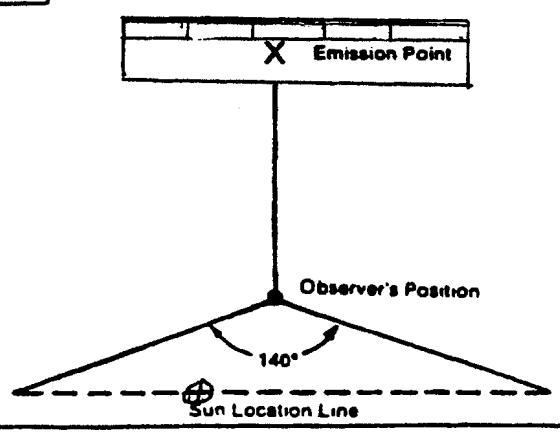
No. 2 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1450	1520

MIN \ SEC	0	15	30	45	COMMENTS
1450	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1455	0	0	0	0	
7 1456	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1501	0	0	0	0	
13 1502	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1507	0	0	0	0	
19 1508	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1513	0	0	0	0	
25 1514	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1519	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	

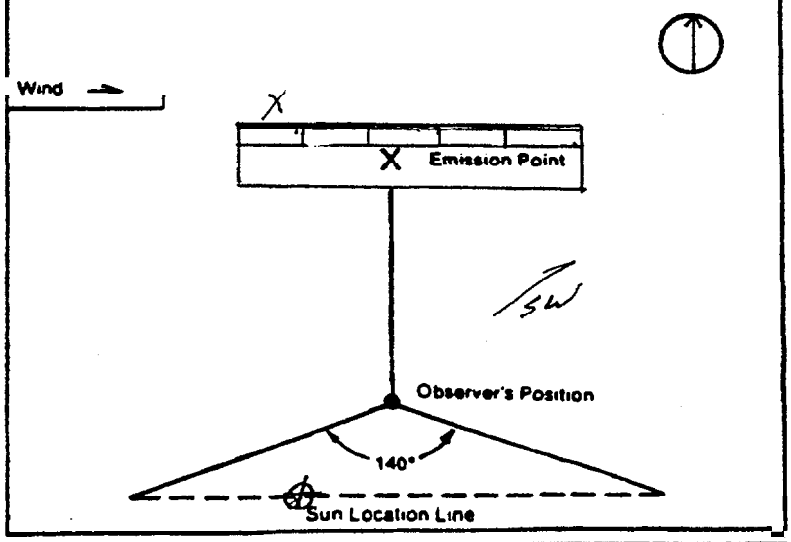
VISIBLE EMISSION OBSERVATION FORM

No. 8 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End Light Gray
EMISSION COLOR	Start N/A End Orange
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Sky End ✓
SKY CONDITIONS	Start Scattered End ✓
WINDSPEED	Start 2-15 mph End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Hour - Melter -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1520	1550

SEC / MIN	0	15	30	45	COMMENTS
1 1520	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 1526	0	0	0	0	
7 1526	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1531	0	0	0	0	
13 1532	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1537	0	0	0	0	
19 1538	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	25	
23	0	0	0	0	25/24 = 1.04%
24 1543	0	0	0	0	
25 1544	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1549	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
ME	3-22-00

CONTINUED ON VEO FORM NUMBER 1 1 1 1 1

VISIBLE EMISSION OBSERVATION FORM

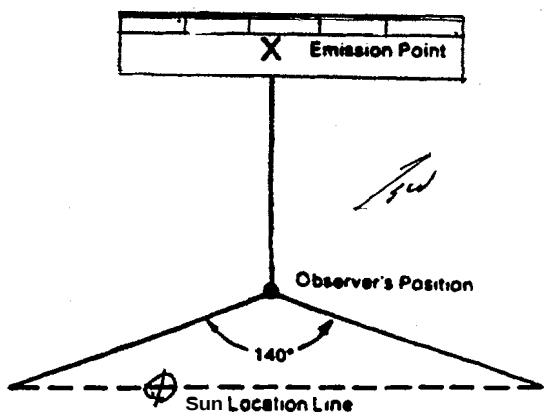
No. 9 of 9

COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL	75'
HEIGHT RELATIVE TO OBSERVER	Start 25' End ✓
DISTANCE FROM OBSERVER	Start 700' End ✓
DIRECTION FROM OBSERVER	Start North End ✓
DESCRIBE EMISSIONS	Start None End ✓
EMISSION COLOR	Start N/A End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Same End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 7-15 End ✓
WIND DIRECTION	Start SW End ✓
AMBIENT TEMP	Start 85-90 End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



OBSERVATION DATE	START TIME	END TIME
5-12-99	1559	1620

MIN \ SEC	0	15	30	45	COMMENTS
1 1550	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6 1555	0	0	0	0	Ø
7 1554	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	Ø
12 1601	0	0	0	0	
13 1602	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	Ø
18 1602	0	0	0	0	
19 1608	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	Ø
24 1612	0	0	0	0	
25 1614	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	Ø
30 1620	0	0	0	0	

OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-12-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	

ADDITIONAL INFORMATION

1st Helper -

Melter -

Appendix B

Production/Process Field Data

charge - VE

2

.343

KENTUCKY ELECTRIC STEEL
BAGHOUSE TEST PROCESS MONITORING FORM

Date 5/12/06 START - 07:15

Time	Baghouse Fan Amperage A	B	C	LmF	Baghouse Pressure Drop, in. WG	Damper Positions (Describe)	Notes (Heat No. and time; Charge and Tap Times]
7:15	176	181	99	101	5.8	All open except Fresh Air	A+B Melting
7:30	179	187	115	108	5.8		~~W1359~~ W1363
7:50	178	187	120	109	5.5		~~X1274~~ X1278
8:05	176	186	103	107	5.5		A Tap 7:31 - 7:35
8:20	176	184	100	101	5.5	W1364	A Charge 7:37 - 7:56
8:35	179	188	101	112	5.3		B Charge 7:45 - 7:47
8:50	175	184	109	110	5.3		A Charge 8:31 - 8:33
9:10	174	181	81	104	5.5	X-1279	B Tap 8:47 - 8:50
9:25	171	179	77	78	5.6		B Charge 8:51 - 9:01
9:45	173	174	89	111	5.7		A Charge 8:54 - 8:55
10:05	171	179	101	110	5.7		B Charge 9:43 - 9:45
10:20	169	173	94	110	5.7	W1365	A Tap 9:57 - 10:02 a
10:40	177	185	117	110	5.6	X-1280	Charge 10:05 - 10:13
11:00	172	186	95	111	5.0		B Tap 10:32 - 10:36
11:20	173	181	87	115	5.4		B Charge 10:38 - 11:04
							A Charge 10:54 - 10:56
							Tapped W1365 @ 11:45 am

a) Prior to tap, cave in around electrodes - high smoke in Bldg

End 11:20

KENTUCKY ELECTRIC STEEL
BAGHOUSE TEST PROCESS MONITORING FORM

Date 5/12/05 Test #3 Start ~~12:15~~ 12:19

Time	Baghouse Fan Amperage A	B	C	LMF	Baghouse Pressure Drop, in. WG	Damper Positions (Describe)	Notes (Heat No. and time; Charge and Tap Times)
12:19	169	177	93	110	5.5	All open except cooling air	X-1280
12:35	175	184	97	103	5.7		W-1366
12:52	169	177	105	109	5.5		A Charge 12:31 – 12:33
1:10	176	182	104	108	5.5		B Tap 12:46 – 12:51
1:25	179	186	103	110	5.7	X-1281	Charging B 12:52 – 12:55
1:45	173	181	121	107	5.7		Tapping A 1:27 – 1:32
2:00	173	179	102	109	5.8		Charging A 1:33 – 2:15
2:15	173	182	97	108	5.8		1:41 slip on B, clouds of dust
2:30	166	176	111	107	5.8	~~W-16~~ 2nd W-1367	Charging B 1:46 – 1:53
2:50	172	181	107	106	5.4		Tapping B 2:39 – 2:43
3:10	176	184	102	106	5.4	X-1282	Charging B 2:45 – 3:01
3:25	172	182	86	108	5.5		Charging A 2:47 – 2:49
3:40	168	175	90	110	5.5		Charging B 3:40 – 3:42
4:00	169	177	110	112	5.2		Tapping A 3:48 – 3:52
4:20	172	183	93	114	~~5.2~~ 2nd 5.3	Ladle	Charging A 3:53 – 4:13

3:58 B furnace smoking badly. Cut electricity

4:11 Charging A w/LMF ladle

RUN END 4:20 p.m.

PRODUCTION WORKSHEET

Heats During Tests

Date	Heat No.	Tons	Previous Tap	Time Tap	Operating Time, min	Tons/Hr	
TEST 1							
	X-1269	51.7	NA	14:40	96		Begin operations at 13:40
11-May	W-1355	0		15:11			No cast, completed as W-1357
	X-1270	44.7	14:40	16:45	125		
	W-1356	47.7	15:11	18:33	202		
	X-1271	56.4	16:45	19:25	160		
	W-1357	50	18:33	20:19	197		Return of heat W-1355, add times
	W or A Furnace	97.7	W or A Furnace		399	14.7	
	X or B Furnace	152.8	X or B Furnace		381	24.1	
	Totals	250.5				**38.8**	**tonslhr**
TESTS 2 and 3							
12-May							
	W-1363	48.3	5:51	7:34	103		
	W-1364	52.2	7:34	9:59	145		
	W-1365	52.1	9:59	11:41	102		
	W-1366	55.6	11:41	13:28	107		
	W-1367	46.7	13:28	15:46	138		
	W-1368	50.2	15:46	17:18	205		Return of heat X-1281add times
	X-1278	49.9	6:39	8:46	127		
	X-1279	50.6	8:46	10:31	105		
	X-1280	51.9	10:31	12:47	136		
	X-1281	0	12:47	14:40			No cast, completed as W-1368
	X-1282	50.9	14:40	16:37	117		
	W or A Furnace	305.1	W or A Furnace		800	22.9	
	X or B Furnace	203.3	X or B Furnace		485	25.2	
	Totals	508.4				**48.0**	**tonslhr**

1

KENTUCKY ELECTRIC STEEL
BAGHOUSE TEST PROCESS MONITORING FORM

Date 5/11/00 Start 1:55 p.m.

Heat W1355 X1269

Time	Baghouse Fan Amperage 500 HP West A	East B	C	LMF 6	Baghouse Pressure Drop, in. WG	Damper Positions (Describe)	Notes (Heat No. and time; Charge and Tap Times)
1:55	181	185	105	125	5.6	Dampers fully open	~~Dr~~ Melting-Both
2:10	174	177	102	126	5.6	Fresh air dampers closed	Charging A 1:30
2:25	183	191	107	125	6.0		Tap B 1:42-1:47
2:42	177	185	106	129	5.6		Charge B 1:52-2:55
2:57	174	182	100	116	5.6	During Charging Damper on furnace charging closed.	Heat X1270
3:13	179	187	100	117	5.0		Tap A 3:15-3:19
3:29	174	183	122	111	5.2		Charge A 3:21-3:40
3:44	177	181	112	117	5.3		Heat W1356
4:00	169	180	110	113	5.5	others-open	Charge B 3:29-3:35
4:15	179	188	102	115	5.8		Adjusting oxyfuel burner @ ~4:00 pm (High VE's)
4:30	181	190	104	117	6.1		
4:45	175	184	101	112	5.9		Charging A ~~4:~~ 4:22-4:24
5:00	175	181	116	109	5.5		
5:15	178	188	120	113	5.5		Tapping B 4:50-4:55
5:30	181	188	107	110	5.1		Heat X1271
5:45	177	189	111	111	5.3		Charge B 5:00-5:21
6:00	179	188	107	121	5.6		Charge B 5:46-5:49
6:19	173	184	90	98	6.0		Tap A 6:36-6:41
6:30	178	186	92	109	5.8		Charge A 6:43-6:53 w/heat from LMF
6:50	172	180	94	115	5.1		
7:15	180	188	111	111	5.3		Tap B 7:29-7:33

a) Also, Front end loader moving slag @ end of caster. Lime dust.

7:35 181 189 119 108 5.40 -

Time End 19:35

Appendix C

Production Heat Sheets
(Privileged and Confidential)

Kentucky Electric Steel

P.O. Box 3500
Ashland KY 41105-3500

May 22, 2000

Dear Fred:

Here is the Raw Data you may need for our report..

Sincerely,

Eddie Hall

Eddie Hall
Supervisor of Safety and Environmental Affairs

DATE	5-12-00
SHIFT	11-7
SUPERVISOR	[illegible]

MELTER'S LOG

Additional Comments:

	HEAT #	GRADE	TIME (minutes) TAP/CHG	2nd CHG	3rd CHG	TAP / TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF. @ TAP	# CAST (Ex: 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTER DELAYS	
1	W-1359	930	17.5	5		120.0	0:02	58.8	43.7	8	3	55.0			19.0	KW 22830 13003 35201
2	X-1274	930	1 2	2		123.5	5:57	30.0	54.3	10	3	41.0		Sub No. 3 Fleet	13.8	KW 19710 15431 40365
3	W-1360	110	12.8	5		120.3	2:00	57.5	53.0	2	3	55.2			16.3	KW 21480 15035 36390
4	X-1275	110	34.5	2		128.5	3:05	56.0	34.0	7	3	51.1		Repaired bottom E/4 7th in fleet 4 sub fleet	19.0	KW 221[illegible]2 10[illegible] 31593
5	W-1361	110	4.5	15		123.0	4:02	56.8	61.9	8	3	54.1		Sub 13 3rd fleet	11.5	KW 21560 13152 34120
6	X-1276	110	19.0	2		116.3	5:06	52.5	44.8	10	4	46.7		Return to Tap Slag [illegible]	35.5	KW 20830 15538 49047
7	W-1362	110	12.8	5		108.8	5:51	52.0	44.0	2	4	50.0			23.0	KW 20670 12303 35395
8	X-1277	110		2						7	4	43.2				KW 19820 13271 47462
9																
10																
11																

DATE	5-12-99
SHIFT	7-3
SUPERVISOR	H.W. Salyers

MELTER'S LOG

Additional Comments: "A" FURNACE DOWN WAITING ON 1ST CHARGE FROM 13:35 TO 14:11

	HEAT #	GRADE	TIME (minutes) TAP/ CHG	2nd CHG	3rd CHG	TAP / TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF. @ TAP	# CAST (Ex: 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTER DELAYS	
1	W-1363	110	18	2		101.0	07:34	53.3	36.2	#8	3	48.8	T/A		23.8	KW 20700 G 13819 O 34991
2	X-1278	110	19	2		131.5	8:46	12.0	46.8	#10	3	49.9			18.3	K 24870 G 16550 O 51670
3	W-1364	110	21	4	2	147.3	9:59	59.8	65.5	#7	3/4	52.2			27.0	K 22620 G 19024 O 61077
4	X-1279	110	6	2		105.0	10:31	50.2	42.5	#2	4	50.6			19.5	K 19630 G 13143 O 34662
5	W-1365	110	12			102.8	11:41	57.8	34.0	#8	4	52.1			0.5	K 21820 G 17203 O 51543
6	X-1280	110	29	2	–	135.5	12:47	63.8	41.2	#10	4	51.9		GUN B-4 HEAT SET #2 ELECT.	18.8	K 23630 G O
7	W-1366	110	13	2	–	104.8	13:28	54.0	59.5	#7	4/3	55.6			23.3	K 20910 G O
8	X-1281	110	7	9	2	113	14:40	62.5	42.3	#2	+	–		Set 1-3 elect NO CAST		K 21460 G O
9	W-1367	110														
10	X-1282	110														
11																

WHITE - CLERK • CANARY - MELT SHOP OFFICE • PINK - FURNACE PULPIT

DATE	5-12-00
SHIFT	3-11
SUPERVISOR	M. NICHOLS

MELTER'S LOG

Additional Comments: LMF down after W-1368. Replace 2 heat shields. Ship straight to caster

	HEAT #	GRADE	TIME (minutes) TAP/CHG	2nd CHG	3rd CHG	TAP ▮ TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF @ TAP	# CAST (Ex 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTEROELAYS
1	W-1367	110	45.5	a	–	140.5	15:46	58.5	82.0	8 452	4	46.7	T/A		21,900 PD 15.3
2	X-1282	110	17.3	2	–	123.0	16:37	58.8	64.2	10 461	4	50.9		TA B4 tap to no cast	K 21,760 PD 19.8
3	W-1368	110 1018 50	39.5	Return Heat		93.0	17:18	14.8	68.5	2 451				Return X-1281, came through plates.	K 5,010 PD 1.3
4	X-1283	"				140.8	19:00	63.0	77.8	8 459	4	61.1		1st heat straight to caster.	K 22,400 PD 1.5
5	W-1369	"	9.0	2	a	157.0	19:55	63.8	93.2	10 461	No cast	→		slide gate won't shut off hold over fce.	K 22,740 PD 10.0
6	X-+!IT~	"		2	–										K PD
7	W-1370														K PD
8															
9															
10															
11															

WHITE - CLERK • CANARY - MELT SHOP OFFICE • PINK - FURNACE PULPIT

DATE	5-11-00
SHIFT	11-7
SUPERVISOR	

MELTER'S LOG

Additional Comments: [illegible] 23:12 - 23:25 Adj Burner

Bottom 10" low w-7 furnace

	HEAT #	GRADE	TIME (minutes) TAP/CHG	2nd CHG	3rd CHG	TAP / TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF @ TAP	# CAST (Ex: 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTER DELAYS	
1	X-1264	112	24	2		106.5	23:20	51.5	32.8	#6	4/3	44.5		Fly Furnish	PD	KW 19360
																G 14473
															13.5	O 42862
2	W-1350	921		2		144.0	0:51	37.8	23.5	#10	3	48.6		S.t #1 & 2 Electrode		KW 22310
																G 11899
														88 Carbon Bottom 10" LOW	14.8	O 48478
3	X-1265	921	8	2		117.8	1:17	56.5	41.2	#8	3	47.4				KW 21370
																G 13770
															20.5	O 40853
4	W-1351	120	10	2		92.3	2:23	57.5	37.3	#6	3	51.7				KW 22350
																G 12887
															4.5	O 41597
5	X-1266	413	20	2		117.3	3:14	56.5	40.0	#10	3	53.0		Delay 1st Charge Changing W Furnace		KW 21660
																G 17151
															23	O 47644
6	W-1352	413	25	3		114.5	4:16	55.0	32.0	#8	3	49.7		Repaired Bottom B-4 this heat		KW 21610
																G 13790
															8.8	O 38751
7	X-1267	413	15	2		115.0	5:08	53.5	47.5	#2	3	46.3				KW 20910
																G 15773
															22.5	O 41884
8	W-1353	147	5	5		110.8	6:06	56.0	41.8	#6	3	41.2				KW 21360
																G 13338
															21.0	O 38298
9	X-1268	147		2		107.8	6:55	52.5	41.8	#10	3	44.4				KW 19490
																G 16567
															26	O 41876
10																
11																

DATE	5-11-00
SHIFT	7-3
SUPERVISOR	H.W. SALYERS

MELTER'S LOG

Additional Comments: ① MAIN FAN DOWN FROM 0800 TO 13:40.

	HEAT #	GRADE	TIME (minutes) TAP/ CHG	2nd CHG	3rd CHG	TAP / TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF. @ TAP	# CAST (Ex 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTERDELAYS	
1	W-1354	147	7.9	2	–	120.0	8:04	58.3	54.2	# 8	3/2	38.0			14.3	E 22090 L 13245 O 53667
2	X-1269	147	25	2	–	4713	14:40	678	4615	2	3	51.7	T/A	Sa 1-2	7.0	K 25830 G 27,371 O 63,014
3	W-1355	147														K G O
4																E G O
5																
6																
7																
8																
9																
10																
11																

WHITE - CLERK • CANARY - MELT SHOP OFFICE • PINK - FURNACE PULPIT

DATE	5-11-00
SHIFT	3-11
SUPERVISOR	Nichols

MELTER'S LOG

Additional Comments: Burners in hold on X-1270 20,400 KWH-2846°
No thermocouples for North preheater. Put gas pipe in ladle.

	HEAT #	GRADE	TIME (minutes) TAP/ CHG	2nd CHG	3rd CHG	TAP / TAP	TIME of TAP	POWER (minutes) ON	OFF	LAG FCE DIFF. @ TAP	# CAST (Ex: 4/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING CASTER DELAYS	
1	W-1355	147 1095 Mod	9.7	2	–	430.0	15:11	55.8	374.2	8 459	NO cast	0		wouldn't open, return to fce.	K 21,230 G 27,371 O 63,014	PD 12.8
2	X-1270	756 6150 H	6.3	9	–	125.3	16:45	67.8	57.5	10 461	3/4	44.7	T/A		K 26,410 G 11,984 O 32,715	PD 13.3
3	W-1356	521 4150	25.8	2	–	201.8	18:33	68.3	133.5	2 451	4	47.7		T.A. B4 Tap.	K 26,800 G 14,289 O 37,839	PD 25.5
4	X-1271	278 15B28 SQ	22.8	2	–	160.8	19:25	58.3	102.5	7 459	4	56.4		Gun fce. 9,500 lbs. in slag pot after this heat.	K 23,090 G 12,961 O 33,255	PD 2.5
5	W-1357	147 1095 Mod	30.0	Return Heat		106.5	20:19	11.3	95.2	8 461	4	50.0		Return W-1355 wouldn't open.	K 4,160 G 5,883 O 12,233	PD 0
6	X-1272	412 A572GR60	7.5	5	–	99.3	21:05	66.8	32.5	10 451	4	48.9		10,500 lbs. in pot.	K 23,150 G 9,757 O 38,255	PD 0
7	W-1358	408 A572GR50	0.7	2	–	99.0	21:56	57.0	42.0	2 459				8,500 lbs. in pot.	K 21,520 G 13,594 O 40,926	PD 19.3
8	X-1273	"		2	–	98.3	22:58	57.0	41.3	7 461					K 18,560 G 15,03[illegible] O 50,5[illegible]	PD 17.0
9																
10																
11																

Kentucky Electric St[illegible], Inc.

EAF / LMF Cc[illegible]bined Heat Sheet

EAF Melting Log (time)

	Stan	Stop	Scrap Wt.
Last Tap	———	19:35	———
1st Chg.	19:40	20:05	75,000
2nd Chg.	20:10		40,000
3rd Chg.			
Tapping	21:05	21:10	
Tap Temp.	3030	Totals:	
Total Time of Heat.			

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	21:21
Current Heat - Treatment Start	21:28
Preparation Time	
Current Heat - Treatment Stop	22:16
Total Time of Heat	47:43

Reason for Return to LMF / Furnace	
Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	23050	3075
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	18	
Wall Heat	18	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			[illegible]		
Cal C			[illegible]		
Lime	4000		[illegible]		
DoloLime					
Ni		200			
Cal Sil					

Alloys Added (lbs.) 22:20

Time	Furnace	Ladle	LMF	LMF
Carbon	4-5		40	
75% FeSi		150	25	25
SiMn		1400		
HC FeMn			185	
MC FeMn				100
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	2½ LB
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	21:37	21:50	22:04	22:14	22:15						Final N_2 (ppm):
Temp. (°F)	2845	[illegible]	2910	2908	3012						Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 412 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	~~Al~~ V
Spec.	14	110	20	25	22	35	30	20	06		
Prelim.	7	11	4	55	-	27	10	10	02		
Prelim	9	[illegible]	9	35	22	28	27	13	2	13	065
Prelim	14	103	9	[illegible]	22	28	21	13	2	13	06
Prelim											
Prelim											
Prelim											
Final	~~.15~~	~~1.11~~	~~.011~~	~~.018~~	~~.26~~	~~.30~~	~~.28~~	~~.13~~	~~.03~~	~~.014~~	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI	Grade Code:	555
Final	~~.004~~	~~.066~~	~~.001~~	~~.000~~	~~.000~~	~~.0000~~	~~.0008~~	~~+ .0015~~		Sample Type:	

GRADE A572-GR/60

X-1272
Heat No. X-1272 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5978	5.00X7.00	229	44	48.9	NN-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
712	235	451	10		6	6	5-11-2001	3-11	X-1272

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

[illegible]

Kentucky Electric St l, Inc.

EAF / LMF Cc ıbined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Wt
Last	—	18:35	—
1st Chg.	18:50		
2nd Chg.			
3rd Chg.			
Tapping	20:20	20:35	
Tap Temp.	2987	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	20:40
Current Heat - Treatment Start	20:42
Preparation Time	
Current Heat - Treatment Stop	21:21
Total Time of Heat	38:06

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
50 tons	

Couldn't get open

Power & Supply Consumption

	At Furnace	At LMF
Power Meter	Amount	21:2
Electrode #1		
Electrode #2		
Electrode #3	21:-	
Lance Sections		
Roof Delta	17	
Wall Heat	17	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal At					
Spar			2-13		
Cal C			4-6		
Lime			200		
DoloLime					
Ni					
Cal Si		4-13			

Alloys Added (lbs.) 21:25

Time	Furnace	Ledle	LMF	LMF
Carbon			200	20
75% FeSi			50	
SiMn				
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	2-13
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	20:15	2052	2106	21:19							Final N_2 (ppm):
Temp. (°F)	2880	2796	2825	2815							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 **Roll No:** 044 **Chemistry:** NA

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	~~Al~~
Spec.	95	57	20	25	17	35	20	15	02		
Prelim.	84	58	11	2	12	21	8	12	02		
Prelim	74	55	14	19	16	21	8	13	2	9	02
Prelim	87	55	15	17	16	21	8	13	2	10	026
Prelim											
Prelim											
Prelim											
Final	.96	.55	.014	.017	.16	.21	.08	.13	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Pl	Grade Code:	147
Final	.004	.006	.026	.000	.000	.0000	.0006	.0013		Sample Type:	555

GRADE 1095 MOD

Heat No. W1357 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5972	5.00X7.00	202	51	50.0	II-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	461	8		35	10	5-11-2000	3-11	W-1357

Remarks:

Kentucky Electric S[illegible], Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Slop	Scrap Wt.
Last Tap		16:56	
1st Chg.	17:20	17:55	75,000
2nd Chg.	17:55		40,000
3rd Chg.			
Tapping	19:30	19:35	
Tap Temp.	3020	Totals:	

Total Time of Heat:

LMF Steel Weight		
Ladle Weight		
Tare Weight	49,000 #	
Steel Weight		

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	19:55
Current Heat - Treatment Start	20:---
Preparation Time	
Current Heat - Treatment Stop	20:40
Total Time of Heat	38:12

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	23090	2425
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	17	
Wall Heat	17	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
slag Cond.		1000			
Cal Al					
Spar			3-B		
Cal C			K-C		
Lime	4000		400		
DoloLime					
Ni					
Cal Sil					

20:40 Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			140	40
75% FeSi		10		85
SiMn		1600		
HC FeMn			20	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)	
Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	10 LB
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1819	19:27	20:14	20:17							Final N_2 (ppm):
Temp. (°F)	2815	2966	2830	2855							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 278 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	31	125	20	25	22	35	20	20	04		
Prelim.	17	17	4	47	-	19	8	13	02		
Prelim	14	107	12	36	24	19	8	14	2	10	
Prelim	36	121	13	29	22						
Prelim											
Prelim											
Prelim											
Final	.30	1.22	.013	.025	.24	.19	.08	.16	02	010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	555
Final	.004 GRADE	.002	.000 15B28 SQ	.000	.000	.0018	.0011	.0013		Sample Type:	

Heat No. X1271 Product Code 23K

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5975	5.00X7.00	228	47	52.0	DD3	4	4.4
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gale No.	Heels on Ladle	Heals on Plug	Date	Shift	Heat Number
912	435	459	7		33	1	5-11-2000	3-11	X-1271

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Run Furnace

Kentucky **Electric S' ıl, Inc.**

EAF / LMF C(ıbined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	15:15	———
1st Chg.	15:43	16:21	000
2nd Chg.	17:23		53,000
3rd Chg.			
Tapping	18:30	18:35	
Tap Temp.	3040	Totals:	

Total Time of Heat

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49.000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	19:05
Currant Heat -Treatment Start	19:07
Preparation Time	
Current Heat - Treatment Stop	19:55
Total Time of Heat	48:25

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	21,800	2725
Electrode #1		
Electrode #2		
~~Electrode #3~~ Electrode		
Lance Sections		
Roof Della	16	
Wall Heat	16	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			3-B		
Cal C			4-C		
Lime	4000		900		
DoloLime					
Ni					
Cal Sil					

20.10 Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B	4-B	70	
75% FeSi		200		25
SiMn		900		
HC FeMn				
MC FeMn				
FeCr		1000	25	
Moly Oxide		9-C		
Capper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	3-B
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	17:05	18:17	18:49	19:18	19:26	19:30	19:44	19:52	19:55		Final N_2 (ppm):
Temp. (°F)	2863	2815	2899	2789	2849	2906	2841	2874	2882		Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 521 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	~~Al~~ Nb
Spec.	50	88	20	25	22	30	20	95	20		
Prelim	38	20	18	55	1	18	4	14	02		
Prelim	43	90	23	36	25	19	9	86	20	10	028
Prelim	30	20	24	19	23	19	9	92	20	9	028
Prelim											
Prelim											
Prelim											
Final	.50	.91	+.025	.015	.26	.19	.09	.94	.21	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl	Grade Code:	521
Final	.004	+.007	.029	.000	.000	.0000	.0007	+.0029		Sample Type:	555

GRADE 4150

Heat No. W1356 Product Code 2BI

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5974	5.00X7.00	197	42	40.1	DB3	8	7.6
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	452			17	17	5-11-2000	3-11	W 1356

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Ste)Inc.

EAF / LMF Co bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	14:45	———
1st Chg.	14:55	15:25	80,000
2nd Chg.	15:34		30,000
3rd Chg.			
Tapping	16:45	16:50	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	12:22
Current Heat - Treatment Start	12:25
Preparation Time	
Current Heat - Treatment Stop	19:04
Total Time of Heat	99:34

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	26410	6475
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	46	
Wall Heat	46	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			3-B		
Cal C			4-0		
Lime	4000		900		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		-B	100	70
75% FeSi		200		
Sin		1000		
HC FeMn			100	
MC FeMn				
FeCr		1000	300	150
Moly Oxide				
Copper				

W e Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	
FeB	
FeTi	
FeV	15-B
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	16:15	16:23	16:29	16:43	18:16	18:36	18:46	18:53	19:00		Final N_2 (ppm):
Temp. (°F)	2846	2872	2942	2996	2768	2898	2876	2895	2893		Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 756 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	50	85	20	25	22	30	20	100	06		
Prelim.	19	16	7	48	-	19	7	11	02		
Prelim	39	24	10	15	25	18	9	72	2	8	181
Prelim	48	82	11	12	25	17	9	84	2	9	182
Prelim											
Prelim											
Prelim											
Final	.52	.83	.012	.010	.27	.18	.09	.95	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI		
Final	.004	.185	.001	.000	.000	.0000	.0010	+.0015	4.29	Grade Code:	756
	GRADE		6150H						no message defined	Sample Type:	555

Heat No. X-1270 Product Code 20W

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	0973	5.00X7.00	174	53	44.7	113	0	9.0
B	0		G	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	461	10		5	5	5-11-00	3/11	X-1270

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric St[illegible], Inc.

EAF / LMF Cc[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	Slop	Scrap Wt.
Last Tap			
1st Chg.	11:38	11:37	80000
2nd Chg.	1434		35
3rd Chg.			
Tapping	510	15:[illegible]	
Tap Temp.	3020	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Slop	16:11
Current Heat - Treatment Start	16:13
Preparation Time	
Current Heat - Treatment Slop	17:22
Total Time of Heat	68:52

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	[illegible]t Used At Furnace	At LMF
Power Meter	29.0	[illegible]
Electrode d1		
Electrode d2		
Electrode #3		
Lance Sections		
Roof Delta	15	
Wall Heat	15	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			213		
Cal C			4-C		
Lime	4000		900		
DoloLime					
Ni	[illegible]				
Cal Si		4-B			

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		4-B	300	450X
75% FeSi			115	50
SiMn		500		
HC FeMn			100	100
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	3-13
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow										Rinse Flow:

Temperatures and Times

Time	15:67	16:33	16:53	17:53	18:02	18:04				Final N_2 (ppm):
Temp. (°F)	2961	2154	2818	2844	2812	2813				Final Temp (°F):
Oxygen (ppm)										Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	~~Al~~ NB
Spec.	95	57	20	25	17	35	20	15	02		
Prelim.	10	11	4	39	-	22	7	8	02		
Prelim	46	41	4	19	11	22	7	10	2	9	223
Prelim	70	56	7	16	18	23	3	11	2	14	027
Prelim	88	55	5	13	20	21	7	10	2	9	224
Prelim	88	54	5	11	20	21	7	10	2	9	223
Prelim											
Final	-.00	-.00	.000	.000	-.00	.00	.00	.00	.00	.000	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl		
Final	.000	.000	-.000	.000	.000	.0000	.0000	.0000		Grade Code:	147
										Sample Type:	898

GRADE **1095 MOD** NU CAST

Heat No. W-1355 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5972	5.00X7.00	202	0	0.0		0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	459	8		34	9	5-11-00	3/11	W-1355

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Delay 0805-1345 big blower out on baghouse

Kentucky Electric St[illegible] Inc.

EAF / LMF Co[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	0657	———
1st Chg.	0722	0758	60000
2nd Chg.	11:32		55000
3rd Chg.			
Tapping	14:40	14:45	
Tap Temp.	3071	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	
Current Heat - Treatment Start	14:51
Preparation Time	
Current Heat - Treatment Stop	16:11
Total Time of Heat	79:40

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	25221	21120
Electrode #1	1	
Electrode #2	1	
Electrode #3		
Lance Sections		
Roof Delta	15	
Wall Heat	15	
Thermocouples	1	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond		1000			
Cal Al					
Spar			200		
Cal C			—		
Lime	4000		200		
DoloLime					
Ni	1				
Cal Si		4-B			

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		6-B	400	350
75% FeSi		200		
SiMn		400		
HC FeMn			150	150
MC FeMn				50
FeCr				
Moly Oxide				
Copper				

~ r Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	3-B
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1430	1436	1439	15:05	15:24	15:44	1555	16:01	16:08		Final N_2 (ppm):
Temp. (°F)	2999	2964	3071	2833	[illegible]	2837	2837	2840	2839		Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	NB ~~Al~~
Spec.	95	57	30	25	17	35	20	15	06		
Prelim.	4	7	5	40	0	24	8	6	2	10	
Prelim	83	30	5	10	21	23	6	7	2	10	025
Prelim	84	31	5	21	20	23	8	7	2	10	025
Prelim	80	52	6	12	20	23	6	7	2	10	025
Prelim	91	52	6	11	20	23	6	7	2	10	025
Prelim											
Final	1.01	.57	.007	.010	.21	.23	.08	.08	.02	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl	Grade Code:	147
Final	.004	.004	.026	.000	.000	.0000	.0003	.0016		Sample Type:	555

GRADE 1095 MOD

Heat No. X-1269 Product Code 215

Split	R.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5971	5.00X7.00	213	50	51.7	II-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919	235	114	2		16	16	5-11-00	1/3	X-1269

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Lt # 1st 2 elect. Delay 0758-13:40 scrap crane down + big [illegible] from [illegible] bag house

Kentucky Electric *Steel*, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (ti

	Start	Stop	Scrap Wt.
Last Tap		0608	
1st Chg.	0615	0700	61400
2nd Chg.	0721		54
3rd Chg.			
Tapping	0800	0805	
Tap Temp.	3066	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	825
Last Heat -Treatment Slog	834
Current Heat - Treatment Start	
Preparation Time	5613
Current Heat - Treatment Stop	932
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	27090	2873
Electrode #1		
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	014	
Wall Heat	014	
Thermocouples	3	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar					
Cal C					
Lime	4000				
DoloLime					
Ni					
Cal Si		400			

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		100		
SiMn		300		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	3-13
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time		0746	0756								Final N_2 (ppm):
Temp (°F)	2848	2998	3064								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	48	62	20	25	17	35	20	15	06		
Prelim	19	15	6	54	1	26	8	12	2	10	
Prelim	34	38		32	6						
Prelim	79	54		22	16						
Prelim											
Prelim											
Prelim											
Final	-.90	.55	.008	.015	.23	.25	.07	.14	.02	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl		
Final	.003	.004	.025	.000	.000	.0000	.0003	.0014		Grade Code:	147
										Sample Type:	555

GRADE 1095 MOD

Heat No. W-1354 Product Code 21F

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5969	4.75X8.00	200	36	38.0	11-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919		185	8		52	8	5-11-00	7/3	W-1354

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: LF 3 heat.

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	0510	—
1st Chg.	0580	0603	64700
2nd Chg.	0605		464
3rd Chg.			
Tapping	06:12	0657	
Tap Temp.	3024	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	07:16
Current Heat - Treatment Start	07:19
Preparation Time	6 3031
Current Heat - Treatment Stop	0725
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	19490	1925
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	14	
Wall Heat	14	
Thermocouples	2	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		4000			
Cal Al					
Spar					
Cal C					
Lime	4000				
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			500	
75% FeSi		100	125	
SiMn		350		
HC FeMn			400	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	3-C
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0538	0645									Final N_2 (ppm):
Temp. (°F)	2941	3024									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 Roll No: 044 Chemistry: 5

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	95	57	020	025	17	.35	20	15	06	20	—
Prelim-	7	60	4	49	0	1		9	1	9	
Prelim	11	23		36	18						
Prelim	20	57		18	18						
Prelim											
Prelim											
Prelim											
Final	.92	.56	.006	.014	.22	.22	.07	.11	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Df	Grade Code:	147
Final	.003	.003	.030	.000	.000	.0000	.0007	.0013		Sample Type:	555

GRADE 1095 MOD

Heat No. X-1268 Product Code 21F

Lift	B.O. #	Billet Size	Length	Count	Tons	Stack	*Scrap	Tons
6	9869	4.75X8.00	200	42	44.4	11-5	0	0.0
0	0		0	0	0.0		0	0.0
0			0	0	0.0		0	0.0
0	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gale No.	Heels on Ladle	Hoots on Plug	Date	Shift	Heat Number
913		232	10		4		5-11-00	1/7	X-1268

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	04:20	—
1st Chg.	04:25	05:08	75200
2nd Chg.	05:13		40,1
3rd Chg.			
Tapping	06:03	06:08	
Tap Temp.	30.55	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	06:14
Current Heat - Treatment Start	06:16
Preparation Time	00.31
Current Heat - Treatment Stop	7:14
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21410	2115
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	0/3	
Wall Heat	0/3	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000	60/40		
Cal Al			3-B		
Spar			4-C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.) 20 after

Time	Furnace	Ladle	LMF	LMF
Carbon		8-B 300		
75% FeSi		100	50	
SiMn		300		
HC FeMn			150	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	3-C
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	06:26	06:48									Final N_2 (ppm):
Temp. (°F)	2833	2890									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	95	57	020	025	17	35	20	15	06	20	—
Prelim	23	18	9	47	—	19	7	14	2	8	—
Prelim	57	36		24	21	28					
Prelim	83	48									
Prelim	91	47									
Prelim											
Prelim											
Final	.96	.49	.007	.010	.20	.20	.07	.14	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Df		
Final	.004	.003	.029	.000	.000	.0000	.0005	.0013		Grade Code:	147
										Sample Type:	555

GRADE 1095 MOD

Heat No. W-1353 Product Code 11F

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
	5969	4.75X8.00	200	39	41.2	II-3	0	0.0
	0		0	0	0.0		0	0.0
	0		0	0	0.0		0	0.0
	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	461	6		31	31	5-11-00	II-7	W-1353

Remarks:

entucky Electric *Steel*, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
ast Tap		0315	
st Chg.	0330	0413	71400
nd Chg.	0417		44
rd Chg.			
Tapping	0505	0510	
p Temp.	3055	Totals:	
Total Time of Heat:			

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0512
Current Heat - Treatment Start	0524
Preparation Time	5011
Current Heat - Treatment Stop	0614
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	20900	2450
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	13	
Wall Heat	13	
Thermocouples		2
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000	60/40		
Cal Al			2-B		
Spar			2-C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni		220			
Cal Si					

Alloys Added (lbs.) 17 after

Time	Furnace	Ladle	LMF	LMF
Carbon			40	
75% FeSi		125	30	
SiMn		1300		
HC FeMn			120	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	300
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	3-B
FeS	

Argon Log

rgon Flow											Rinse Flow:

Temperatures and Times

Time	0538	0558									Final N_2 (ppm):
Temp. (°F)	2871	2915									Final Temp (°F):
xygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 413 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	14	110	020	025	22	25	30	20	06	20	—
Prelim.	9	11	4	49	2	22	8	8	2	8	—
Prelim	9	91		28	22		26	V 49			
Prelim	13			17							
Prelim											
Prelim											
Prelim											
Final	.13	1.02	.008	.014	.24	.24	.27	.12	.02	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di		
Final	+.006	.050	.000	.000	.001	.0000	.0013	+.0017		Grade Code:	413
	GRADE		A572-GR/60 CV							Sample Type:	555

Heat No. X-1267 Product Code 12K

Split	B.O. #	Billet Size	Length	Count	Tons	Slack	#Scrap	Tons
A	5982	4.75X8.00	309	42	46.3	II-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ledlemen	Ladle No.	Gale No.	Heels on Ladle	Heels on Plug	Date	Shift	Heat Number
913	215	419	2		15	15	5-11-00	11-7	X-1267

Remarks:

entucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (tim

	Start	Stop	Scrap Wt
Last Tap	—	02:25	—
1st Chg	02:50	03:20	71,200
2nd Chg.	03:23		44
3rd Chg.			
Tapping	04:15	04:20	
ap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	04:21
Current Heat - Treatment Start	04:23
Preparation Time	53:57
Current Heat - Treatment Stop	05:22
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21150	3000
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	012	
Wall Heat	012	
Thermocouples		3
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		[illegible]	60/40		
Cal Al			3-B		
Spar			3-C		
Cal C Lime					
	4000		300		
DoloLime					
Ni	1	220		1 [illegible]	
Cal Sil					

Alloys Added (lbs.) — 25 after

Time	Furnace	Ladle	LMF	LMF
Carbon			30	
75% FeSi		125		
SiMn		1300		
HC FeMn			100	
MC FeMn				
FeCr				
Moly Oxide				
Capper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeB	
FeTi	
FeV	
Nitrovan	3-B
FeS	

Argon Log

Argon Flow										Rinse Flow

Temperatures and Times

Time	04:33	04:51	05:09							Final N_2 (ppm):
Temp (°F)	2875	2916	2880							Final Temp (°F):
Oxygen (ppm)										Final O_2 (ppm):

Chemistry and Billet Information

Practice: 413 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	14	110	020	025	22	25	30	20	06	—	
Prelim	6	9	1	70	—	28	8	8	2	12	—
Prelim	10	96		23	24		18	V54			
Prelim	14	102		14	22		27	V53			
Prelim											
Prelim											
Prelim											
Final	.15	1.05	.007	.010	.22	.28	.27	.10	.02	.014	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl		
Final	+.004	.054	.000	.000	.000	.0000	.0010	+.0015		Grade Code:	413
	GRADE		A572-GR/60 CV							Sample Type:	555

Heat No. W-1352 Product Code 22K

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5982	4.75X8.00	209	45	49.7	II-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	232	8		32	32	5-11-00	11-7	W-1352

Remarks: High Bottom

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	01:20	—
1st Chg.	01:40	02:20	73260
2nd Chg.	02:22		42
3rd Chg.			
Tapping	03:10	03:15	
Tap - e	3050	Totals:	

Total Time of Heat:

Car Number		
Last Heat - Treatment Stop	03:18	
Current Heat - Treatment Start	03:00	
Preparation Time	60:22	
Current Heat - Treatment Stop	04:21	
Total Time of Heat		

LMF Steel Weight		
Ladle Weight		
Tare Weight	49.000 #	
Steel Weight		

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	2016	8775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	12	
Wall Heat	12	
Thermocouples		2
Samplers		1
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000	60/40		
Cal Al			3-B		
Spar			4-C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni		220			
Cal Si					

Alloys Added (lbs.)

2.5 after

Time	Furnace	Ladle	LMF	LMF
Carbon			40	
75% FeSi		125	30	
SiMn		1300		
HC FeMn			125	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	3.3
FeS	

Argon Log

Argon Flow										Rinse Flow:

Temperatures and Times

Time	03:30	04:08								Final N_2 (ppm):
Temp. (°F)	2928	2913								Final Temp (°F):
Oxygen (ppm)										Final O_2 (ppm):

Chemistry and Billet Information

Practice: 413 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	14	110	020	025	22	25	30	20	06		
Prelim.	9	11	3	45	—	21	9	9	2	9	
Prelim	9	91		29	22		28	.75			
Prelim											
Prelim											
Prelim											
Prelim	.14	1.01	.007	.011	.21	.21	.29	.10	.02	.010	
Final											

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	
	.004	+.075	.000	.000	.000	.0000	.0010	+.0014		
Final	GRADE		A572-GR/60 CV							

Grade Code: 413
Sample Type: 555

Heat No. X-1766 Product Code 22K

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	8900	4.75X8.00	207	45	49.7	II-3	3	3.3
B			0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	461	10		3	3	5-11-00	11-7	X-1766

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined **Heat** Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		00:55	
1st Chg.	01:05	01:25	70,200
2nd Chg.	1130		45
3rd Chg.			
Tapping	02:20	02:25	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	02:25
Current Heat - Treatment Start	02:28
Preparation Time	47:47
Current Heat - Treatment Stop	03:18
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	22390	2000
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	011	
Wall Heat	011	
Thermocouples		3
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond		4000	60/40		
Cal Al			2-B		
Spar			2-C		
Cal C					
Lime	4000		300		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.) 23 after

Time	Furnace	Ladle	LMF	LMF
Carbon			110	30
75% FeSi		250		
SiMn		100		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Capper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	350
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	02:44	02:49	03:02								Final N_2 (ppm):
Temp. (°F)	2931	2963	2903								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 120 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	.34	.70	0.20	0.25	.22	.35	.20	.14	.06	.20	
Prelim.	17	15	14	57	—	20	7	14	2	8	
Prelim	22	63		19	28						
Prelim	30			15							
Prelim											
Prelim											
Prelim											
Final	.33	.64	.009	.012	.29	.20	.07	.14	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	120
Final	.005	.003	.000	.000	.000	.0000	.0021	.0013		Sample Type:	555

GRADE 1035 SQ

Heat No. W-1351 Product Code 220

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	Scrap	Tons
A	5976	4.75X8.00	320	34	40.9	II-3	2	10.8
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0			0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on -;'~;a	Date	Shift	Heat Number
973	215	419	6		30	30	5-11-00	II-7	W-1351

Remarks:

entucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	23:20	———
1st Chg.	23:43	00:19	62,400
2nd Chg.	00:23		53
3rd Chg.			
Tapping	01:15	01:20	
Tap Temp.	3035	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	01:22
Current Heat - Treatment Start	01:25
Preparation Time	60:18
Current Heat - Treatment Stop	02:35
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21710	31:25
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	611	
Wall Heat	011	
Thermocouples		4
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000	60/40		
Cal Al			2-B		
Spar			3-0		
Cal C					
Lime	4,000		300		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			100	30
75% FeSi		250	40	35
SiMn		700		
HC FeMn			290	
MC FeMn				
FeCr	—			
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	01:35	01:47	02:17	02:24							Final N_2 (ppm):
Temp. (°F)	2915	2925	2892	2929							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 921 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	19	80	025	030	22	35	20	20	06	20	—
Prelim.	6	8	5	37	—	20	6	7	1	8	—
Prelim	7	52		28	19						
Prelim	16	67		21	20						
Prelim											
Prelim											
Prelim											
Final	.20	.68	.007	.013	.22	.20	.06	.10	.01	.008	

Element	Al	V	Nb	Ti	Zr	B	Sn	Zn	Di	Grade Code:	921
Final	.003	.002	.000	.000	.000	.0000	.0014	.0013		Sample Type:	555

GRADE A36

Heat No. X-1265 Product Code 20C

Split	R.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5977	4.75X8.00	244	41	47.4	00-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Molter	LMF Operator	Ladleman	Ladle No	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	232	8		31	31	5-11-00	11-7	X-1265

Remarks:

entucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
ast Tap	———	22:25	———
st Chg.	22:42	23:28	83,000
nd Chg.	23:35		32
rd Chg.			
Tapping	00:50	00:55	
p Temp.	3055	Totals:	
Total Time of Heat:			

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	00:21
Current Heat - Treatment Start	00:58
Preparation Time	00:15
Current Heat - Treatment Stop	01:23
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	15410	1700
Electrode #1	1	
Electrode #2	1	✓
Electrode #3		✓
Lance Sections		
Roof Delta	010	
Wall Heat	010	
Thermocouples		✓
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000	60/40		
Cal Al			3-B		
Spar			3-C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni	1				
Cal Sil					

25 after Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon Carbon				
75% FeSi		250	25	
SiMn		650		
HC FeMn			250	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

rgon Flow											Rinse Flow:

Temperatures and Times

Time	01:05	01:19									Final N_2 (ppm):
Temp. (°F)	2913	2909									Final Temp (°F):
xygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 921 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	19	80	025	030	22	25	20	20	06	20	—
Prelim.	81	37	26	37	2	22	8	19	2	13	—
Prelim	30	17	4	23	—	18	6	11	1	7	—
Prelim	20	51		12	23						
Prelim											
Prelim											
Prelim											
Final	.23	.69	.006	.006	.26	.20	.07	.12	.02	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Cl
Final	.004	.003	.000	.000	.000	.0000	.0015	.0012	
	GRADE		A36						

Grade Code:	921
Sample Type:	555

Heat No. W-1350 Product Code 20C

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	Scrap	Tons
A	5977	4.75X8.00	219	42	48.6	00-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	461	10		2	7	5-11-00	11-7	W-1350

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Set A-B electr / LMF at 2 & 3 electrode

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (tim

	Start	Stop	Scrap Wt.
st Tap	—	21:35	—
t Chg.	21:57	22:33	15,000
d Chg	22:35		35,000
d Chg.			
apping	23:15	2320	
Temp.	3050	Totals:	
Total Time of Heat:			

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	23:22
Current Heat - Treatment Start	23:26
Preparation Time	55:13
Current Heat - Treatment Stop	00:21
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used: At Furnace	At LMF
Power Meter	18830	2775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	610	
Wall Heat	010	
Thermocouples		2
Samplers		2
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000	60/40		
Cal Al			3-B		
Spar			3-C		
Cal C					
Lime	9000		300		
DoloLime					
Ni					
Cal Si					

20 after Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B		100	30
75% FeSi		200	75	
SiMn		400		
HC FeMn			150	100
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	23:36	00:20									Final N_2 (ppm):
Temp. (°F)	2927	2950									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 12 Roll No: 44 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	20	55	20	20	18	35	20	20	06		
Prelim.	10	11	4	35	—	21	7	10	2	7	
Prelim	7	36		26	12						
Prelim	16	46		18	16						
Prelim											
Prelim											
Prelim											
Final	.19	.56	.004	.010	16	.20	.06	II	01	007	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Pl
Final	.003	.000	.000	.000	.000	.0000	.0010	.0010	

Grade Code: 112
Sample Type: 555

GRADE 1020 SQ

Heat No. X-1264 Product Code 20C

Split	B.O. #	Billet Size	Length	Count	Tons	Stack #	Scrap	Tons
A	5970	4.75X8.00	216	39	44.5	QQ-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No	Gate No	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
973	215	419	6		30	30	5-11-00	11-7	X-1264

Remarks:

entucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet;

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	20:00	—
1st Chg.	21:10	21:47	98,000
2nd Chg.	21:49		39,000
3rd Chg.			
Tapping	22:20	22:25	
Tap Temp.	3120	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	22:34
Current Heat - Treatment Start	22:37
Preparation Time	45:17
Current Heat - Treatment Stop	23:22
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	19310	2150
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	069	
Wall Heat	009	
Thermocouples		2
Samplers		1
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-13		
Cal C			4-2		
Lime	4000		300		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.) 23:25

Time	Furnace	Ladle	LMF	LMF
Carbon	4-0		20	
75% FeSi		200		
SiMn		1100		
HC FeMn			150	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon

Argon Flow											Rinse Flow:.=

Temperatures and Times

Time	22:15	22:46	22:57	23:01						Final N_2 (ppm):
Temp. (°F)	2822	2879	2927	2905						Final Temp (°F):
Oxygen (ppm)										Final O_2 (ppm):

Chemistry and Billet Information

Practice: 490 Roll No: B11 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	14	90	25	15	22	35	20	20	05		
Prelim.	9	13	2	28	-	19	7	10	00		
Prelim	12	80		18	2.5						
Prelim											
Prelim											
Prelim											
Prelim											
Final	.13	.91	.006	.012	26	20	07	.13	.02	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI		
Final	.004	.002	.000	.000	.000	.0000	.0010	.0013		Grade Code:	490
										Sample Type:	555

GRADE SAE Y45 GRA

Heat No. W-1349 Product Code 993

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5968	4.75X8.00	177	54	50.5	HH-2	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	461	2		14	14	5-10-2000	3-11	W-1349

Remarks:

Kentucky Electric Steel Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	1249	—
1st Chg.	1256	1342	64000
2nd Chg.	1351	1405	32440
3rd Chg.	1407		19
Tapping	14:36	14:41	
Tap Temp.	2945	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	14:43
Current Heat - Treatment Start	14:[illegible]
Preparation Time	
Current Heat - Treatment Stop	15:34
Total Time of Heat	48:4[illegible]

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21800	2875
Electrode #1	1	
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	27	
Wall Heat	27	
Thermocouples	2	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs) — 15:40 — Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF	LMF	Time	Furnace	Ladle	LMF	LMF	Wire Added (ft)	
Slag Cond.		1800				Carbon			60	10	Sulfur	
Cal Al						75% FeSi		250	75	50	Carbon	
Spar			9-B			SiMn		600			Cal Sil	150
Cal C			4-C			HC FeMn			150	200	FeCb	
Lime	4000		700			MC FeMn					FeB	
DoloLime						FeCr					FeTi	
Ni						Moly Oxide					FeV	
Cat Sil						Copper					Nitrovan	
											FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1431	1445	14:44	15:05	1532						Final N_2 (ppm):
Temp. (°F)	2880	2945	2861	2914	2915						Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	90	20	25	22	35	20	15	06		
Prelim.	8	8	12	49	0	27	7	10	1	11	
Prelim	8	44	10	44							
Prelim	15	53	10	44	19	25	7	10	1	10	
Prelim											
Prelim											
Prelim											
Final	-.00	-.00	.000	.000	-.00	.00	.00	.00	.00	.000	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.000	.000	.000	.000	.000	.0000	.0000	.0000	NO CAST	Sample Type:	898

GRADE 1018 SQ

Product Code 30X

Heat No. X1281 Split	D.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5989	5.00X7.00	175	0	0.0		0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

WOULD NOT OPEN!

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919	235	114	2		22	22	5-12-00	2/3	X-1281

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: 50 x 1.5 slot.

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	17:20	———
1st Chg.	17:37	18:23	55,000
2nd Chg.	18:25	18:43	46,000
3rd Chg.	18:45		
Tapping	19:55	20:00	
Tap Temp.	3040	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	
Current Heat - Treatment Start	
Preparation Time	
Current Heat - Treatment Stop	
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	22040	
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections	29	
Roof Delta	29	
Wall Heat		
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar					
Cal C					
Lime	4000				
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		2-13		
75% FeSi		250		
SiMn		900		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Capper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	19:10	19:37									Final N_2 (ppm):
Temp. (°F)	2906	2863									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	3.5	20	15	02		
Prelim.	14	19	6	30	-	26	7	11	01		
Prelim	13	19	4	30	-	25	7	10	01		
Prelim											
Prelim											
Prelim											
Prelim											
Final	-.00	-.00	.000	.000	-.00	.00	.00	.00	.00	.000	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di
Final	.000	.000	.000	.000	.000	.0000	.0000	.0000	

Grade Code: 110
Sample Type: 898

NO CAUT

GRADE 1018 SQ

WOULD NOT SHUT OFF!

Heat No. W1369 Product Code 32W

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5991	5.00X7.00	221	0	0.0		0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ledleman	Ladle No.	Gate No.	Heats on Ladle	Heats Ur Aug	Date		Je
912		461	10		12	12	5-12-2000	3-71	W-1369

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Delay Electrode wont slip 17:45

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	16:45	—
1st Chg.	16:54	17:23	70,000
2nd Chg.	17:25		35,000
3rd Chg.			
Tapping	19:00	19:05	
Tap Temp.	3055	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	
Current Heat - Treatment Start	
Preparation Time	
Current Heat - Treatment Stop	
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter		
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	219	
Wall Heat	229	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar					
Cal C					
Lime	4000				
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	-13			
75% FeSi		2500		
SiMn		1000		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	18:19	18:35									Final N_2 (ppm):
Temp. (°F)	2921	2920									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	3.5	20	15	06		
Prelim.	6	9	9	35	-	22	7	9	01		
Prelim	5	8	6	32	-	22	7	8	01		
Prelim											
Prelim											
Prelim											
Prelim											
Final	-.15	.61	.008	.027	.26	.23	.07	.08	.01	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl		
Final	.003	.000	.000	.000	.000	.0000	.0000	.0012		Grade Code:	110
										Sample Type:	555

GRADE 1018 SQ

Heat No. X1283 Product Code 32W

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5991	5.00X7.00	221	57	61.1	DD1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912		459	8		41	16	5-12-2000	3-11	X-1283

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Delay smoke

Kentucky Electric Steel, Inc.

EAF / LMF Com'bined Heat Sheet

EAF Melting Log (time)

	Start	Slop	Scrap Wt
Last Tap	—	15:50	—
1st Chg	16:14		
2nd Chg			
3rd Chg			
Tapping		17:20	
Tap Temp	3020	Totals:	

Total Time of Heat.

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49.000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Slop	17:37
Current Heat - Treatment Start	17:51
Preparation Time	
Current Heat - Treatment Stop	18:17
Total Time of Heat	29:1

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
1 Heat	
Slide gate	

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	5016	177
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	28	
Wall Heat	28	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond		1000			
Cal Al					
spar			21-13		
Cal C			42		
Lime			100		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B			
75% FeSi		366	50	
SiMn		200		
HC FeMn				
MC FeMn			200	
FeCr				
Moly Oxide				
Copper				

Wire Added (n)

Sulfur	
Carbon	
Cal Sil	50
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	16:38	18:02	18:45								Final H_2 (ppm):
Temp. (°F)	2946	2975	2920								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Info

Practice: 110 **Roll No:** 144 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim.	15	40	14	39	2	26	7	13	01		
Prelim	16	49	15	29	19	26	7	14	1	4	
Prelim	17	65	14	50	20	36					
Prelim											
Prelim											
Prelim											
Final	.17	.65	0 1	.017	.20	25	.07	.14	.01	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl	Grade Code:	110
Final	.004	.001	.000	.000	.000	.0000	.0011	.0012		Sample Type:	555

GRADE 1018 SQ

Heat No. W1368 Product Code 230

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5990	5.00X7.00	167	62	50.2	EE1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Numbe
912	[illegible]	451	2		23	23	5-12-3	3-1	W-1368

Document No. MS-013 Revision Date: 04-19-1999 Revision Level. F

Remarks:

Kentucky Electric Steer, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	14:41	—
1st Chg.	14:58	15:38	72,000
2nd Chg.	15:40		25,000
3rd Chg.			
Tapping	16:40	16:42	
Tap Temp	3 0	Totals	

Total Time of Heat.

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat " Treatment Stop	16:50
Current Heat - Treatment Start	16:50
Preparation Time	
Current Heat - Treatment Stop	17:39
Total Time of Heat	47:16

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21530	2275
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	28	
Wall Heat	28	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace ~~and Ladle~~

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-19		
Cal C			1-2		
Lime	4000		900		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			80	20
75% FeSi		250	100	25
SiMn		700		
HC FeMn			900	
MC FeMn				60
FeCr				
Moly Oxide				
Copper				

Wire Added (it)

Sulfur	
Carbon	
Cal Si	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	16:25	16:52	17:08	17:18	17:24	17:31	17:38				Final N_2 (ppm):
Temp. (°F)	2800	3005	2920	2908	2920	2901	2920				Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 64 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim.	7	8	22	40	–	21	2	10	01		
Prelim	5	[illegible]	[illegible]	35	15	21	–	10	1	?	
Prelim	14	63	23	25	20	21					
Prelim											
Prelim											
Prelim											
Final	.16	.66	.023	.016	.21	.22	.06	.11	.01	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.004	.004	.000	.000	.000	.0000	.0009	.0012		Sample Type:	555

GRADE 1018 SQ

Heat No. X-1282 Product Code 230

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5989	5.00X7.00	175	60	50.9	EE1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	235	441	10		11	11	5-12-2000	3-11	X-1282

Remarks:

Kentucky Electric St..., Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	1328	—
1st Chg.	14:15	14:45	80 370
2nd Chg.	14:47		35
3rd Chg.			
Tapping	15:45	15:50	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	[illegible]
Current Heat - Treatment Start	15:54
Preparation Time	
Current Heat - Treatment Stop	[illegible]
Total Time of Heat	26:37

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21230	2250
Electrode #1		✓
Electrode #2		✓
Electrode #3		✓
Lance Sections		
Roof Delta	27	
Wall Heat	27	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			13		
Cal C			[illegible]		
Lime	4000		[illegible]		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				20
75%FeSi		950	50	25
SiMn		700		
HC FeMn			125	
MC FeMn				30
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	15:22	15:29	15:42	16:02	[illegible]	[illegible]					Final N_2 (ppm):
Temp. (°F)	2847	2941	2956	2959	2909	[illegible]					Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 0214 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	30	15	06		
Prelim.	11	15	6	39	-	28	7	12	01		
Prelim	8	57	9	30	19	28					
Prelim	14	6	8	20	19	23	7	14	1	1	
Prelim											
Prelim											
Prelim											
Final	.17	.68	.009	.010	.20	.28	.07	.15	.01	.014	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.004	.002	.000	.000	.000	.0000	.0009	.0012		Sample Type:	535

GRADE 2018 SQ

Heat No. W1367 Product Code 230

Split	B.O. #	Billet Size	Length	Count	Tons	Stack #	Scrap	Tons
A	5989	5.00X7.00	175	55	46.7	EE-1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919	[illegible]	452	8		40	15	5-12-00	3/12	W-1367

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: No Bucket 13:28 - 14:45 [illegible]

Kentucky Electric St , Inc.

EAF / LMF Co bined Meat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		11:43	
1st Chg	11:56	12:32	66301
2nd Chg	1234		49
3rd Chg			
Tapping	13:23	1328	
Tap Temp	3148	Totals	
Total Time of Heat.			

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	13:45
Current Heat - Treatment Start	13:48
Preparation Time	2:31
Current Heat - Treatment Stop	14:03
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	20910	1125
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	26	
Wall Heat	26	
Thermocouples	1	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal A					
Spar			100		
Cal C					
Lime	4000		350		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			80	20
75% FeSi		250		
SiMn		600		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time											
Temp. (°F)	3148										Final N_2 (ppm):
Oxygen (ppm)											Final Temp (°F):
											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: C47 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim	9	10	5	31	0	27	9	13	2	9	
Prelim	11	04		16	21						
Prelim											
Prelim											
Prelim											
Prelim											
Final	.16	.67	.009	.013	.22	.27	.10	.17	.02	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl
Final	.004	.002	.000	.000	.000	.0000	.0012	.0015	

GRADE 1018 SQ

Grade Code: 110
Sample Type: 555

Heat No. M1366 Product Code 30X

Split	No. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5988	5.00X7.00	170	19	15.7	EE1	0	0.0
B	5989	5.00X7.00	175	47	39.5	EE1	0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
911		185	7		38	6	5-12-00	7/3	W-1366

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		1034	
1st Chg.	11:03	1147	68,600
2nd Chg.	11:49		47.
3rd Chg.			
Tapping	12:44	12:49	
Tap Temp.	3023	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1253
Current Heat - Treatment Start	1258
Preparation Time	43:11
Current Heat - Treatment Stop	1345
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	23630	1973
Electrode #1		
Electrode #2	/	
Electrode #3		
Lance Sections		
Roof Delta	36	
Wall Heat	26	
Thermocouples	3	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)						Alloys Added (lbs.)					Wire Added (ft)	
Time	Furnace	Ladle	LMF	LMF	LMF	Time	Furnace	Ladle	LMF	LMF	Sulfur	
Slag Cond.		1000				Carbon			80		Carbon	
Cal Al						75% FeSi		250	100		Cal Si	150
Spar			20			SiMn		600			FeCb	
Cal C						HC FeMn			350		FeB	
Lime	4000		330			MC FeMn					FeTi	
DoloLime						FeCr					FeV	
Ni						Moly Oxide					Nitrovan	
Cal Si						Copper					FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1228	1240									Final N_2 (ppm):
Temp. (°F)	2758	2933	3022								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:** 10 4.11

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim.	8	9	25	54	0	26	8	14	2	11	
Prelim	5	<1		33	22						
Prelim	15	64		24	21						
Prelim											
Prelim											
Prelim											
Final	.17	.69	.020	.017	.25	.25	.08	.14	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code	110
Final	.004	.002	.000	.000	.000	.0000	.0013	.0013		Sample Type	555

GRADE 1018 SQ

Heat No. X-1280 Product Code 30X

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	Scrap	Tons
A	5998	5.00X7.00	170	63	51.9	EE-1	0	0.0
B	0	5.00X7.00	0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919		452	10		10	10	5-12-00	2/3	X-1280

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: [illegible] Set no 2 electrody

Kentucky Electric Ste Inc.

EAF / LMF Cor Sined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		0959	
1st Chg.	1011	1030	60000
2nd Chg.	1055		53
3rd Chg			
Tapping	11:38	1143	
Tap Temp.	3021	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1110
Current Heat - Treatment Start	1111
Preparation Time	4428
Current Heat - Treatment Stop	1255
Total Time of Heat	

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21870	2200
Electrode #1		
Electrode #2		
Electrode 13		
Lance Sections		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49.000 #
	Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Thermocouples		
Samplers		
~~Samplers~~ Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)						Alloys Added (lbs.)					Wire Added (ft)	
Time	Furnace	Ladle	LMF	LMF	LMF	Time	Furnace	Ladle	LMF	LMF	Sulfur	
Slag Cond.		1000				Carbon					Carbon	
Cnl At						75% FeSi		250	100	30	Cal Sil	
Spar			1-13			SiMn		600	300		FeCb	
Cal C						HC FeMn					FeB	
Lime	4000		40			MC FeMn					FeTi	
DoloLime						FeCr					FeV	
Ni						Moly Oxide					Nitrovan	
Cal Sil						Copper					FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1127	1154	11:36								Final N_2 (ppm):
Temp. (°F)	2820	2979	3021								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 0114 **Chemistry:** 1300

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	30	15	06		
Prelim	12	17	18	48	0	29	9	20	2	9	
Prelim	10	52		28	24						
Prelim	14	20		22	24						
Prelim											
Prelim											
Prelim											
Final	.16	.71	.014	.016	.27	.30	.09	+.20	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.004	.001	.000	.000	.000	.0000	.0006	.0014		Sample Type:	555

GRADE 1018 SQ

Heat No. W-1365 Product Code 30X

Split	R.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
	5987	5.00X7.00	197	20	19.1	EE-1	0	0.0
E	5988	5.00X7.00	170	40	33.0	EE-1	0	0.0
C	0		0	3	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ledleman	Ladle No.	Gate No.	Heels on Ladle	Heats on Plug	Date	Shift	Heat Number
919		114	8			13	5-12-00	7/3	W-1365

Document No. MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		0849	
1st Chg.	0905	0931	63,000
2nd Chg.	0955		52
3rd Chg.			
Tapping	10:25	1039	
Tap Temp.	3093	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	
Current Heat - Treatment Start	
Preparation Time	45 52
Current Heat - Treatment Stop	1200
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	19630	2225
Electrode #1		
Electrode #2		
Electrode #3		✓
Lance Sections		
Roof Delta	35	
Wall Heat	25	
Thermocouples	2	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond		000			
Cal Al					
Spar			0 —		
Cal C		—			
Lime	400		300		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		250	100	50
SiMn		600	385	
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1015	1024									Final N_2 (ppm):
Temp. (°F)	3151	3093									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 10 AFter

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec	16	10	20	25	32	35	20	20	06		
Prelim	4	8	5	38	0	23	9	5	2	9	
Prelim	5	40		43	18						
Prelim	06	68		30	20						
Prelim											
Prelim											
Prelim											
Final	.16	.69	.008		24	23	09	01	.02	009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Pb	Grade Code:	110
Final	.004	.002	.000	.000	.000	.0000	.0013	.0014		Sample Type:	555

GRADE 1018 SQ

Heat No. X-1279 Product Code 30X

Split	B.O. #	Billet Size	Length	Count	Tons	Stack #	Scrap	Tons
A	5987	5.00X7.00	177	53	50.6	EE-1	0	0.0
B	0	5.00X7.00	0	0	0.0		0	0.0
	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
719		185	2		21	21	5-12-00	2/3	X-1279

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Set charge electrodes @ LMF

Kentucky Electric Steel Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	0734	—
1st Chg.	0755	0828	45000
2nd Chg.	0832	0856	48408
3rd Chg.	0868		22
Tapping	0954	0954	
Tap Temp.	3000	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1000
Current Heat - Treatment Start	1005
Preparation Time	00:13
Current Heat - Treatment Stop	1105
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	2760	2625
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	24	
Wall Heat	24	
Thermocouples	4	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar					
Cal C					
Lime	4000		600		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		250		
SiMn		600		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0920	0935	0945	0959	10:41	10:55					Final N_2 (ppm):
Temp. (°F)	2865	3013	3016	3002	2873	2901					Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 10 A Flow

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim.	14	16	5	46	0	21	6	12	1	8	
Prelim	3	43		44	17						
Prelim	15	69		38	25						
Prelim											
Prelim											
Prelim											
Final	.16	.71	.009	.022	.24	.20	.07	.14	.02	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.004	.002	.000	.000	.000	.0000	.0005	.0012		Sample Type:	555

GRADE 1018 SQ

Heat No. W-1364 Product Code 32W

Split	P.O. #	Billet Size	Length	Count	Tons	Steel	#Scrap	Tons
A	5986	5.00X7.00	189	57	52.2	EE-1	0	0.0
B	0	5.00X7.00	0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919		452	7		37	5	5-12-00	3	W-1364

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF C mbined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	0639	—
1st Chg.	0658	0735	65000
2nd Chg.	0737		50
3rd Chg.			
Tapping	0844	0849	
Tap Temp.	3008	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	900
Current Heat - Treatment Start	906
Preparation Time	55.13
Current Heat - Treatment Stop	1000
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	24820	2575
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	24	
Wall Heat	24	
Thermocouples	4	
Samplers		
Oxygen Prpbes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			470		
Cal C					
Lime	4000				
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		80		
75% FeSi		250	100	40
SiMn			380	
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0820	0825	0839	0843							Final N_2 (ppm):
Temp. (°F)	2801	2835	2899	3008							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:** 2 AFlar

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	20	35	20	15	8		
Prelim.	7	7	4	175	0	21	12	8	3	10	
Prelim	7	41		57	18						
Prelim	15	71		24	23						
Prelim											
Prelim											
Prelim											
Final	.15	.70	.008	.016	.24	.21	.11	.10	.03	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl	Grade Code:	110
Final	.004	.002	.000	.000	.000	.0000	.0015	.0014		Sample Type:	555

GRADE 1018 SQ

Heat No. X-1278 Product Code 341

Split	P.O. #	Billet Size	Length	Count	Tons	Stact	#Scrap	Tons
A	5985	5.00X7.00	166	62	49.9	EE-1	0	0.0
B	0	5.00X7.00	0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gale NO.	Heck on Ladle	Heats or Plug	Date	Shift	Heat Number
919		114	11		5	4	6-12-00	7/3	X-1278

Remarks:

Kentucky Electric St ', Inc. — EAF / LMF Cc bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	05:55	—
1st Chg.	0605	0648	86,460
2nd Chg.	0648		29
3rd Chg.			
Tapping	0729	07:39	
Tap Temp.	3017	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	725
Current Heat - Treatment Start	735
Preparation Time	7.31
Current Heat - Treatment Stop	900
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	20700	3775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	23	
Wall Heat	23	
Thermocouples	2	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			400		
Cal C					
Lime	4000		1600		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			90	
75% FeSi		250	100	
SiMn		400		
HC FeMn			400	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0723	0727									Final N_2 (ppm):
Temp. (°F)	2922	3017									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:** 15 AFTER

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn*	Al
Spec.	16	70	020	025	22	35	20	15	06		
Prelim.	6	7	3	81	0	19	11	9	2	9	
Prelim	5	39		44	13						
Prelim	13	20		57							
Prelim	17			44							
Prelim	16			32							
Prelim											
Final	.17	.74	.009	.013	.18	.21	.13	.13	.03	.011	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code	110
Final	.004	.002	.001	.000	.000	.0001	.0007	.0015		Sample Type:	555

GRADE 1018 SQ

Heat No. W-1363 Product Code 341

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5995	5.00X7.00	166	60	48.3	EE-1	0	0.0
B	0	5.00X7.00	0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
914		185	8		38	13	5-13-00	1/3	W-1363

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	05:00	—
1st Chg.	05:12	05:53	66
2nd Chg.	05:55		49
3rd Chg.			
Tapping	06:34	06:39	
Tap Temp.	3035	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	650
Current Heat - Treatment Start	455
Preparation Time	59.3
Current Heat - Treatment Stop	[illegible]
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	19750	2011
Electrode #1		
Electrode 12		
Electrode #3		
Lance Sections		
Roof Delta	23	
Wall Heat	23	
Thermocouples	1	
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar					
Cal C					
Lime	4,000				
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		350		
SiMn		1000		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	1630										Final N_2 (ppm):
Temp. (°F)	2984										Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:** 25

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	15	06		
Prelim.	6	41		80							
Prelim	9										
Prelim	12										
Prelim											
Prelim											
Prelim											
Final	-.15	+.86	.010	.029	+.31	.18	13	07	03	008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
Final	.004	.003	.000	.000	.000	.0000	.0019	0014		Sample Type:	555

GRADE 1018 SQ

Heat No. X-1277 Product Code 341

Split	B.O. #	Billet Size	Length	Count	Tons	Start	#Scrap	Tons
A	5984	5.00X7.00	151	31	38.7	EE-1	0	0.0
B	5985	5.00X7.00	166	18	14.5	EE-1	0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ledleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917		333	7		36	4	5-12-00	11-7	X-1277

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	04:03	———
1st Chg.	04:16	05:00	66400
2nd Chg.	0505		49
3rd Chg.			
Tapping	0550	0555	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0554
Current Heat - Treatment Start	0557
Preparation Time	53.00
Current Heat - Treatment Stop	650
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

10-TIL

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	20910	
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	22	
Wall Heat	22	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			5-15		
Cal C			5-2		
Lime	4,000		450		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			50	50
75% FeSi		200	60	50
SiMn		600		
AC FeMn			300	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0605	0627	0644								Final N_2 (ppm):
Temp. (°F)	2873	2879	2912								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	15	06	20	
Prelim	6	7	4	85	—	20	16	8	3	9	
Prelim	7	46	7	70	20						
Prelim	12	68	7	40	20						
Prelim	14			30							
Prelim											
Prelim	.19	.69	.007	.021	.26	.20	.16	.09	.03	.009	
Final											

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	110
	.004	.003	.000	.000	.000	.0000	.0023	.0015		Sample Type:	555
Final	GRADE		1018 SQ								

Heat No. W-1362 Product Code 341

Split	H.D. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5984	5.00X7.00	191	54	50.0	EE-1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Numbe
917	367	470	2		21	21	5-12-00	11-7	W-1362

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		0305	
1st Chg	0325	0407	79400
2nd Chg.	0409		39
3rd Chg.			
Tapping	0455	0500	
Tap Temp.	3055	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	0510
Current Heat - Treatment Start	0512
Preparation Time	4146
Current Heat - Treatment Stop	0554
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
6 Ton	

from P B 5-9-12

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21740	2525
Electrode #1		
Electrode #2		
Electrode #3		
Cnnce Sections		
Roof Delta	22	
Wall Heat	22	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			3-B		
Cal C			6-C		
Lime	4000		300		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			100	40
75% FeSi		250	80	50
SiMn		1000		
HC FeMn			300	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flows

Temperatures and Times

Time	0521	0546									Final N_2 (ppm):
Temp. (°F)	2571	2893									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	15	06	20	
Prelim	5	7	3	65	1	22	11	6	3	9	
Prelim	5	44	4	55	17						
Prelim	13	75	8	56	19						
Prelim											
Prelim											
Prelim											
Final	.18	+.76	.007	.022	.24	.22	.11	.09	.03	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Pl	Grade Code:	110
Final	.004	.005	.000	.000	.000	.0000	.0018	.0015		Sample Type:	555

GRADE 1018 SQ

Heat No. X-1276		Product Code 21H						
Split	R.O. #	Billet Size	Length	Count	Tons	Stack	Scrap	Tons
6	5983	5.00X7.00	169	57	46.7	EE-1	0	0.0
7	0		0	0	0.0		0	0.0
8	0		0	0	0.0		0	0.0
9	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	367	453	10		8	8	5-12-00	11-7	X-1276

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Snap Wt.
Last Tap	—	02:00	—
1st Chg.	02:10	03:00	75,200
2nd Chg.	03:17		40
3rd Chg.			
Tapping	03:58	04:03	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0424
Current Heat - Treatment Start	0431
Preparation Time	3932
Current Heat - Treatment Stop	0510
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

15 - AFTER

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	30940	2500
Electrode #1	f	
Electrode #2	1	
Electrode #3	1	
Lance Sections		
Roof Delta	21	
Wall Heat	21	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar					
Cal C			2-C		
Lima	4,000		800		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			60	
75% FeSi		250		
SiMn		600		
HC FeMn			250	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0449	0959									Final N_2 (ppm):
Temp. (°F)	2845	2894									Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	1.5	0.6	20	—
Prelim.	6	7	10	30	—	20	10	7	2	7	
Prelim	10	49	6	36	24						
Prelim	15	65	6	26	24						
Prelim											
Prelim											
Prelim											
Final	.16	.65	.007	.026	.24	.22	.12	.12	.03	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Dl	Grade Code:	110
Final	.006	.002	.000	.001	.000	.0000	.0002	.0168		Sample Type:	555

GRADE 1018 SQ

Heat No. W-1361 Product Code 21H

Split	R.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5983	5.00X7.00	169	66	54.1	EE-1	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	367	323	8		37	12	5-12-00	11-7	W-1361

Remarks: Set A-B-C elect

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	01:00	———
1st Chg.	01:33	03:18	83,400
2nd Chg.	02:20		32,
3rd Chg.			
Tapping	03:00	03:05	
Tap Temp.	3055	Totals:	

Total Time of Heat:

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	0325
Current Heat - Treatment Start	0327
Preparation Time	5825
Current Heat - Treatment Stop	0424
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

25 - ASTER

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	2240	6775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	21	
Wall Heat	21	
Thermocouples		
Samplers		
Oxygen Probes		

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.					
Cal Al		1			
Spar			2-0		
Cal C			4	2-C	
Lime	4,000		300	150	
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			80	70
75% FeSi		250		50
SiMn		600		
HC FeMn			350	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0341	0403	0416	0422							Final N_2 (ppm):
Temp. (°F)	2849	2871	2926	2926							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	15	06	—	—
Prelim	9	10	5	55	0	20	12	8	3	9	—
Prelim	5	42	8	50	16						
Prelim	13	72	8	35	19						
Prelim											
Prelim											
Prelim											
Final	.18	+.76	008	.020	.24	.23	.12	.10	.03	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di		
Final	.004	.003	.000	.000	.000	.0000	.0018	.0016		Grade Code:	110
	GRADE		1018 SQ							Sample Type:	555

Heat No. X-1275 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5981	5.00X7.00	170	62	51.1	NN-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	867	470	7		3.5	3	5-12-00	11-7	X-1275

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	00:05	———
1st Chg.	00:15	00:55	73300
2nd Chg.	01:19		42
3rd Chg.			
Tapping	01:55	02:00	
Tap Temp.	3050	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0224
Current Heat - Treatment Start	
Preparation Time	
Current Heat - Treatment Stop	0224
Current Heat - Treatment Start	0226
Preparation Time	5825
Current Heat - Treatment Stop	0325
Total Time of Heat	

1/2 hr.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21400	5325
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	20	
Wall Heat	20	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond		4000			
Cal Al					
Spar			—		
Cal C			4-e		
Lime	4000		40		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			40	
75% FeSi		250		
SiMn		600		
HC FeMn			500	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0234	0245	0502	0325							Final N_2 (ppm):
Temp. (°F)	2868	2855	2890	2927							Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

n

Practice: 110 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	025	22	35	20	15	06	20	
Prelim.	10	10	4	53	—	22	70	9	2	10	
Prelim	10	47	5	30	24						
Prelim	17	68	6	17	23						
Prelim											
Prelim											
Prelim											
Final	.17	.72	.008	.010	.25	.22	.10	.11	.09	.012	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn		
Final	.005	.003	.001	.000	.001	.0000	.0014	.0014	Grade Code:	110
									Sample Type:	555

GRADE 1018 SQ

Heat No. W-1360 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack #	Scrap	Tons
A	5981	5.00X7.00	170	61	50.3	NN-3	6	4.9
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No	Gate No.	Heats on Ladle	Heels on Plug	Date	Shift	Heat Number
917	367	453	2		19	19	5-12-00	11-7	W-1360

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt
Last Tap	—	22:55	—
1st Chg	23:15	00:05	73200
2nd Chg.	00:07		27
3rd Chg.			
Tapping	00:55	01:00	
Tap Temp.	30:55	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	0121
Current Heat - Treatment Start	0123
Preparation Time	61 03
Current Heat - Treatment Stop	0224
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

25-AFIEC

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	19910	2875
Electrode #1		
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	20	
Wall Heat	20	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			1-5		
Cal C			4-C		
Lime	4000		500		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			140	60
75% FeSi		110	100	
SiMn		1300		
HC FeMn			350	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0131	0150	0207								Final N_2 (ppm):
Temp. (°F)	2884	2936	2914								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 9:30 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	23	110	025	030	22	40	20	20	06	—	
Prelim.	5	7	6	55	—	21	8	7	2	11	—
Prelim	5	79	4	52	19						
Prelim	16	114	11	28	23						
Prelim											
Prelim											
Prelim											
Final	.23	1.12	.011	.020	.24	.22	.08	.09	.03	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di		
Final	.004	.005	.000	.000	.000	.0000	.0013	.0012		Grade Code:	930
										Sample Type:	555

GRADE A529 GR 50

Heat No. X-1274 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack #	Scrap	Tons
A	5980	5.00X7.00	180	47	41.0	NN-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	367	323	10		7	8	5-12-00	11-7	X-1274

Remarks: Set C - elect

Kentucky Electric Stet,, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	22:00	———
1st Chg.	22:19	23:00	78,000
2nd Chg.	23:05		32,000
3rd Chg.			
Tapping	24:00	00:05	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0019
Current Heat - Treatment Start	0021
Preparation Time	5136
Current Heat - Treatment Stop	0121
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

22 - AFTER

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	55870	2025
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	19	
Wall Heat	19	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar					
Cal C					
Lime	4,000				
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B		70	
75% FeSi		110		
SiMn		1200		
HC FeMn			250	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0050	0155	0101								Final N_2 (ppm):
Temp. (°F)	2876	1422	2919								Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 930 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	23	110	025	030	22	40	20	20	06		
Prelim.	10	13	6	45	—	25	10	14	3	12	—
Prelim	13	84	8	27	21						
Prelim	21	105	12	22	27						
Prelim											
Prelim											
Prelim	.21	1.02	.010	.018	.27	.23	.10	.16	.03	.011	
Final											930

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	555
	.004	005	000	.000	.000	.0000	.0011	.0012		Sample Type:	
Final	GRADE		A529 GR 50								

Heat No. W-1359 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5980	5.00X7.00	180	57	49.8	NN-3	6	5.2
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	367	470	8		56	36	5-12-00	11-7	W-1359

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

Kentucky Electric St[illegible], Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Top	—	21:10	—
1st Chg.	21:30	22:09	78,000
2nd Chg	22:10		30,000
3rd Chg			
Tapping	22:50	22:55	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	2320
Current Heat - Treatment Start	2335
Preparation Time	4387
Current Heat - Treatment Stop	0019
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

20-ASTEC

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	17420	3375
Electrode 111		
Electrode 112		
Electrode #3		
Lance Sections		
Roof Delta	19	
Wall Heat	19	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			1-B		
Cal C			4-C		
Lime	4000		300		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B		60	
75% FeSi		700	100	
SiMn		1300		
HC FeMn			200	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	4-B
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	22:31	22:40	23:46	23:53	00:08						Final N_2 (ppm):
Temp. (°F)	2819	3008	2808	2846	2883						Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 408 **Roll No:** 644 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	100	20	25	22	35	20	20	06		
Prelim.	6	7	4	50	—	22	9	4	12		
Prelim		82	7	38	16						
Prelim	13	99	8	32	25						
Prelim											
Prelim											
Prelim											
Final	.16	1.02	.009	.021	.26	23	.09	10	.02	.011	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	408
Final	+.004	.048	.000	.000	.000	.0000	.0017	.0016		Sample Type:	555

GRADE A572-GR/50

Heat No. X-1273 Product Code 21H

Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5979	5.00X7.00	172	63	52.6	NN-3	0	0.0
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	367	461	7		34	2	5-11-2000	3-11	X-1273

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks: Set #2+3 - Elect.

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Carl Tap	—	18:35	—
1st Chg	2 30	21:13	72,000
2nd Chg.	21:15		98
3rd Chg.			
Tapping	21:55	22:00	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Steel Weight		
	Ladle Weight	
	Tare Weight	49,000 #
	Steel Weight	

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	22:16
Current Heat - Treatment Start	22:18
Preparation Time	6:24
Current Heat - Treatment Stop	23:19
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	21490	5750
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	18	
Wall Heat	18	
Thermocouples		
Samplers		
Oxygen Probes		

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-11		
Cal C			4-2		
Lime	4000		300		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-13			
75% FeSi		200		
SiMn		1200		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	4-12
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	21:51	22:27	22:42	2225	2314						Final N_2 (ppm):
Temp. (°F)	2929	3032	2966	2924	3019						Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 1,x8 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn[ll]	Al
Spec.	16	100	20	25	22	35	20	20	06		
Prelim.	28	21	7	40	-	20	8	14	02		
Prelim											
Prelim											
Prelim											
Prelim											
Prelim											
Final	.18	.98	.011	.009	.28	.20	.10	.19	02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di		
Final	+.004	+.051	.000	.000	.000	.0000	.0011	.0013		Grade Code:	555
	GRADE		A572-GR/50							Sample Type:	

408

Heat No. W-1358		Product Code 21H						
Split	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5979	5.00X7.00	172	56	46.7	NN-3	5	4.2
B	0		0	0	0.0		0	0.0
C	0		0	0	0.0		0	0.0
D	0		0	0	0.0		0	0.0

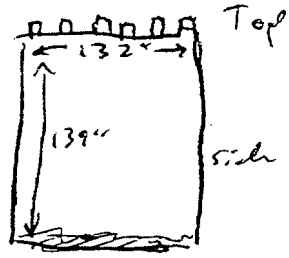
Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	735	459	2		18	18	5-11-2000	3-11	W.1358

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: F

Remarks:

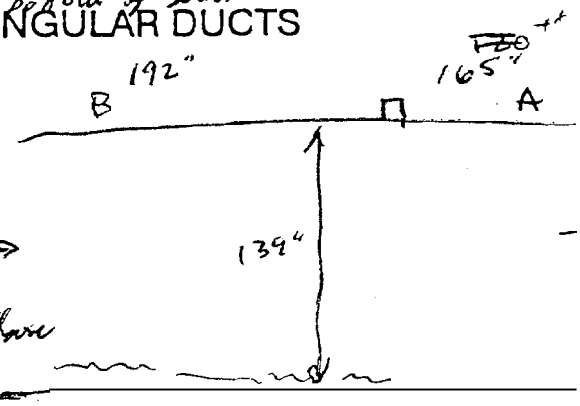
Appendix D

Emission Testing Field Data



Severe buildup in bottom of duct

TRAVERSE POINT LOCATION FOR RECTANGULAR DUCTS



Plant: Kentucky SFuel

Date: 5/10/00

Sampling Location: Baghouse inlet

Duct Width, inches: 132"

Inside of Far Wall to Outside of Nipple: 142" → to

Inside of Near Wall **to** Outside of Nipple (Nipple Length): 3" — bottom

Duct Length, inches: 134" 4

Equivalent Diameter = 2 x L x W / (L + W) = 134"

Distance Downstream from Flow Disturbance (Distance B):

192 inches / **Equivalent** Diameter = 1.4 dd

Distance Upstream **from Flow** Disturbance (Distance A):

165" inches / Equivalent Diameter = 1.22 dd

Calculated **By:** RG/TG

Schematic of Sampling **Location**

Traverse Point Number	Fraction of Length	Length (inches)	Product of Columns 2 & 3* (To nearest 1/8")	Nipple Length (inches)	Traverse Point Location (Sum of Col. 4 & 5)
1	0.062	139"	8.6	3"	11.6
2	0.188		26.13		29.13
3	0.312		43.37		46.37
4	0.438		60.88		63.88
5	0.562		78.12		81.11
6	0.688		95.63		98.63
7	0.812		112.87		115.87
8	0.938		130.38		133.38

If No Ports. Calculate Distances From Stack Walls **For** Port Locations

Number of **Ports**	Fraction **of Width**	**Width** (inches)	**Port Location Product of Col. 2 & 3*** (**To** Nearest 1/83

• All points or ports should be an equal distance from **each other (D) and 1/2 of that distance** from **the stack walls** (D/2), **where** D = Width / # **of points** or **ports**

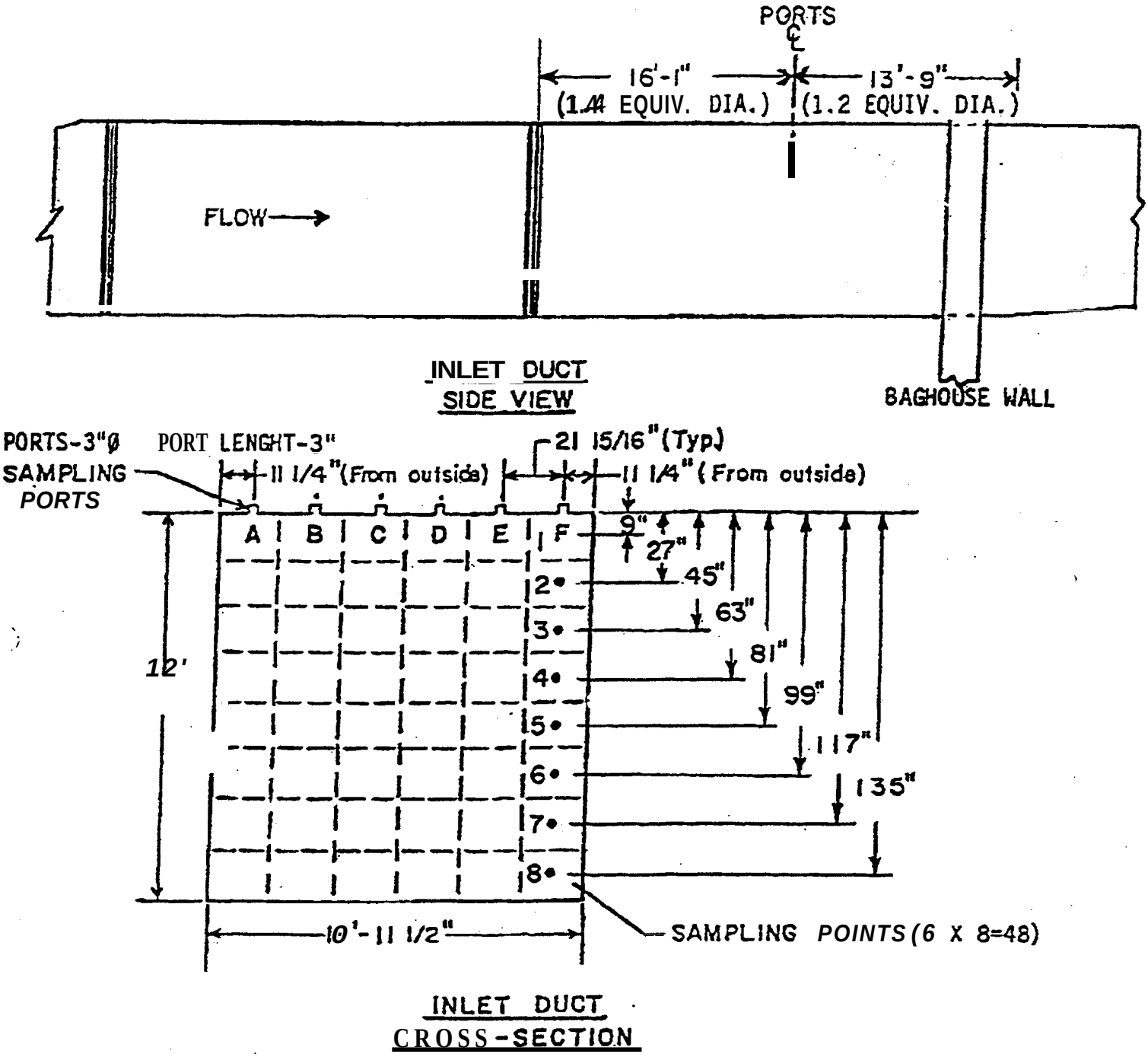


Figure 3-2. Inlet Velocity Measurement Location

1-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/10/00
Sampling Location: BAGHOUSE INLET Clock Time: 13.14
Run #: PRELIM Operators: TG/RK/TW
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H_2O: +4.7
Moisture. %: 1 Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
A	1	1.1	219.1
	2	1.1	214.2
	3	1.6	215.3
	4	1.8	217.9
	5	1.9	214.9
	6	1.9	195.6
	7	2.1	168.6
	8	2.1	144.2
B	1	1.3	150.0
	2	1.2	191.0
	3	1.5	211.3
	4	1.7	217.3
	5	1.7	207.3
	6	1.9	192.5
	7	2.1	175.9
	8	2.1	160.1
C	1	0.88	154.7
	2	1.2	193.8
	3	1.5	206.7
	4	1.6	194.2
	5	1.7	172.2
	6	1.8	162.2
	7 2.0	~~1.2~~ TW	148.4
	8	2.1	131.7
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ = 158

186.2

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/10/00
Sampling Location: BAGHOUSE INLET Clock Time: 13:15
Run #: PRELIM Operators: RK/TG/TW
Barometric Pressure, in. Hg: _____ Static Pressure, in. H_2O: +4.7
Moisture, %: _____ Molecular wt., Dry: _____ Pitot Tube, Cp: _____
Stack Dimension, in. Diameter or Side 1: _____ Side 2: _____
Wet Bulb, °F: _____ Dry Bulb, °F: _____

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
D	1	1.7	127.3
	2	1.8	154.9
	3	1.5	159.5
	4	1.4	155.9
	5	1.6	149.3
	6	1.6	145.1
	7	2.3	136.1
	8	2.1	130.2
		2.1	118.3
E	1	↓	↓
	2	1.6	125.0
	3	1.6	126.3
	4	1.6	127.0
	5	1.8	127.8
	6	1.7	128.0
	7	2.4	126.7
	8	2.3	124.0
F	1	1.9	115.4
	2	1.6	117.4
	3	1.6	118.4
	4	1.7	119.2
	5	1.8	119.8
	6	2.2	119.9
	7	2.0	119.5
	8	1.9	118.8
1.34724		$\overline{\sqrt{\Delta P}}$ = 1.3140	$\overline{Ts}$ = 158

$\overline{\Delta P}$ = 1.7433

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$ 28.84

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$ 28.73

$\overline{Ts} =$ 158 °F = 618 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ 29.81 in. Hg

$\overline{\sqrt{\Delta P}} =$ 1.3140

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,(°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ 80.16 ft/s

$As =$ _____ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ 61282 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ 51635 dscfm

1-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Kentucky Electric Steel Date: 5/10/00
Sampling Location: Baghouse Inlet Clock Ti e:
Run #: Pelim = 2/3 Fans* Operators: RK/TC/MW
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H_2O: +2.3
Moisture, %: 1 Molecular wt., Dry: 28.8 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
A	1	0.52	145.9
	2	0.42	157.2
	3	0.48	170.3
	4	0.70	178.8
	5	0.84	182.3
	6	0.72	183.5
	7	0.65	176.7
	8	0.64	169.7
B	1	0.52	152.3
	2	0.49	157.3
	3	0.50	161.6
	4	0.70	169.6
	5	0.88	175.5
	6	0.88	176.7
	7	0.77	175.7
	8	0.59	~~162.7~~ 167.2
C	1	0.65	148.2
	2	0.59	152.3
	3	0.68	160.3
	4	0.82	165.8
	5	0.92	171.3
	6	0.98	172.3
	7	0.85	171.4
	8	0.72	166.3
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ In. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\frac{\quad}{\quad}}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

* one 900A Fan shut down during flow measurement

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/10/00
Sampling Location: USE. INLET Clock Time: 15:15
Run #: PRELIM w/ 2/3 Operators: RK/TG/TM
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H_2O: +2.3
Moisture, %: i Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
D	1	0.70	140.6
	2	0.62	141.9
	3	0.61	143.8
	4	0.64	144.8
	5	0.72	146.3
	6	1.0	148.8
	7	0.98	149.6
	8	0.85	149.1
E	1	0.49	139.6
	2	0.50	141.5
	3	0.48	143.4
	4	0.56	144.1
	5	0.66	145.0
	6	0.78	145.4
	7	0.85	145.2
	8	0.77	144.4
F	1	0.35	139.0
	2	0.43	140.6
	3	0.44	142.7
	4	0.46	145.4
	5	0.54	148.8
	6	0.65	149.9
	7	0.66	150.6
	8	0.82	150.8
		$\overline{\sqrt{\Delta P}}$ = 0.8112	$\overline{Ts}$ = 156

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms = 28.73$

$\overline{Ts} = 156$ °F = 616 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps = 29.63$ in. Hg

$\overline{\sqrt{\Delta P}} = 0.8112$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,(°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs = 49.55$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = 378{,}835$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} = 318{,}343$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/20/1730

Sampling Location: BAGHOUSE INLET Clock Time:

Run #: 500 HP Fan off Operators: GG/TG/TW

Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: +4.1

Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84

Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132

Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
A	1	0.78	135.3
	2	0.91	146.7
	3	0.88	153.1
	4	0.82	156.7
	5	0.95	159.7
	6	1.4	162.6
	7	1.5	164.6
	8	1.6	166.6
B	1	0.87	167.0
	2	0.86	168.5
	3	0.84	169.1
	4	0.83	169.9
	5	0.99	170.0
	6	1.5	170.4
	7	1.6	171.0
	8	1.4	171.3
C	1	0.98	168.7
	2	0.94	169.2
	3	0.88	169.9
	4	0.99	170.3
	5	1.0	170.6
	6	1.6	171.1
	7	1.7	171.3
	8	1.6	~~170~~ 171.5
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} = \quad °F = \quad °R \ (°F + 460)$

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps = \quad$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs = \quad$ ft/s

$As = \quad ft^2$

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = \quad$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} = \quad$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00
Sampling Location: BAGHOUSE INLET Clock Time: 1730
Run #: 500HP FAN Operators: GG/TG/TW
Barometric Pressure, in. Hg: _____ Static Pressure, in. H_2O: -14.1
Moisture, %: _____ Molecular Wt., Dry: _____ Pitot Tube, Cp: _____
Stack Dimension, in. Diameter or Side 1: _____ Side 2: _____
Wet Bulb, °F: _____ Dry Bulb, °F: _____

	Traverse Point Number	Velocity Head in. H_2O	Stack Tamp. °F
D	1	1.0	171.7
	2	1.0	172.6
	3	1.0	173.3
	4	0.95	173.7
	5	1.1	174.0
	6	1.7	174.5
	7	1.8	175.2
	8	1.8	175.0
E	1	1.6	175.8
	2	1.6	175.9
	3	1.0	176.0
	4	1.2	176.0
	5	1.5	176.2
	6	1.8	176.2
	7	1.9	176.9
	8	1.8	177.2
F	1	1.5	173.3
	2	0.90	172.8
	3	0.90	172.7
	4	1.4	173.7
	5	1.5	174.4
	6	1.6	178.1
	7	1.5	184.5
	8	1.4	186.6
		$\overline{\sqrt{\Delta P}}$ = 1.1153	$\overline{Ts}$ = 170

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

Pa – In. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

Vs = ft/s

As = ft^2

$Qs = Vs \times As \times 60$ s/m

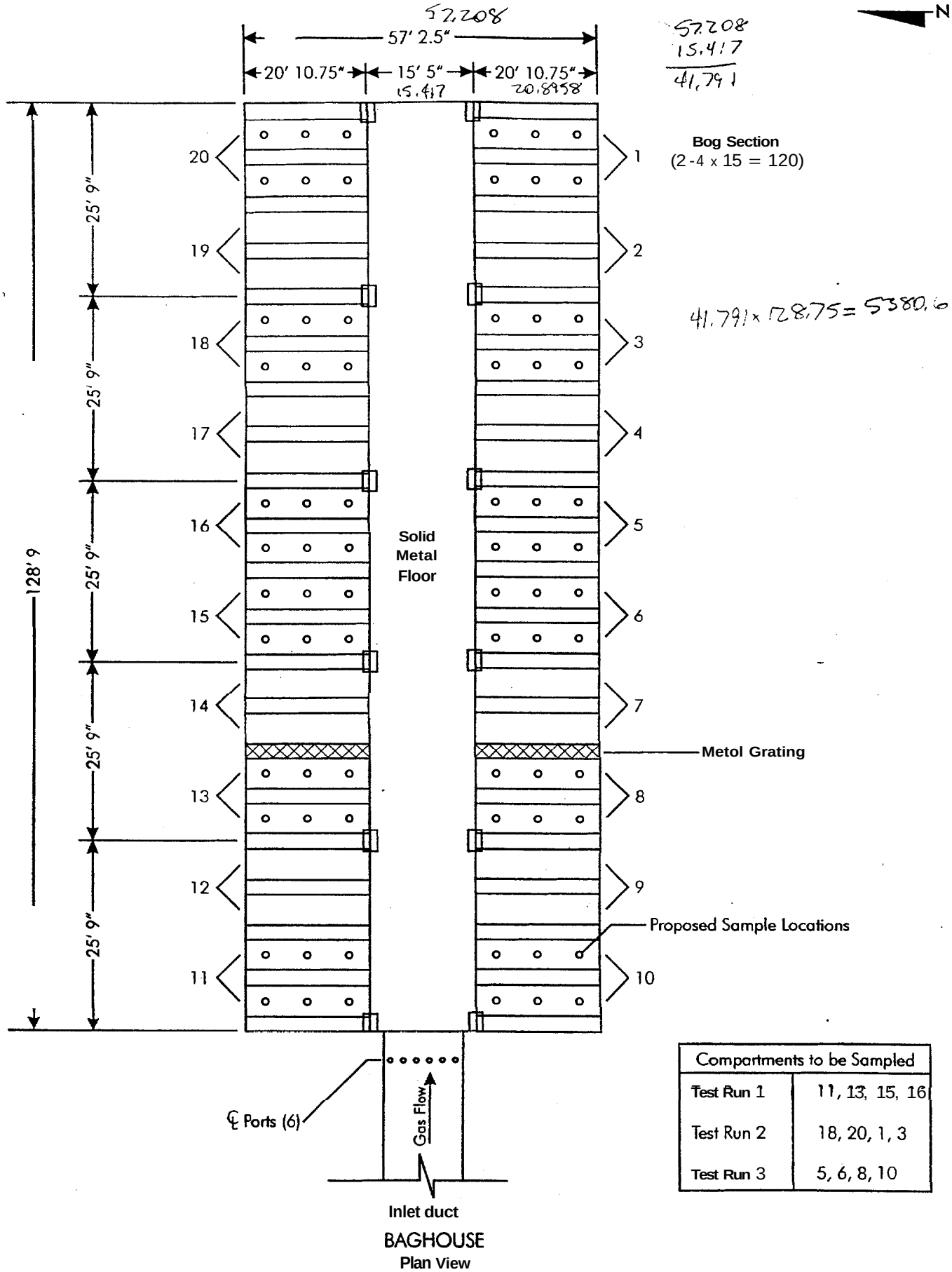
Qs = x x 60

Qs = acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

Qs_{std} = dscfm



Compartments to be Sampled	
Test Run 1	11, 13, 15, 16
Test Run 2	18, 20, 1, 3
Test Run 3	5, 6, 8, 10

Proposed KES, Inc. Outlet Sampling Points

Figure 3-3. Schematic of Baghouse Outlet

12.5' + 23' + 23'
23' + 23' +
23'

20 compartments total

10 compartments per side

TRAVERSE POINT LOCATION FOR RECTANGULAR DUCTS

Plant: KES

Date: _____

Sampling Location: Baghouse Outlet

Duct Width, inches: _____

Inside of Far Wall to Outside of Nipple: _____

Inside of Near Wall to Outside of Nipple (Nipple Length): _____

Duct Length, inches: _____

Equivalent Diameter = 2 x L x W / (L + W) = _____

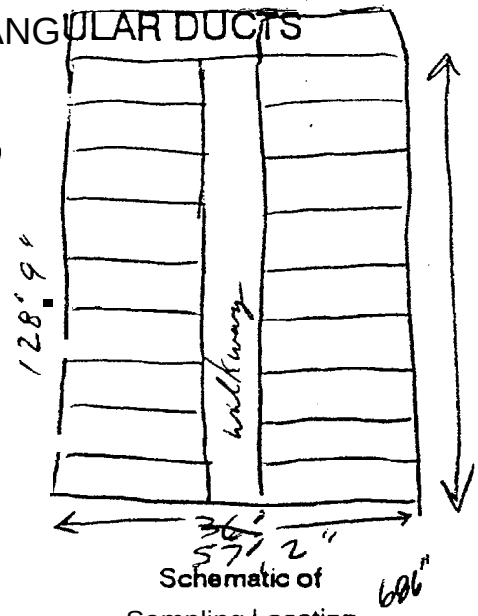
Distance Downstream from Flow Disturbance (Distance B):

_____ inches / Equivalent Diameter = _____ dd

Distance Upstream from Flow Disturbance (Distance A):

_____ inches / Equivalent Diameter = _____ dd

Calculated By: TW/RK



Schematic of Sampling Location

Traverse Point Number	Fraction of Length	Length (inches)	Product of Columns 2 & 3* (To nearest 1/83	Nipple Length (inches)	Traverse Point Location (Sum of Col. 4 & 5)

~~736.25 ft²~~
~~1360.2 ft²~~
5381 ft²

If No Ports. Calculate Distances From **Stack** Walls For Port Locations

27', 3"

Number of Ports	Fraction of Width	Width (inches)	Port Location Product of Col. 2 & 3* (To Nearest 1/87

* All points or ports should be an equal distance from each other (O)and 1/2 of that distance from tho stack walls (D/2), when D = Width / # of points or ports

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Pacbur Pressure Baghouse

RUN NO. 2-4

MODEL OR NAME

DATE OF TEST 5-12, 2000 0630

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS
T_s, Stack temperature	168	°F	V_{H_2O}, Volume of water ____ cf
P_s, Stack pressure	27.63	in.Hg.	B_{wo}, Moisture of content 1
T_m, Meter temperature		°F	V_{ne}, Volume of sample ____
P_m, Meter pressure		in.Hg.	at stack cond. ____ cf
M_w, Condensed water		gm	M_{dry}, Molecular wt dry 28.84
V_{DGM}, Volume of sample (meter conditions)		cf	M_{wet}, Molecular wt wet 28.73
			Velocity 82.20 fps
			Qsd 32,293,420 DSCF/hr
CO_2	0.0	%	Isokinetic Ratio
O_2	21.0	%	
CO_2	0.0	%	gr/scf @ 12% CO_2
N_2	79.0	%	
AP, Velocity head (traverse points)	1.53713	in.H_2O	Lb/Hr
C_p, Pitot tube coeff.	0.84		
			Lb/mm BTU
____ min x 60			
Θ, Sampling time		sec.	
A_n, area of nozzle D=		ft^2	
D^2 x 0.005454			
Weight of collected pollutant		gm	REQUESTED BY
CO_2, Waste only		%	REVIEWED BY
			DATE
A_s, Area of stack D= ft $\frac{D2}{4}$ π	131.50	ft^2	RECOMMENDATION
10'11½" x 12'			
132 x 139	127 HZ		
Boiler Heat Capacity		mmBTU/Hr.	

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Furnace Vacuum Baghouse

RUN NO. BI 2B-3A

MODEL OK NAME

DATE OF TEST 5-14, 2000

TEST PERFORMED BY EQ/PES

DATA REQUIRED	RESULTS
T_s, Stack temperature 141.6 °F P_s, Stack pressure 29.78 in. Hg. T_m, Meter temperature °F P_m Meter pressure in. Hg. M_w, Condensed water gm V_{DGM}, Volume of sample cf (meter conditions)	V_{H2O}, Volume of water cf B_{wo}, Moisture of content 1% assumed V_{ne}, Volume of sample at stack cond. cf M_{dry}, Molecular wt dry 28.84 M_{wet}, Molecular wt wet Velocity 81.92 fps Qsd 33,296,079 DSCF/hr
CO_2 % O_2 % CO_2 % N_2 %	Isokinetic Ratio gr/scf @ 12% CO_2
AP, Velocity head 1.83743 in. H_2O 1.35552 (traverse points) C_p, Pitot tube coeff. 0.84	Lb/Hr Lb/mm BTU
min x 60 Θ, Sampling time sec. A_n, area of nozzle D= " ft^2 D^2x 0.005454	
Weight of collected gm pollutant CO_2, Waste only %	REQUESTED BY REVIEWED BY DATE RECOMMENDATION
A_s, Area of stack D= ft $\frac{D2}{4}\pi$ 131.50 ft^2 101 x 112 " 132 x 139 127.42 Boiler Heat Capacity mmBTU/Hr.	

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Pulverized Coal Boiler

RUN NO. 1A

MODEL OR NAME

DATE OF TEST 5-11, 2000 0730

TEST PERFORMED BY EQ/PES

DATA REQUIRED

P_b 29.60

T_s, Stack temperature	142	°F
P_s, Stack pressure	29.98	in.Hg.
T_m, Meter temperature		°F
P_m, Meter pressure		in.Hg.
M_w, Condensed water		gm
V_{DGM}, Volume sf sample (meter conditions)		cf

CO_2	0.0	%
O_2	21.0	%
CO_2	0.0	%
N_2	79.0	%

AP, Velocity head 1.35845 in. H20 (traverse points)

C_p, Pitot tube coeff. 0.84

_____ min x 60

Θ, Sampling time _____ sec.

A_n, area of nozzle D= " _____ ft^2

D^2x 0.005454

Weight of collected pollutant _____ gm

CO_2, Waste only _____ %

A_s, Area of stack

D= ft $\frac{D2}{4}$ π 131.50 ft^2

10'11½" x 12'

132 x 139 127.42

Boiler Heat Capacity mmBTU/Hr.

RESULTS

V_{H20}, Volume of water _____ cf

B_{ne}, Moisture of content +% assumed

V_{ne}, Volume of sample _____ at stack cond. _____ cf

M_{dry}, Molecular wt dry 28.84

M_{wet}, Molecular wt wet 28.73

Velocity 81.62 fps

Qsd 33,615,682 DSCF/hr

Isokinetic Ratio

gr/scf @ 12% CO_2

Lb/Hr

Lb/mm BTU

REQUESTED BY

REVIEWED BY

DATE

RECOMMENDATION

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Pocket Pressure Baghouse

RUN NO. 1B

MODEL OR NAME

DATE OF TEST 5-11, 2000 0705

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS		
T_s, Stack temperature	130	°F	V_{H_2O}, Volume of water		cf
P_s, Stack pressure	29.93	in. Hg	B_{wo}, Moisture of content	1 %	
T_m, Meter temperature		°F	V_{ne}* Volume of sample at stack cond.		cf
P_m, Meter pressure		in. Hg	M_{dry}, Molecular wt dry	28.84	
M_w, Condensed water		gm	M_{wet}, Molecular wt wet	28.73	
V_{DGM}, Volume of sample (meter conditions)		cf	Velocity 79.12		fps
			Qsd 33,496 5285 DSCF/hr		
CO_2	0.0	%	Isokinetic Ratio		
O_2	21.0	%			
CO_2	0.0	%	gr/scf @ 12% CO_2		
N_2	79.0	%			
AP, Velocity head (traverse points)	1.76913	in. H_2O 1.33009	Lb/Hr		
C_p, Pitot tube coeff.	0.84		Lb/mm BTU		
____ min x 60					
Θ, Sampling time		sec.			
A_n, area of nozzle D= "		ft^2			
D^2 x 0.005454					
Weight of collected pollutant		gm	REQUESTED BY		
CO_2, Waste only		%	REVIEWED BY		
			DATE		
A_s, Area of stack D= ft 10'11½" x 12' $\frac{D^2}{4}\pi$	131.5	ft^2	RECOMMENDATION		
132 134 Boiler Heat Capacity	127.42	mmBTU/Hr.			

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Kentucky Electric Steel

TEST NO.

SOURCE TYPE Hasell Bailey Thermal Cogeneration

RUN NO. B I 3B

MODEL OR NAME

DATE OF TEST 5-12-06 16 f

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
T_s, Stack temperature	191 °F	V_{H_2O}, Volume of water ___ cf
P_s, Stack pressure	29.79 in.Hg	B_{wo}, Moisture of content 1% (wet basis)
T_m, Meter temperature	°F	V_{ne}, Volume of sample ___
P_m, Meter pressure	in.Hg	at stack cond. ___ cf
M_w, Condensed water	gm	M_{dry}, Molecular wt dry 28.84
V_{DGM}, Volume of sample (meter conditions)	cf	M_{wet}, Molecular wt wet ___
		Velocity 80.39 fps
		GSD 30,612,842
CO_2	%	Isokinetic Ratio
O_2	%	
CO_2	%	gr/scf @ 12% CO_2
N_2	%	
AP, Velocity head (traverse points)	1.66800 in.H_2O 1.29151	Lb/Hr
C_p, Pitot tube coeff.		Lb/mm BTU
___ min x 60		
Θ, Sampling time	sec.	
A_n, area of nozzle D= "	ft^2	
D^2 x 0.005454		
Weight of collected pollutant	gm	REQUESTED BY
CO_2, Waste only	%	REVIEWED BY
		DATE
A_s, Area of stack D= ft $\frac{D2}{4} \cdot \pi$	131.50 ft^2	RECOMMENDATION
10'11.5" x 12' 132" x 139"	127.42	
Boiler Heat Capacity	mmBTU/Hr.	

REMARKS

DEP 4033

Dn = 1.050

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/11/00
Sampling Location: BAGHOUSE INLET Clock Time: 0730
Run #: ~~[illegible]~~ RUN 1A Operators: GG/TG/TW
Barometric Pressure, in. Hg: 29.60 Static Pressure, in. H_2O: +5.1
Moisture, %: 1 Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
A	1	1.4	153.0
	2	1.4	251.4
	3	1.8	259.1
	4	1.9	261.4
	5	1.8	242.4
	6	1.9	215.1
	7	2.1	183.0
	8	2.1	151.5
B	1	1.7	171.5
	2	1.1	192.1
	3	1.6	205.5
	4	1.6	210.8
	5	1.7	199.0
	6	1.9	175.8
	7	2.2	157.0
	8	2.1	134.0
C	1	1.1	138.5
	2	1.5	156.1
	3	1.9	169.1
	4	1.7	171.5
	5	2.0	157.8
	6	2.1	142.7
	7	2.2	131.7
	8	2.2	121.2
		$\overline{\sqrt{\Delta P}}$ = 1.33	$\overline{Ts}$ = 181

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.8}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s 82.5

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$ 631,123

$Qs =$ acfm 510,402

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} =$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/11/00
Sampling Location: BAGHOUSE INLET Clock Time: 0720
Run #: ~~[illegible]~~ RUN 1A Operators: GA/TG/TW
Barometric Pressure, in. Hg: _____ Static Pressure, in. H_2O: +5.1
Moisture, %: _____ Molecular wt., Dry: _____ Pitot Tube, Cp: _____
Stack Dimension, in. Diameter or Side 1: _____ Side 2: _____
Wet Bulb, °F: _____ Dry Bulb, °F: _____

65.2535

Traverse Point Numkr	Velocity Head In. H_2O	Stack Temp. °F
D 1	1.7	120.1
2	1.9	133.0
3	1.7	133.9
4	TW ~~[illegible]~~ 1.5	133.2
5	1.9	123.5
6	2.0	118.0
7	2.2	109.7
8	2.1	105.9
E 1	2.1	96.6
2	2.3	98.3
3	1.6	97.9
4	1.7	97.9
5	2.0	97.7
6	2.0	96.8
7	2.4	94.6
8	2.4	92.7
F 1	1.2	87.2
2	1.5	87.1
3	1.7	87.0
4	2.0	87.0
5	2.1	87.1
6	2.2	86.9
7	2.1	86.3
8	2.1	85.9
	$\overline{\sqrt{\Delta P}}$ = 1.3594	$\overline{T_s}$ = 142

Avg ΔP = 1.8664

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$ 28.84

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$ ~~28.75~~ 28.71 RK

$\overline{T_s} =$ °F = 602 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ 29.97 in. Hg

$\overline{\sqrt{\Delta P}} =$ 1.3594

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{T_s (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ 81.62 ft/s

$As =$ ft²

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ 623962 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ 542784 dscfm

GAS VELOCI N AND VOLUMETRIC FLOW RATE

Plant: Kentucky Electric Steel Date: 5/11/00
Sampling Location: Baghouse inlet Clock Time: 1900
Run #: 1B Operators: AK/TG/GG
Barometric Pressure, in. Hg: 29.60 Static Pressure, in. H_2O: +
Moisture, %: 1.2 Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"
Wet Bulb, °F: _____ Dry Bulb, °F: _____

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
Port A	1	~~1.2~~ 1.1	156
	2	1.2	155
	3	1.45	159
	4	1.75	159
	5	1.9	152
	6	2.1	141
	7	2.1	131
	8	1.9	127
B	1	1.3	141
	2	1.0	149
	3	1.6	155
	4	1.7	156
	5	1.8	147
	6	1.9	140
	7	1.9	130
	8	2.0	125
C	1	1.0	134
	2	1.1	143
	3	1.6	149
	4	1.8	147
	5	1.8	139
	6	1.9	132
	7	2.2	125
	8	2.1	120
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\frac{\quad}{\quad}}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Kentucky Electric Steel Date: 5/11/00
Sampling Location: Baghouse Outlet Clock Time: 0705
Run #: 1B Operators: RK/TG
Barometric Pressure, in. Hg: 29.60 Static Pressure, in. H_2O: +4.5
Moisture, %: 1.2 Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Numkr	Velocity Head In. H_2O	Stack Tamp. °F
D	1	2.0	122
	2	1.8	126
	3	1.8	130
	4	1.9	130
	5	1.7	128
	6	1.8	125
	7	2.0	121
	8	2.1	118
E	1	1.9	115
	2	1.7	116
	3	1.5	117
	4	1.8	118
	5	1.9	118
	6	2.1	117
	7	2.2	116
	8	2.2	115
F	1	1.8	113
	2	1.5	114
	3	1.6	114
	4	1.6	114
	5	2.1	114
	6	2.2	113
	7	2.2	113
	8	2.1	113
		$\overline{\sqrt{\Delta P}}$ = 1.3305	$\overline{T_s}$ = 130

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms = \cancel{28.73}$ 28.71 RK

$\overline{T_s} = \quad °F = \quad °R \ (°F + 460)$

$Pa = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps = 29.78$ in. Hg

$\overline{\sqrt{\Delta P}} = 1.3305$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{T_s (°R)}{P_s \times M_s}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs = 79.339$ ft/s

$As = \quad ft^2$

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = 604,547$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{P_s}{T_s} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} = 534,879$ dscfm

PES

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00
Sampling Location: BAGHOUSE INLET Clock Time: 0630
Run #: 2A operators: GG/TG/TW
Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: +5.2
Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube, Cp: 84
Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
A	1	1.6	254.8
	2	1.1	254.4
	3	1.7	260.1
	4	1.9	258.6
	5	2.0	246.3
	6	1.9	227.8
	7	2.1	205.7
	8	2.1	185.7
B	1	1.1	179.1
	2	1.1	193.7
	3	1.6	204.3
	4	1.7	207.0
	5	1.8	201.9
	6	2.0	191.7
	7	2.1	178.7
	8	2.1	164.4
C	1	1.1	156.8
	2	1.3	178.3
	3	1.7	188.5
	4	1.7	186.1
	5	1.8	176.1
	6	1.9	166.9
	7	2.2	151.3
	8	2.1	146.5
		$\overline{\sqrt{\Delta P}}$ = 1.3372	$\overline{Ts}$ = 168

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad . \quad) + (0.32 \times \quad) + (0.28 \times$

$Md =$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} = \quad {}^oF = \quad {}^oR \ ({}^oF + 460)$

$Pa = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps = \quad$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ ({}^oR)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs = \quad$ ft/s

$As = \quad ft^2$

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = \quad$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.047 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} = \quad$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW **RATE**

Plant: KES Date: 5/12/00
Sampling Location: BAGHOUSE, INLET Clock Time: 0630
Run #: 2A Operators: GA/TA/TW
Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: +5.2
Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132
Wet Bulb, °F: _____ Dry Bulb, °F: _____

	Traverse Point Number	Velocity Head h. H_2O	Stack Tamp. °F
D	1	1.9	150.6
	2	1.8	160.0
	3	1.6	166.1
	4	1.7	166.3
	5	1.7	160.0
	6	1.8	148.9
	7	2.1	143.3
	8	2.1	137.7
E	1	2.0	130.5
	2	1.7	131.3
	3	1.6	131.2
	4	1.5	131.4
	5	2.0	131.2
	6	2.1	130.9
	7	2.3	129.3
	8	2.2	127.6
F	1	1.9	125.0
	2	1.5	125.8
	3	1.6	126.1
	4	1.7	126.5
	5	1.9	126.7
	6	2.1	126.6
	7	2.1	126.3
	8	1.9	125.9
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms = 1$

$\overline{Ts} = \quad °F = \quad °R \ (°F + 460)$

$Ps = Pb + \frac{S.P.}{13.8} = (\quad) + \frac{}{13.8}$

$Ps = 29.83$ in. Hg

$\overline{\sqrt{\Delta P}} = 1.3372$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs = \quad$ ft/s

$As = \quad ft^2$

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = \quad$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} = \quad$ dscfm

1-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00

Sampling Location: ~~BI-3~~ BAGHOUSE INLET Clock Time: 1050

Run #: BI-2B/3A Operators: TG/GG/TW

Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: _____

Moisture, %: 1 Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84

Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"

Wet Bulb, °F: ~ Dry Bulb, °F: ~

	Traverse Point Number	Velocity in. H_2O	Stack Temp. °F
A	1	1.0	147.4
	2	1.2	147.9
	3	1.4	148.2
	4	1.7	147.6
	5	1.9	146.7
	6	2.0	145.7
	7	2.1	143.4
	8	2.1	140.4
B	1	1.2	155.2
	2	1.1	159.3
	3	1.5	166.7
	4	1.8	168.1
	5	1.8	165.2
	6	1.9	158.2
	7	2.1	150.3
	8	2.1	143.6
C	1	1.7	142.6
	2	1.4	161.4
	3	1.6	170.9
	4	1.6	171.6
	5	1.7	165.5
	6	2.0	157.0
	7	2.2	150.5
	8	~~1.4~~ 2.3	147.3
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (.028 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

2-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00

Sampling Location: BAGHOUSE INLET Clock Time: 1050

Run #: BI-3B/3A Operators: GG/TG/TW

Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: +4.5

Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube. Cp: 0.84

Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132

Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Numkr	Velocity Head in. H_2O	Shck Tamp. °F
D	1	2.0	147.0
	2	1.7	152.7
	3	1.7	153.7
	4	1.6	153.7
	5	1.8	149.8
	6	1.8	146.0
	7	2.2	143.3
	8	2.3	138.8
E	1	1.8	134.2
	2	1.9	135.0
	3	1.5	135.1
	4	1.6	135.7
	5	1.9	136.9
	6	2.1	136.4
	7	2.9	134.7
	8	2.3	137.1
F	1	1.8	130.2
	2	1.5	130.2
	3	1.8	130.3
	4	2.0	130.7
	5	2.3	130.5
	6	2.4	130.4
	7	2.8	130.0
	8	2.3	129.9
		$\overline{\sqrt{\Delta P}}$ = 1.3556	$\overline{Ts}$ = 146

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$ 0.00276

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$ 0.02762

$Md =$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$ 1.6655

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$ 0.8396

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

Ps = 29. in. Hg

$\overline{\sqrt{\Delta P}} =$ 0.000763

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

Vs = 81.92 ft/s

As = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 62631.2 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

Qs_{std} = 537728 dscfm

1-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00
Sampling Location: BAGHOUSE INLET Clock Time: 1619
Run #: BI-3B Operators: GG/TG/TG
Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: + 4.6
Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1: 139 Side 2: 132
Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head in. H_2O	Stack Tamp. °F
A	1	1.3	233.4
	2	0.98	232.7
	3	1.6	232.6
	4	1.7	232.6
	5	1.9	228.7
	6	1.8	217.0
	7	2.1	203.3
	8	2.0	193.1
B	1	1.1	214.5
	2	1.1	219.9
	3	1.6	224.3
	4	1.6	223.0
	5	1.7	211.0
	6	1.7	197.9
	7	2.2	185.9
	8	2.0	177.8
C	1	1.3	219.8
	2	1.3	235.8
	3	1.5	240.2
	4	1.4	233.1
	5	1.5	218.9
	6	1.7	206.2
	7	2.0	194.1
	8	2.0	188.4
		$\overline{\sqrt{\Delta P}}$ = 1.2915	$\overline{Ts}$ = 191

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,(°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\frac{}{}}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} =$ dscfm

2-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00

Sampling Location: KES BAGHOUSE INLET Clock Time: 1619

Run #: BI-3B Operators: GC/TG/TW

Barometric Pressure, in. Hg: 29.45 Static Pressure, in. H_2O: -4.6

Moisture, %: _____ Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84

Stack Dimension, in. Diameter or Side 1: 139" Side 2: 132"

Wet Bulb, °F: — Dry Bulb, °F: —

	Traverse Point Number	Velocity Head In. H_2O	Stack Temp. °F
D	1	1.9	184.5
	2	1.5	189.3
	3	1.5	188.4
	4	1.4	189.0
	5	1.6	185.2
	6	1.6	181.1
	7	2.0	175.2
	8	2.1	170.0
E	1	1.8	168.7
	2	1.5	166.8
	3	1.4	167.5
	4	1.6	167.9
	5	1.9	167.4
	6	2.0	165.4
	7	2.1	162.6
	8	2.1	161.0
F	1	1.6	155.4
	2	1.2	155.1
	3	1.4	154.8
	4	1.5	154.5
	5	1.9	154.6
	6	2.0	154.5
	7	2.2	154.1
	8	1.9	153.6
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\%H_2O}{100}) + 18 (\frac{\%H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

$Ps =$ In. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,(°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\%H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

PACIFIC ENVIRONMENTAL SERVICES, INC.

Project No.	Page of
5700.000	

Client: KES / EQM

Location: Ashland, Kentucky

Prepared By	Date	Checked By	Date	Sheet Title
NKH	5/10/00	KA		Nozzle Calculation

Prelim 5/10/00

Total Baghouse inlet, acfm = 612,821 acfm

$$\frac{612{,}821 \text{ acfm}}{5381 \text{ ft}^2 \times 60} = 1.898 \text{ feet/second}$$

$$1.898 \text{ fps} = 85.49 \times .84 \times \sqrt{\Delta P} \sqrt{\frac{618 \text{ °R}}{28.73 \times 29.81}}$$

$$\left(\frac{1.898}{85.49 \times .84 \times 0.8495}\right)^2 = (0.031113)^2 = 0.000968 = \Delta P$$

M. Box ΔH = 1.721

1.100" Nozzle (used 1.050")

160 °F stack

5/11/00

Total Baghouse inlet, acfm = 623,962 acfm

$$\frac{623{,}962 \text{ acfm}}{5381 \text{ ft}^2 \times 60} = 1.933 \text{ fps}$$

$$1.933 \text{ fps} = 85.49 \times .84 \times \sqrt{\Delta P} \sqrt{\frac{602}{28.73 \times 29.97}}$$

$$\left(\frac{1.933 \text{ fps}}{85.49 \times .84 \times 0.8362}\right)^2 = (0.03219)^2 = \underline{0.001036 \ \Delta P}$$

PACIFIC ENVIRONMENTAL SERVICES, INC.

Project No. 4700,000	Page of
Client	
Location	

Prepared By	Date	Checked By	Date	Sheet Title
nlc	5/12			

Baghouse Inlet actual = 606,547

$$\frac{606\,547}{5381 \times 60} = 1.879 \text{ fps}$$

$$1.879 = 85.49 \times .84 \times \sqrt{\Delta P} \sqrt{\frac{520}{28.73 \times 29.78}}$$

$$\downarrow$$

$$0.8304$$

$$\left(\frac{1.879}{85.49 \times .84 \times .8304}\right)^2 = (0.0315097)^2 = 0.000993 \ \Delta P$$

Fan down at 0000 ... waiting on replacement!

FIELD DATA SHEET

K = 1231.7

Plant: KES

Sample Type: Part. Operator: TW/A

Nozzle ID: 080 Thermocouple #: ____

Sampling Location: Baghouse

Pbar: 29.60 Ps: -.10

Assumed Bws: 1 Filter #: 3 00 304

Run Number: B0-1 Date: 5/11/00

C02: 0 02: 21

Meter Box #: 2 Y: 0.988 ΔH@: 1.721

Pretest Leak Rate: 0.002 cfm @ 12 in. Hg.

Probe Length/Type: 2' Glass Pitot #: ____

Post-Test Leek Rate: ____ cfm @ ____ in. Hg.

Pretest Leak Check: Pitot: ✓ Orsat: ____

Stack Diameter: ____ AS: ____

Post-Test Leak Check: Pitot: ____ Orsat: ____

118.747 0.001036

Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O Desired	Actual	Stack Temp. (Ts)	Temperature °F Probe	Filter	Impinger Temp. °F (4)	Dry Gas Meter Temp. Inlet (Tm in °F)	Outlet (Tm out °F)	Pump Vacuum (in. Hg)
B0-0	0	1355	~~117.628~~										
1	7.5	1402		~~0.000968~~	~~1.00~~	~~0.00~~	121	256	257	67	82	82	18
* 2	15.0	1410	126.565	0.001036	0.98	0.95	123	256	253	65	83	84	18
3	22.5	~~1452~~ 1442	133.~~565~~	0.001036	0.98	1.00	127	256	~~236~~	73	90	87	1
4	30.0	1507	137.~~68~~	0.001036	0.97	0.97	137	258	252	73	91	~~88~~	~~1~~ 1
5	37.5	1515	142.~~84~~	0.001036	0.96	0.96	140	258	253	74	93	89	1
6	45.0	1522	146.41	0.001036	0.97	0.97	139	257	251	73	94	90	1
7	52.5	1530	150.91	0.001036	0.97	0.97	138	257	255	71	95	91	1
8	60.0	1537	155.22	0.001036	0.97	0.97	136	257	253	71	95	91	1
5-1	107.5	1545	159.77	0.001036	0.96	0.96	145	258	253	75	96	92	1
2	115.0	1552	163.88	0.001036	0.95	0.95	153	258	254	77	97	92	1
3	122.5	1560 1600	168.34	0.001036	0.94	0.94	156	257	252	81	96	92	1
4	130.0	1607	172.69	0.001036	0.93	0.93	169	257	253	78	97	93	1
5	137.5	1615	176.99	0.001036	0.93	0.93	169	257	254	76	97	92	1
6	145.0	1622	181.34	0.001036	0.93	0.93	164	258	253	78	98	93	1
7	152.5	1630	185.67	0.001036	0.96	0.96	150	258	252	77	97	94	1
8	200.0	1637	190.05	0.001036	0.90	0.98	139	258	255	77	98	94	1
4-1	207.5	1645	194.49	0.001036	0.98	0.98	135	257	250	76	98	94	1
2	215.0	1652	198.99	0.001036	0.93	0.93	167	258	254	76	97	94	1
3	222.5	1700	203.23	0.001036	0.93	0.93	165	258	254	78	98	94	1
4	230.0	1708	207.55	0.001036	0.92	0.92	174	257	253	82	97	94	1
5	237.5	1715	211.88	0.001036	0.93	0.93	169	256	252	84	97	94	1
6	245.0	1722	216.21	0.001036	0.95	0.95	150	258	254	73	96	93	1
7	252.5	1730	220.58	0.001036	0.95	0.95	155	257	253	73	94	96	1
8	300.0	1737	224.62	0.001036	0.94	0.94	159	257	254	72	97	94	1
B-1	307.5	1745	229.44	0.001036	0.99	1.00	127	258	252	72	97	93	1

Compart #20

* stopped - shortened umbilical cord

Vacuum at 0 126.97 ~~0.69~~

Stop @ 1443 126.~~582~~

Start @ 1452 ~~130.304~~

3.00 @ compartment 6

-3.744 ft³

ΔVm= ____ $\overline{\sqrt{\Delta p}}$= .03219 $\overline{\Delta H}$= ____ $\overline{Ts}$= ____ $\overline{Tm}$= ____

Bws = 1.2

avg Δp = 0.001036

FIELD DATA SHEET

Plant: KES
Sampling Location: BAGHOUSE OUTLET
Run Number: B - 1 Date: 5/11/00
Pretest Leak Rate: 0.002 cfm @ 12 in. Hg.
Pretest Leak Check: Pitot: ✓ Orsat: ____

Sample Type: PART. Operator: DS/RK
Pbar: 29.6 Ps: -0.10
CO2: 0 O2: 21
Probe Length/Type: ____ Pitot #: ____
Stack Diameter: ____ As: ____

Nozzle ID: 1.000 Thermocouple #: ____
Assumed Bws: 1 Filter #: 300304
Meter Box #: 2 Y: 0.988 ΔH@: 1.74
Post-Test Leak Rate: 0.002 cfm @ 20 in. Hg.
Post-Test Leak Check: Pitot: ____ Orsat: ____

Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O Desired	Orifice Pressure Differential (ΔH) in H2O Actual	Stack Temp. (Ts)	Temperature °F Probe	Temperature °F Filter	Impinger Temp. °F	Dry Gas Meter Temp. Inlet (Tm in °F)	Dry Gas Meter Temp. Outlet (Tm out °F)	Pump Vacuum (in. Hg)
Comp 3													
2	315	1752											
↓	↓	↓	233.69	0.001036	0.99	0.99	127	257	253	72	98	94	1
3	325	1800	238.15	0.001036	0.98	0.98	133	258	252	74	98	94	1
4	330	1807	242.163	0.001036	0.99	0.99	128	256	252	77	98	94	1
5	338	1815	247.44	0.001036	0.99	0.99	129	258	256	77	98	94	1
6	345	1822	251.51	0.001036	0.97	0.97	140	257	254	81	98	94	1
7	252.5	1830	256.50	0.001036	0.95	0.95	152	258	253	78	98	94	1
8	400.0	1837	260.62	0.001036	0.95	0.95	157	257	252	80	99	95	1
Comp 2	407.5	1845	265.28	0.001036	0.96	0.96	151	256	253	80	99	94	
2	415.0	1900	269.24	0.001036	0.97	0.97	145	257	256	80	99	96	1
3	422.5	1907	273.62	0.001036	0.97	0.97	143	257	253	79	100	96	1
4	430.0	1915	278.08	0.001036	0.99	0.99	130	258	253	79	99	95	1
5	437.5	1922	282.53	0.001036	0.98	0.98	138	257	254	80	98	95	1
6	445.0	1930	286.98	0.001036	0.95	0.95	156	256	251	74	97	94	1
7	452.5	1939	291.39	0.001036	0.96	0.96	147	258	253	75	95	93	1
8	5:00.0	1945	295.810	0.001036	0.96	0.96	140	259	253	78	94	93	1

Vol = 10.99

7493

177.063 - 3.744

ΔVm= 173.319 $\overline{\sqrt{\Delta p}}$= 0.03219 $\overline{\Delta H}$= ~~0.6~~ 0.982 $\overline{Ts}$= 146 $\overline{Tm}$= 94

PES

SAMPLE RECOVERY DATA

PLANT Kent. EL Steel Run No. BO-1

DATE 5/11/00 Sample Box No. N-4 Job No. 5700.000

SAMPLE LOCATION Bag House Outlet Filter No. 300304

TRAIN PREPARER AH

SAMPLE RECOVERY PERSON Gleary

COMMENTS Very light loading

FRONT HALF

Acetone Container No. _____ Liquid Level Marked _____ Sealed _____

Filter Container No. _____ Sealed _____

Description of Filter _____

Samples Stored and Locked _____

Container No. _____

Liquid Level Marked _____ Sealed _____

IMP. NO.	CONTENTS	INITIAL VOL (ml)	WEIGHT (grams)		
			INITIAL	FINAL	NET
1	DI WATER	100	697.4	698.1	.7
2	DI WATER	100	714.5	720.4	5.9
3	—	—	615.2	618.4	3.2
4	Silica Gel	250	752.7	796.4	33.7
5					
6					
TOTAL			a 779.8	2873.3	43.5

FIELD DATA SHEET

K = 2415.8

Plant: KES
Sampling Location: Baghouse outlet
Run Number: Bo-2 Date: 5/16/00
Pretest Leak Rate: 0.002 cfm @ 15 in. Hg.
Pretest Leak Check: Pitot: NA Orsat: ok

Sample Type: Part. Operator: ale
Pbar: 29.45 Ps: -0.1
CO2: 0 O2: 21
Probe Length/Type: 2' Glass Pitot #: 2M
Stack Diameter: 12 As:

Nozzle ID: 1.240 Thermocouple #: 2M
Assumed Bws: 1 Filter #: 300382
Meter Box #: 2 Y: .984 ΔH@: 1.721
Post-Test Leak Rate: cfm @ in. Hg.
Post-Test Leak Check: Pitot: NA Orsat: ok

	Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O Desired	Actual	Stack Temp. (Ts)	Temperature °F Probe	Filter	Impinger Temp. °F	Dry Gas Meter Temp. Inlet (Tm in °F)	Outlet (Tm out °F)	Pump Vacuum (in. Hg)
Comp 10	0	0	0715	296.400										
	1	7.5	0722	303.64	0.000993	2.1	2.1	146	256	252	83	78	78	3
	2	15.0	0730	309.72	0.000993	2.1	2.1	147	256	251	80	82	79	3
	3	22.5	0737	315.88	0.000993	2.2	2.2	143	256	252	80	83	80	3
	4	30.0	0745	322.01	0.000993	2.1	2.1	146	256	250	80	84	81	3
	5	37.5	0752	328.13	0.000993	2.1	2.1	154	256	253	80	87	82	3
	6	45.0	0800	334.26	0.000993	2.1	2.1	155	255	252	80	87	~~80~~	3
	7	52.5	0807	340.36	0.000993	2.1	2.1	154	256	251	80	89	82 83	3
	8	60.0	0815	346.22	0.000993	2.1	2.1	153	256	251	80	89	84	3
Comp 9	1	1:07:30	0822	351.99	0.000993	2.1	2.1	157	256	250	78	90	84	3
	2	1:15:00	0830	358.37	0.000993	2.1	2.1	158	256	252	79	90	84	3
	3	1:22:50	0837	364.53	0.000993	2.1	2.1	157	256	251	80	90	85	3
	4	1:30:00	0845	371.22	0.000993	2.1	2.1	167	256	251	80	91	86	3
	5	1:37:30	0852	376.74	0.000993	2.1	2.1	159	255	251	85	91	86	3
	6	1:45:00	0905	382.34	0.000993	2.1	2.1	156	257	250	85	89	86	3
	7	1:52:30	0912	388.51	0.000993	2.1	2.1	156	256	253	82	91	86	3
	8	2:00:00	0920	394.49	0.000993	2.1	2.1	166	256	252	79	92	87	3
Comp 13	1	2:07:30	0927	400.55	0.000993	2.1	2.1	172	256	252	80	92	86	3
	2	2:15:00	0935	406.71	0.000993	2.1	2.1	177	257	251	85	93	88	3
*	3	2:22:30	0942	413.32	0.000993	2.1	2.1	183	256	251	87	92	87	3
	4	2:30:00	0950	418.10	0.000993	2.0	2.0	190	256	252	90	93	89	3
	5	2:37:30	0958	424.65	0.000993	2.0	2.0	193	257	252	95	93	88	3
	6	2:45:00	1005	430.02	0.000993	2.1	2.1	190	257	252	100	93	88	3
	7	2:52:30	1012	436.89	0.000992	2.1	2.1	172	256	253	95	94	90	3
	8	3:00:00	1020	443.98	0.000993	2.1	2.1	175	256	251	88	95	90	3

MEQ STOP - ~~372.37~~ critical limited.

* EXCESSIVE STACK TEMP. → INTENTER BAGHOUSE

ΔVm= _____ $\overline{\sqrt{\Delta p}}$= _____ $\overline{\Delta H}$= _____ $\overline{Ts}$= _____ $\overline{Tm}$= _____

FIELD DATA SHEET

Plant: KES
Sampling Location: BAGHOUSE OUTLET
Run Number: B02 Date: 5/12/00
Pretest Leak Rate: 0.002 cfm @ 15 in. Hg.
Pretest Leak Check: Pitot: N/A Orsat: N/A

Sample Type: PART. Operator: RK/RW
Pbar: 29.45 Ps: -0.1
CO2: 0 O2: 21
Probe Length/Type: 2' GLASS Pitot #: 2 M
Stack Diameter: 5381 ft² As:

Nozzle ID: 1.240 Thermocouple #: 2 M
Assumed Bws: 1 Filter #: 5003B2
Meter Box #: 2 Y: .987 ΔH@: 1.721
Post-Test Leak Rate: .001 cfm @ 5 in. Hg.
Post-Test Leak Check: Pitot: N/A Orsat: N/A

comp 14

Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O Desired	Orifice Pressure Differential (ΔH) in H2O Actual	Stack Temp. (Ts)	Temperature °F Probe	Temperature °F Filter	Impinger Temp. °F	Dry Gas Meter Temp. Inlet (Tm in °F)	Dry Gas Meter Temp. Outlet (Tm out °F)	Pump Vacuum (in. Hg)
			443.98										
1	3:07:30	1027	449.04	0.000993	2.1	2.1	170	257	258	90	94	90	3
2	3:15:00	1035	455.54	0.000993	2.1	2.1	164	256	254	82	95	91	3
3	3:22:30	1042	461.59	0.000993	2.1	2.1	165	257	253	75	95	92	3
4	3:30:00	1050	468.4	0.000993	2.2	2.2	157	257	253	74	95	91	3
5	3:37:30	1057	474.45	0.000993	2.2	2.2	147	257	253	72	95	92	3
6	3:45:00	1105	480.91	0.000993	2.2	2.2	145	252	523	74	95	91	3
7	3:52:30	1112	487.37	0.000993	2.2	2.2	157	257	252	80	95	91	3
8	4:00:00	1120	493.799	0.000993	2.1	2.1	162	256	253	83	95	92	3

ΔVm= 197.399 $\sqrt{\Delta p}$= .03151 $\overline{\Delta H}$= 2.11 $\overline{Ts}$= 162 $\overline{Tm}$= 89

PES

SAMPLE RECOVERY DATA

PLANT KES Run No. BO-2

DATE 5/12/00 Sample Box No. N-3 Job No. 5700.000

SAMPLE LOCATION Baghouse Outlet Filter No. BO.387

TRAIN PREPARER AH

SAMPLE RECOVERY PERSON G Cox

COMMENTS Clear

FRONT HALF

Acetone Container No. _____ Liquid Level Marked _____ Sealed _____

Filter Container No. _____ Sealed _____

Description of Filter _____

Samples Stored and Locked _____

BACK HALF/MOISTURE

Container No. _____

Liquid Level Marked _____ Sealed _____

IMP. NO.	CONTENTS	INITIAL VOL (ml)	WEIGHT (grams)		
			INITIAL	FINAL	NET
1	~~SI~~ DI WATER	100	657.5	692.4	34.9
2	DI WATER	100	628.7	653.0	24.3
3	—	—	510.8	515.6	4.8
4	Silica Gel	250	768.4	805.5	37.1
5					
6					
TOTAL			2565.4	2666.5	101.1

FIELD DATA SHEET

K=2391.1

Plant: KES
Sampling Location: Baghouse Outlet
Run Number: Bo-3 Date: 5/12/00
Pretest Leak Rate: 0.003 cfm @ 15 in. Hg.
Pretest Leak Check: Pitot: — Orsat: —

Sample Type: Part. Operator: TW/RK
Pbar: 29.45 Ps: -0.1
CO2: 0 O2: 21
Probe Length/Type: 2' glass Pitot #: —
Stack Diameter: _____ As: _____

Nozzle ID: 1.240 Thermocouple #: 2m1
Assumed Bws: 1 Filter #: 300251
Meter Box #: 2 Y: 0.988 ΔH@: 1.721
Post-Test Leak Rate: .003 cfm @ 5 in. Hg.
Post-Test Leak Check: Pitot: NA Orsat: NA

	Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O Desired	Actual	Stack Temp. (Ts)	Temperature °F Probe	Filter	Impinger Temp. °F	Dry Gas Meter Temp. Inlet (Tm in °F)	Outlet (Tm out °F)	Pump Vacuum (in. Hg)
Cmp 18	0	0	1218	494.320										
	1	7.5	1225	499.87	0.000763	1.66	1.66	145	257	252	65	90	90	2
	2	15.0	1232	505.5	0.000763	1.62	1.62	160	257	252	72	92	90	2
	3	22.5	1240	511.15	0.000763	1.61	1.7	167	257	252	76	93	91	2
	4	30.0	1248	516.74	0.000763	1.60	1.6	172	257	254	79	95	91	2
	5	37.5	1255	521.55	0.000763	1.61	1.7	169	258	254	70	95	92	2
	6	45	1303	527.85	0.000763	1.59	1.6	174	258	255	66	95	92	2
	7	52.5	1310	533.41	0.000763	1.61	1.7	168	258	254	67	96	92	2
	8	60.0	1318	539.96	0.000763	1.62	1.7	162	256	254	68	96	92	2
Cmp 17	1	1:07:30	1325	544.74	0.000763	1.62	1.7	165	258	255	73	98	92	2
	2	1:15:00	1333	550.17	0.000763	1.64	1.6	160	258	254	72	98	94	2
	3	1:22:30	1340	555.81	0.000763	1.65	1.7	156	257	253	75	99	93	2
	4	1:30:00	1348	561.33	0.000763	1.63	1.6	164	257	254	75	98	95	2
	5	1:37:30	1355	566.89	0.000763	1.64	1.6	161	257	254	75	99	95	2
	6	1:45:00	1403	572.57	0.000763	1.64	1.6	159	258	254	75	99	96	2
	7	1:52:30	1410	577.86	0.000763	1.64	1.6	160	256	251	77	100	95	2
	8	2:00:00	1418	583.41	0.000763	1.63	1.6	164	256	254	66	100	96	2
Cmp 19	1	2:07:30	1425	588.98	0.000763	1.60	1.6	175	258	252	64	100	97	2
	2	2:15:00	1433	594.51	0.000763	1.59	1.6	180	258	254	70	101	97	2
	3	2:22:30	1440	600.08	0.000763	1.60	1.6	177	257	253	73	100	97	2
	4	2:30:00	1448	605.64	0.000763	1.61	1.6	175	256	252	75	101	97	2
	5	2:37:30	1455	611.22	0.000763	1.60	1.6	177	257	252	82	102	97	2
	6	2:45:00	1503	616.78	0.000763	1.61	1.6	175	257	253	83	103	98	2
	7	2:52:30	1510	622.41	0.000763	1.61	1.6	175	258	254	83	102	98	2
	8	3:00:00	1518	627.92	0.000763	1.62	1.6	171	257	254	77	102	98	2

ΔVm= _____ $\overline{\sqrt{\Delta p}}$= 0.02762 $\overline{\Delta H}$= 1.62 $\overline{T_s}$= 168 $\overline{T_m}$= 97

K=2391.1

FIELD DATA SHEET

Plant: KES
Sampling Location: BAGHOUSE OUTLET
Run Number: BO-3 Date: 5/12/00
Pretest Leak Rate: 0.003 cfm @ 15 in. Hg.
Pretest Leak Check: Pitot: — Orsat: —

Sample Type: PART Operator: TW/RR
Pbar: 29.45 Ps: -0.1
CO2: 0 O2: 21
Probe Length/Type: 2' GLASS Pitot #: Tm1
Stack Diameter: _____ As: _____

Nozzle ID: 1.240 Thermocouple #: 2-M-1
Assumed Bws: 1 Filter #: 300251
Meter Box #: 2 Y: 0.988 ΔH@: 1.721
Post-Test Leak Rate: 003 cfm @ 5 in. Hg.
Post-Test Leak Check: Pitot: — Orsat: —

Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft³	Velocity Head (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O		Stack Temp. (Ts)	Temperature °F		Impinger Temp. °F	Dry Gas Meter Temp.		Pump Vacuum (in. Hg)
					Desired	Actual		Probe	Filter		Inlet (Tm in°F)	Outlet (Tm out°F)	
			627.92										
1	3:01:30	1525	633.48	0.000763	1.61	1.6	175	258	254	75	104	98	2
2	3:15:00	1533	639.03	0.000763	1.60	1.6	179	257	255	76	104	99	2
3	3:22:30	1540	644.57	0.000763	1.62	1.6	171	258	253	80	104	99	2
4	3:30:00	1548	650.19	0.000763	1.62	1.6	170	256	251	85	103	99	2
5	3:37:30	1555	655.62	0.000763	1.63	1.6	169	257	253	86	102	99	2
6	3:45:00	1603	661.45	0.000763	1.61	1.6	175	258	254	72	103	99	2
7	3:52:30	1610	666.7	0.000763	1.63	1.6	169	256	252	69	103	99	2
8	4:00:00	1618	672.672	0.000763	1.63	1.6	169	252	251	72	104	100	2

Comp. 20

ΔVm= 178.352 $\overline{\sqrt{\Delta p}}$= 0.02762 $\bar{i}$= 1.62 $\bar{T}s$= 168 $\bar{T}m$= 97

2/2

PES

SAMPLE RECOVERY DATA

PLANT Kentucky Electric Steel Run No. BO-3

DATE 5/12/00 Sample Box No. N-7 Job No. 5700.000

SAMPLE LOCATION Baghouse Outlet Filter No. 300251

TRAIN PREPARER AH

SAMPLE RECOVERY PERSON

COMMENTS Particulate Train

FRONT HALF

Acetone Container No. _____ Liquid Level Marked _____ Sealed _____

Filter Container No. _____ Sealed _____

Description of Filter _____

Samples Stored and Locked _____

BACK HALF/MOISTURE

Container No. _____

Liquid Level Marked _____ Sealed _____

IMP. NO.	CONTENTS	INITIAL VOL (ml)	WEIGHT (grams)		
			INITIAL	FINAL	NET
1	DI WATER	100	659.5	692.1	32.6
2	DI WATER	100	689.1	714.8	25.7
3	—	—	582.4	585.8	3.4
4	Silica Gel	250	705.3	736.6	31.3
5					
6					
TOTAL			2636.3	2729.3	93.0

PROJECT ANALYTICAL SHEET

NAME: KES

PROJECT NUMBER: 5700-000

PROJECT MANAGER: R. Kolde

PROJECT DATE: 5-12-00

METHOD: M5

NUMBER OF SITES: 1

RUN NO.	PES NO.	#/DESCRIPTION	TARE MASS	FINAL MASS	NET MASS
BO-1	00-511	Filter 300304	351.95	355.85	3.9 3.75
BO-1	00-512	Acetone 2028	108441.4	108,450.25	8.85 8.60
BO-1	00-513	Back ½ 2011	110701.6	110710.6	9.0 8.80
BO-2	00-514	Filter 300382	351.45	362.0	10.55 10.35
BO-2	00-515	Acetone 2037	107717.75	107,725.05	7.3 7.05
BO-2	00-516	Back ½ 2005	105952.05	105960.2	8.15 7.95
BO-3	00-517	Filter 300251	350.55	351.75	1.2 0.95
BO-3	00-518	Acetone 2020	107984.1	107,990.45	6.35 6.1
BO-3	00-519	Back ½ 1996	109868.65	109876.15	7.50 7.25

PROJECT ANALYTICAL SHEET

SITE: _____ RUN NO.: 130-1

FILTER NO.: 300304 I.D. NO.: 00-511

FINAL MASS: TARE MASS: 351.95

DATE/TIME	NAME	MASS
#1 5/23 0724	AH	356.0
#2 5/23 1500	AH	355.7 ✓
#3		
#4		

AVG. MASS: 355.85

NET GAIN: ~~3.9~~ 3.75

F/H BEAKER NO.: 2028 I.D. NO.: 00-512

FINAL MASS: TARE MASS: 108441.4

DATE/TIME	NAME	MASS
#1 5/23 0724	AH	108,450.5
#2 5/23 1502	AH	108,450.0 ✓
#3		
#4		

AVG. MASS: 108,450.25

NET GAIN: 8.85 8.6

B/H BEAKER NO.: 2011 I.D. NO.: 00-5-13

FINAL MASS: TARE MASS: 110701.6

DATE/TIME	NAME	MASS
#1 5/24/00 1620	DA	110710.8
#2 5/25/00 820	DA	110710.4 ✓
#3		
#4		

AVG. MASS: 110710.6

NET GAIN: 9.0 8.8

PROJECT ANALYTICAL SHEET

SITE: _____ RUN NO.: 302

FILTER NO.: 300382 I.D. NO.: 00-514

FINAL MASS: TARE MASS: 351.45

DATE/TIME	NAME	MASS
#1 5/23 0726	AH	367.2
#2 5/23 1501	AH	361.8
#3		
#4		

AVG. MASS: 362.0

NET GAIN: ~~10.55~~ 10.35

F/H BEAKER NO.: 2037 I.D. NO.: 00-515

FINAL MASS: TARE MASS: 107717.75

DATE/TIME	NAME	MASS
#1 5/23 0726	AH	107,725.3
#2 5/23 1501	AH	107,724.8 ✗
#3		
#4		

AVG. MASS: 107,725.05

NET GAIN: ~~7.3~~ 7.05

B/H BEAKER NO.: 2005 I.D. NO.: 00-516

FINAL MASS: TARE MASS: ~~105952.05~~ 105952.4

DATE/TIME	NAME	MASS
#1 5/24/00 1620	DA	105960.~~08~~ 4
#2 5/25/00 820	DA	105960.0 ✗
#3		
#4		

AVG. MASS: 105960.2

NET GAIN: ~~8.15~~ 7.95

PROJECT ANALYTICAL SHEET

SITE: _____ RUN NO.: B0-3

FILTER NO.: 300251 I.D. NO.: 00-517

FINAL MASS: TARE MASS: 350.55

DATE/TIME	NAME	MASS
#1 5/23 0727	AH	352.0
#2 5/23 1501	AH	351.5 ☆
#3		
#4		

AVG. MASS: 351.75

NET GAIN: 1.2 0.95

F/H BEAKER NO.: 2020 I.D. NO.: 00-5-18'

FINAL MASS: TARE MASS: 107984.1

DATE/TIME	NAME	MASS
#1 5/23 0727	AH	107,990.7
#2 5/23 1502	AH	107,990.2 ☆
#3		
#4		

AVG. MASS: 107,990.45

NET GAIN: 6.35 6.1

B/H BEAKER NO.: 1996 I.D. NO.: 00-519

FINAL MASS: TARE MASS: 109868.65

DATE/TIME	NAME	MASS
#1 5/24/00 1620	DA	109876.4
#2 5/25/00 820	DA	109875.9 ☆
#3		
#4		

AVG. MASS: 109876.15

NET GAIN: 7.50 ~7.25

Appendix E

Example Calculations

Nomenclature and Dimensions

An	=	Cross-sectional area of sampling nozzle, **ft^2**
As	=	Cross-sectional area of stack, **ft^2**
Bws	=	Proportion by volume of water vapor in the gas stream, dimensionless
Cp	=	**Pitot** tube coefficient, dimensionless
Cs	=	Concentration of pollutant matter in stack gas-dry basis, grains per dry standard cubic foot **(gr/dscf)**
%CO	=	Percent of carbon monoxide by volume, dry basis
$\%CO_2$	=	Percent of carbon dioxide by volume, dry basis
ΔH	=	Average pressure drop across the sampling meter flow **ofifice,** inches of water (in. **H_2O)**
GCV	=	Gross calorific value, **Btu/lb**
I	=	Percent of isokinetic sampling
La	=	Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change/ equal to 0.020 cubic foot per minute or 4% of the average sampling rate, whichever is less
Md	=	Dry molecular weight, **lb/lb-mole**
Mn	=	Total amount of pollutant matter collected, milligrams (mg)
Ms	=	Molecular weight of stack gas (wet basis), **lb/lb-mole**
$\%N_2$	=	Percent of nitrogen by volume, dry basis
$\%O_2$	=	Percent of oxygen by volume, dry basis
ΔP	=	Velocity head of stack gas, inches of water (in. **H_2O)**
Pbar	=	Barometric pressure, inches of mercury (in. Hg)
Ps	=	Absolute stack gas pressure, inches of mercury (in. Hg)
Pstd	=	Gas pressure at standard conditions, inches of mercury (29.92 in. Hg)

pmr	=	Pollutant matter emission rate, pounds per hour **(lb/hr)**
Qs	=	Volumetric flow rate - wet basis at stack conditions, actual cubic feet per minute (acfm)
Qsstd	=	Volumetric flow rate - dry basis at stack conditions, actual cubic feet per minute (dscfm)
Tm	=	Average temperature of dry gas meter, **°R**
Ts	=	Average temperature of stack gas, **°R**
Tstd	=	Temperature at standard conditions, **528°R**
Vlc	=	Total volume of liquid collected in impingers, **ml**
vsg	=	Weight of moisture collected in silica gel, grams
Vm	=	Volume of dry gas sampled at meter conditions, **ft^3**
Vmstd	=	Volume of dry gas sampled at standard conditions, **ft^3**
vs	=	Average stack gas velocity at stack conditions, **ft/s**
Vwstd	=	Volume of water vapor at standard conditions, scf
γ	=	Dry gas meter calibration factor, dimensionless
Θ	=	Total sampling time, minutes

NOTE: Standard conditions **= 68°F** and **29.92** in. Hg

Example Calculations for Pollutant Emissions

1. Volume of dry gas sampled corrected to standard conditions, ft3.
Note: Vm must be corrected for leakage if any leakage rates exceed La.

$$Vwstd = 17.647 * Vm * \gamma * \frac{Pbar + \frac{AH}{13.6}}{Tm, \ ^{\circ}R}$$

2. Volume of water vapor at standard conditions, **ft³.**

$$Vmstd = 0.04707 * Vlc + 0.04715 * Vsg$$

3. Moisture content in stack gas, dimension less.

$$Bws = \frac{Vwstd}{Vwstd + Vmstd}$$

4. Dry molecular weight of stack gas, lbhb -mole.

$$Md = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * (\%N_2 + \%CO)$$

5. Molecular weight of stack gas, lbhb-mole.

$$Ms = Md(I\text{-}Bws) + 18 * Bws$$

6. Stack velocity at stack conditions, **f/s.**

$$Vs = 85.49 * Cp * ave\sqrt{\Delta P} * \sqrt{\frac{Ts, \ ^{\circ}R}{Ps * Ms}}$$

7. Stack gas volumetric flow rate at stack conditions, cfm.

$$Qs = 60 * Vs * As$$

8. Dry stack gas volumetric flow rate at standard conditions, cfm.

$$Qsstd = 17.647 * Qs * \frac{Ps}{Ts, \ ^{\circ}R} * (1 - Bws)$$

9. Concentration in gr/dscf.

$$Cs = 0.01543 * \frac{Mn}{Vmstd}$$

10. Concentration in lb/dscf.

$$Cs,\ lb/dscf = \frac{gr/dscf}{7000}$$

11. Pollutant mass emission rate, lb/hr.

$$Pmr,\ lb/hr = lb/dscf * Qsstd * 60$$

12. Pollutant mass emission rate, lb/MMBtu.

$$pmr,\ lb/MMBtu = \frac{pmr,\ lb/hr}{MMBtu/hr}$$

13. F-factor, Fd.

$$Fd = \frac{10^6 * (3.64 * \%H) + (1.53 * \%C) + (0.57 * \%S) + (0.14 * \%N) - (0.46 * \%O_2)}{GCV\ (Btu/lb)}$$

14. F-factor, pollutant mass emission rate, lb/MMBtu.

$$= \frac{lb/dscf * Fd * 20.9}{(20.9 - \%O_2)}$$

15. Heat imput, MMBtu/hr fuel.

$$= \frac{GVC\ (Btu/lb) * Feed\ Rate\ (lb/hr)}{10^6}$$

16. Heat input, MMBtu/hr, F-factor.

$$= \frac{Qsstd}{Fd} * ((20.9 - \%O_2) + 20.9) * 60$$

17. Volume of dry gas sampled corrected to standard conditions, m^3.

$$Vmstd\ (m^3) = Vmstd\ (ft^3) * 0.02831$$

18. Concentration in ugidscm.

$$ugidscm = Target\ Catch,\ micrograms\ /\ Vmstd\ (m^3)$$

19. **Concentration** corrected to 7% oxygen.

$$ugldscm\ @\ 7\%\ O_2 = ugldscm * (20.9-7)\ /\ (20.9-measured\ O_2)$$

20. Concentration, part per million, dry basis.

$$ppm,\ dry = ppm,\ wet\ basis \div \left(1 - \frac{BWS,\ \%}{Fd}\right)$$

21. Pollutant Mass Emission Rate, pound per hour.

$$PMR,\ lblhr = \frac{ppm,\ dry * Compound\ Molecular\ Weight}{(385.3 \times 10^6)} * dscfm * 60$$

Common Molecular Weights (MW)

Total Gaseous Organic Compound (TGOC)	=	**44.09**
Sulfur Dioxide (SO_2)	=	**64.05**
Nitrogen Oxides (NO_x)	=	**46.00**
Carbon Monoxide (CO)	=	28.01
Oxygen (O_2)	=	**32.00**
Carbon Dioxide (CO_2)	=	**44.01**

22. Removal Efficiency (RE), percent.

$$RE = (Inlet\ lb/hr - Outlet\ lblhr\ /\ Inlet\ lb/hr) * 100$$

Summary of Stack Gas Parameters and Test Results

5700.000

Kentucky Electric Steel, INC

US EPA Test Method **2** - Velocity

Harsell Baghouse Inlet

	RUN NUMBER	***1A***	***1B***	***2A***	***2B***	***3A***	***3B***	***Average***
	RUN DATE	***5/11/00***		***5/12/00***		***5/12/00***		
	RUN TIME	***730***	***705***	***630***	***1050***	***1050***	***1619***	
	MEASURED DATA							
P_{static}	Stack Static Pressure, inches H_2O	5.10	4.50	5.20	4.50	4.50	4.60	4.73
P_{bar}	Barometric Pressure, inches Hg	29.60	29.60	29.45	29.45	29.45	29.45	29.50
CO_2	Carbon Dioxide content, % by volu	0.0	0.0	0.0	0.0	0.0	0.0	0.00
O_2	Oxygen content, % by volume	21.0	21.0	21.0	21.0	21.0	21.0	21.00
N_2	Nitrogen content, % by volume	79.0	79.0	79.0	79.0	79.0	79.0	79.00
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84	0.84	0.84	0.84
	Circular Stack? 1=Y,0=N:	0	0	0	0	0	0	0.00
As	Diameter or Dimensions, inches:	18348.00	18348.00	18348.00	18348.00	18348.00	18348.00	18348.00 139" x 132"
A	Stack Area, ft^2	127.4	127.4	127.4	127.4	127.4	127.4	127.42
B_{ws}	Moisture, % by volume	1.20	1.20	2.50	2.60	2.60	2.70	2.13
	Square root Delta P	1.36	1.3	1.34	1.4	1.4	1.3	1.34
Ts	Stack Temp	142.00	130.0	168.00	146.0	146.0	191.0	153.83
	CALCULATED DATA							
P_s	Stack Pressure, inches Hg	29.98	29.93	29.83	29.78	29.78	29.79	29.85
M_d	Molecular Weight (d.b.), lb/lb•mole	28.84	28.84	28.84	28.84	28.84	28.84	28.84
M_s	Molecular Weight (w.b.), lb/lb•mole	28.71	28.71	28.57	28.56	28.56	28.55	28.61
V_s	Stack Gas Velocity, ft/s	81.6	79.2	82.4	82.2	82.2	81.1	81.46
Q_a	Stack Gas Volumetric flow, acfm	624,197	605,253	630,169	628,212	628,212	620,372	622735.84
Q_s	Stack Gas Volumetric flow, dscfm	541,677	535,131	514,859	530,431	530,431	487,222	523291.69
Q_s	Stack Gas Volumetric flow, dscmm	15,339	15,153	14,579	15,020	15,020	13,797	14817.97

Summary of Stack Gas Parameters and Test Results
5700.000
Kentucky Electric Steel, INC.
US EPA Test Method ***5*** - Particulate Matter
Harsell Baghouse Outlet

	RUN NUMBER	***BO-1***	***BO-2***	***BO-3***	
	RUN DATE	***5/11/00***	***5/12/00***	***5/12/00***	***Average***
	RUN TIME	***1355-1945***	***0715-1120***	***1218-1618***	
	MEASURED DATA				
P_{static}	Stack Static Pressure, inches H_2O	-0.10	-0.10	-0.10	-0.10
y	Meter Box Correction Factor	0.988	0.988	0.988	0.988
P_{bar}	Barometric Pressure, inches Hg	29.60	29.45	29.45	29.50
V_m	Sample Volume, ft^3	173.319	197.399	178.352	183.023
$Dp^{1/2}$	Average Square Root Dp, (in. $H_2O)^{1/2}$	0.0322	0.0315	0.0276	0.0304
DH	Avg Meter Orifice Pressure, in. H_2O	0.96	2.11	1.62	1.56
T_m	Average Meter Temperature, °F	94	89	97	93
T_s	Average Stack Temperature, °F	146	162	168	159
V_{lc}	Condensate Collected, ml	43.5	101.1	93.0	79.2
CO_2	Carbon Dioxide content. % by volume	0.0	0.0	0.0	0.0
O_2	Oxygen content, % by volume	21.0	21.0	21.0	21.0
N_2	Nitrogen content, % by volume	79.0	79.0	79.0	79.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
	Circular Stack? 1=Y,0=N:	0	0	0	
As	Diameter or Dimensions, inches:	774862.95	774862.95	774862.95	774862.95
Q	Sample Run Duration, minutes	300	240	240	260
D_n	Nozzle Diameter, inches	1.000	1.240	1.240	1.160
	CALCULATED DATA				
A_n	Nozzle Area, ft^2	0.005454	0.008386	0.008386	0.007408
$V_{m(std)}$	Standard Meter Volume, ft^3	161.778	185.522	165.012	170.771
$V_{m(std)}$	Standard Meter Volume, m^3	4.581	5.253	4.673	4.836
Q_m	Average Sampling Rate, dscfm	0.539	0.773	0.688	0.667
P_s	Stack Pressure, inches Hg	29.59	29.44	29.44	29.49
B_{ws}	Moisture, % by volume	1.2	2.5	2.6	2.1
$B_{ws(sat)}$	Moisture (at saturation), % by volume	23.1	34.3	39.5	32.3
V_{wstd}	Standard Water Vapor Volume, ft^3	2.048	4.759	4.378	3.728
$1-B_{ws}$	Dry Mole Fraction	0.988	0.975	0.974	0.979
M_d	Molecular Weight (d.b.), lb/lb•mole	28.84	28.84	28.84	28.84
M_s	Molecular Weight (w.b.), lb/lb•mole	28.70	28.57	28.56	28.61
V_s	Stack Gas Velocity, ft/s	2.0	1.9	1.7	1.9
A	Stack Area, ft^2	5381.0	5381.0	5381.0	5380.99
Q_a	Stack Gas Volumetric flow, acfm	630,570	628,028	553,007	603,868
Q_s	Stack Gas Volumetric flow, dscfm	536,390	511,287	445,529	497,735
Q_s	Stack Gas Volumetric flow, dscmm	15,189	14,478	12,616	[illegible]
I	Isokinetic Sampling Ratio, %	99.2	97.0	99.0	98.4

Summary of Stack Gas Parameters and Test Results
5700.000
Kentucky Electric Steel, INC.
US EPA Test Method 5 - Particulate Matter
Harsell Baghouse Outlet

	RUN NUMBER	***BO-1***	***BO-2***	***BO-3***	
	RUN DATE	***5/11/00***	***5/12/00***	***5/12/00***	***Average***
	RUN TIME	***1355-1945***	***0715-1120***	***1218-1618***	
	EMISSIONS DATA				
	Particulate Matter				
PM	**Filter Weight Gain, mg**	3.9	10.55	1.2	
PM	**Beaker Weight Gain, mg**	17.85	15.45	13.85	
PM	**Total Catch, g**	0.0218	0.0260	0.0151	0.0209
C_{PM}	**Concentration, grldscf**	**2.07E-03**	**2.16E-03**	**1.41E-03**	**1.88E-03**
C_{PM}	**Concentration, lbldscf**	**2.96E-07**	**3.09E-07**	**2.01E-07**	**2.69E-07**
E_{PM}	**Emission Rate, lblhr**	**9.54**	**9.48**	**5.37**	**8.13**

Appendix F

Calibration Data

PACIFIC ENVIRONMENTAL SERVICES, INC.

CALIBRATION PROCEDURES AND RESULTS

All of the equipment used is calibrated in accordance with the procedures outlined in the Quality Assurance Handbook for Air Pollution Measurement Systems. Volume III.* The following pages describe these procedures and include the data sheets.

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*EPA 600/4-77-027b

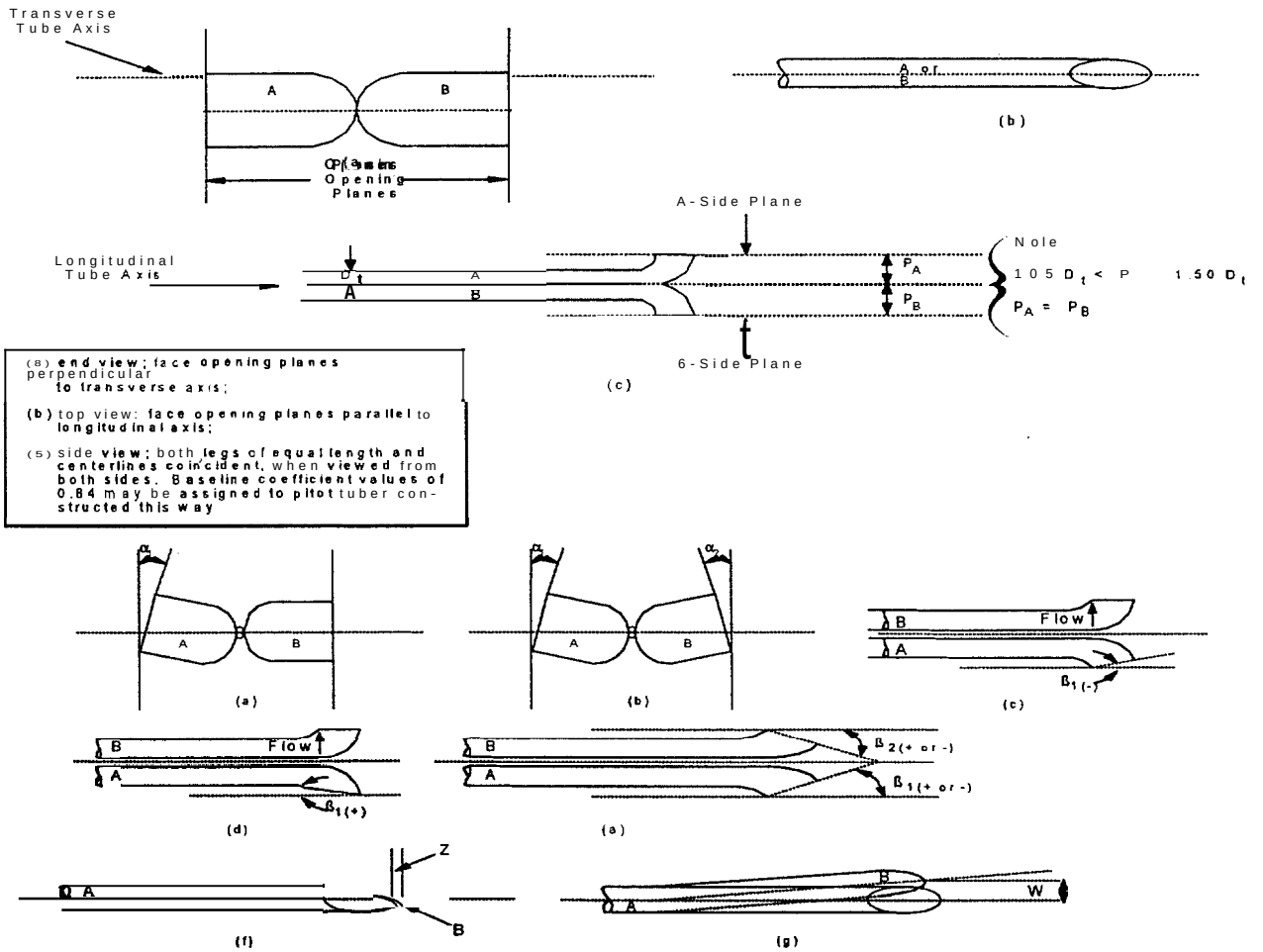
PACIFIC ENVIRONMENTAL SERVICES, INC.

Nozzle Diameter

Each nozzle used in these tests is calibrated by making three separate measurements and calculating the average. If a deviation of more than 0.004 of an inch is found between any two measurements, the nozzle is either discarded or reamed out and remeasured. A micrometer is used for measuring. These calibration data are shown in the following Nozzle Calibration data **sheet(s).**

Pitot Tube Calibration

Each **pitot** tube used in sampling meets all requirements of EPA Method 2, Section 4.1.** Therefore, a baseline coefficient of 0.84 is assigned to each **pitot** tube. The following pages show the alignment requirements of Method 2 and the **Pitot** Tube Inspection Data **Sheet(s)** for each **pitot** tube used during the test program.



**40 CFR 60, Appendix A, July 1995

PACIFIC ENVIRONMENTAL SERVICES

7209 East Kemper Rd.
Cincinnati, OH 46249
613.489.6611
513.489.6619 fax

PITOT TUBE CALIBRATIONS

Pitot ID	Date Calibrated	α_1	B_1	α_2	B_2	Y	θ	A	z	w	P_α	P_β	D_t	A/2/D_t	Accept/Reject
2-M-1	1113100	1.8	0.1	1.4	0.1	0.1	0.6	0.948	0.002	0.010	0.474	0.474	0.375	1.264	ACCEPT
2-M-2	1/13/00	0.6	1.4	2.8	0.7	1.1	1.7	0.955	0.018	0.028	0.477	0.478	0.375	1.273	ACCEPT
3-1	10/29/99	1.3	1.6	3.8	3.7	2.1	0.3	1.077	0.039	0.006	0.538	0.539	0.364	1.479	ACCEPT
3-M-1	10/29/99	1.1	1.8	0.9	0.1	1.4	1.7	0.948	0.023	0.028	0.474	0.474	0.375	1.264	ACCEPT
3-M-2	10/28/99	1.6	0.8	0.8	0.6	0.7	0.8	0.954	0.012	0.013	0.477	0.477	0.375	1.272	ACCEPT
3-M-3	1/13/00	0.7	0.2	1.6	0.2	2.6	1.6	0.945	0.043	0.026	0.473	0.472	0.375	1.260	ACCEPT
3-X-2	10/28/99	0.4	0.4	0.7	0.7	0.7	0.9	0.945	0.012	0.015	0.472	0.473	0.375	1.260	ACCEPT
3-X-1	10/29/99	0.4	0.6	0.8	0.6	0.1	0.2	0.945	0.002	0.003	0.473	0.472	0.375	1.260	ACCEPT
4-M-1	10/28/99	0.3	0.6	0.5	0.4	0.6	0.4	0.949	0.010	0.007	0.474	0.475	0.375	1.265	ACCEPT
4-M-2	10/29/99	0.7	0.4	0.2	1.4	1.1	0.4	0.958	0.018	0.007	0.479	0.479	0.375	1.277	ACCEPT
4-X-1	10/29/99	4.7	1.2	4.4	0.4	2.7	0.4	0.945	0.045	0.007	0.472	0.473	0.375	1.260	ACCEPT
4-X-2	10/28/99	0.2	0.9	1.6	1.3	0.1	0.1	0.949	0.002	0.002	0.474	0.475	0.375	1.265	ACCEPT
4-X-3	10/28/99	0.2	0.6	0.2	0.5	0.2	0.4	0.956	0.003	0.007	0.478	0.478	0.375	1.275	ACCEPT
5' TIP	10/29/99	1.9	3.5	1.0	1.4	1.8	1.6	0.937	0.029	0.026	0.468	0.469	0.375	1.249	ACCEPT
5-I-1	10/28/99	1.6	0.8	1.0	0.8	0.1	0.7	0.968	0.002	0.012	0.484	0.484	0.375	1.291	ACCEPT
5-M-1	10/28/99	0.2	0.3	0.2	0.2	1.0	0.6	0.896	0.016	0.009	0.448	0.448	0.375	1.195	ACCEPT
5-M-2	1/13/00	0.9	0.1	3.9	3.9	1.3	1.2	0.921	0.021	0.019	0.461	0.460	0.375	1.228	ACCEPT
5-X-1	10/29/99	0.3	0.0	0.3	0.5	1.6	0.3	0.950	0.027	0.005	0.475	0.475	0.373	1.273	ACCEPT
5-X-2	10/28/99	1.6	1.4	1.2	0.7	0.7	0.7	0.947	0.012	0.012	0.474	0.473	0.372	1.273	ACCEPT
5-X-3	10/29/99	0.4	0.4	0.1	0.3	1.0	0.9	0.948	0.017	0.015	0.474	0.474	0.375	1.264	ACCEPT
5-1	10/27/99	1.4	1.3	1.0	1.4	0.7	0.8	1.042	0.013	0.015	0.521	0.521	0.375	1.389	ACCEPT
5-2	10/29/99	0.4	1.8	3.7	2.9	1.4	0.9	0.971	0.024	0.015	0.485	0.486	0.375	1.295	ACCEPT
5-3	10/28/99	0.8	0.2	0.9	1.0	0.2	0.3	1.009	0.004	0.005	0.504	0.505	0.375	1.345	ACCEPT
5 4	10/29/99	2.3	1.2	0.5	0.7	2.7	1.0	0.625	0.029	0.011	0.312	0.313	0.250	1.250	ACCEPT
5-5	10/29/99	1.0	0.8	0.8	0.5	0.5	0.6	1.022	0.009	0.011	0.511	0.511	0.375	1.363	ACCEPT
5-6	1/13/00	1.3	0.1	1.2	1.4	2.5	0.7	0.938	0.041	0.011	0.469	0.469	0.375	1.251	ACCEPT
6-1	10/27/99	1.6	1.5	1.7	1.3	0.2	0.2	0.956	0.003	0.003	0.478	0.478	0.375	1.275	ACCEPT
6-2	10/28/99	0.1	0.2	0.7	1.7	0.4	0.3	1.097	0.008	0.006	0.548	0.549	0.375	1.463	ACCEPT
6-3	1/13/00	1.9	2.1	2.6	1.7	1.5	0.1	1.041	0.027	0.002	0.520	0.521	0.375	1.388	ACCEPT
6-I-1	10/27/99	1.4	2.7	1.3	0.6	2.2	0.4	0.986	0.038	0.007	0.493	0.493	0.375	1.315	ACCEPT
6-I-2	10/28/99	0.8	0.8	1.3	1.8	0.6	0.3	0.968	0.010	0.005	0.484	0.484	0.375	1.291	ACCEPT
7-1	1/13/00	0.7	1.5	1.3	1.0	0.6	0.9	0.975	0.010	0.015	0.487	0.488	0.375	1.300	ACCEPT
7-I-1	10/29/99	0.1	1.9	0.6	1.0	0.9	0.3	0.948	0.015	0.005	0.474	0.474	0.375	1.264	ACCEPT
7-M-1	10/28/99	1.1	1.1	0.2	0.2	1.1	0.9	0.957	0.018	0.015	0.478	0.479	0.375	1.276	ACCEPT
7-M-2	10/28/99	0.4	1.2	1.9	1.8	0.7	0.8	0.923	0.011	0.013	0.462	0.461	0.375	1.231	ACCEPT
7-M-3	10/29/99	1.6	1.8	0.5	0.4	0.7	0.1	0.923	0.011	0.002	0.461	0.462	0.375	1.231	ACCEPT
8-1	10/28/99	0.6	0.8	1.9	1.6	0.3	0.1	0.934	0.005	0.002	0.467	0.467	0.375	1.245	ACCEPT
8-2	10/29/99	0.9	0.8	0.4	0.5	2.1	1.6	0.941	0.034	0.026	0.470	0.471	0.375	1.255	ACCEPT
8-3	11/4/99	1.1	0.6	0.3	1.4	0.1	0.4	0.918	0.002	0.006	0.459	0.459	0.374	1.227	ACCEPT
8-M-2	10/29/99	0.2	2.4	0.3	1.2	0.5	0.7	0.938	0.008	0.011	0.469	0.469	0.375	1.251	ACCEPT
9-M-1	10/29/99	0.1	1.7	0.2	0.8	1	1	0.982	0.017	0.017	0.491	0.491	0.375	1.309	ACCEPT
10-M-1	10/29/99	2.2	2.8	0.3	0.5	0.2	0.4	0.949	0.003	0.007	0.475	0.474	0.374	1.269	ACCEPT
11-1	10/29/99	0.8	1.9	2.5	1.8	1.3	1.5	0.970	0.022	0.025	0.485	0.485	0.351	1.382	ACCEPT
12-X-1	10/29/99	0.4	1.5	0.9	1.9	2.9	1.4	0.921	0.047	0.023	0.461	0.46	0.372	1.238	ACCEPT
12-1	10/29/99	0.3	0.4	1.1	0.6	1.2	1.2	1.125	0.024	0.024	0.563	0.562	0.375	1.500	ACCEPT

- 1 = Pitot Alone # - M - 1 = Pitot/Thermo. Combination # - X - I = Full Probe Assembly # - I - 1 = Inkonel # - T - 1 = Thermo. Alone

PACIFIC ENVIRONMENTAL SERVICES, INC.

Dry Gas Meter and Orifice Meter

Dry gas meters and orifices are calibrated in accordance with Section **3.3.2** of the QA Handbook. This procedure involves direct comparison of the dry gas meter to a reference dry test meter. The reference dry test meter is routinely calibrated using a liquid displacement technique. Before its initial use in the field, the metering system is calibrated over the entire range of operation. After each field use, the metering system is calibrated at a single intermediate setting based on the previous field test. Acceptable tolerances for the initial and final dry gas meter factors and orifice calibration factors are **± 0.02** and **± 0.20** from average, respectively.

Digital Indicators for Thermocouple Readout

A digital indicator is calibrated by feeding a series of millivolt signals to the input and comparing the indicator reading with the reading the signal should have generated. Errors did not exceed **0.5** percent **(%)** when the temperatures were expressed in degrees **Rankine.** Calibration data are included in the following Thermocouple Digital Indicator Calibration Data **Sheet(s).**

Dry Gas Thermocouples

The dry gas thermocouples are calibrated by comparing them with an **ASTM-3** thermometer at approximately **32°F,** ambient temperature, and a higher temperature between approximately **100°F** and **200°F.** The thermocouples agreed within **5°F** of the reference thermometer.

11/19/1999

PACIFIC ENVIRONMENTAL SERVICES, INC.

7209 E. Kemper Rd.
Cincinnati, Ohio 45249
Phone: 513.489.6611
Fax: 513.489.6619
wmv.pes.com

Meter Box No.: 2

Dry Gas Orifice Meter

Pb, in. Hg	29.36	RUN 1	RUN2	RUN3	RUN4	RUN5	RUN6
DH	Delta H	0.50	0.75	1.00	1.50	2.00	4.00
in Hg	Vacuum	10	10	10	10	10	10
Vw_1	Initial RTM	956.527	966.320	974.057	985.406	996.985	1009.901
Vw_2	Final RTM	965.863	973.878	985.114	996.606	#######	1022.371
Vd_1	Initial DGM	59.856	69.667	77.458	88.899	100.602	113.680
Vd_2	Final DGM	69.216	77.274	88.604	100.217	112.825	126.334
Tw	Ave. Temp RTM °	75	76	78	78	79	79
Td	Ave. Temp DGM °	78	81	84	87	88	89
	Time (min.)	22.3	15.0	19.0	16.0	15.0	11.0
$Vw_2 - Vw_1$	Net Volume RTM	9.336	7.558	11 057	11.200	12 071	12 470
$Vd_2 - Vd_1$	Net Volume DGM	9.360	7.607	11.146	11.318	12.223	12.654
	Y	1.002	1.001	1.001	1.002	0.999	0.994
	dH@	1.634	1.694	1.696	1.749	1.775	1.778

AMRAGE Y 0.988 (Reference meter correction factor of 0.988)

Average Y Range = 0.968 TO 1.008 **ACCEPT**

AMRAGE dH 1.721

Average dH@ Range = 1.521 TO 1.921 **ACCEPT**

Calculations

Y = (Vw ■ Pb * (Td + 460)) ▮ (Vd * (Pb + (dHd / 13.6)) * (Tw +460))

dH@ = 0.0317 * dHd ▮ (Pb (Td + 460)) * (((Tw +460) * t) / Vw)^2

Digital Indicator for Thermocouple Readout

TEST POINT NO.	MILLIVOLT SIGINAL	EQUIVALENT TEMP, °F	DIGITAL INDICATOR TEMP READING. °F	DIFFERENCE, %
1	4.692	0	1	0.2
2	1.520	100	100	0.0
3	3.819	200	201	0.2
4	6.092	300	299	0.1
5	8.314	400	399	0.1
6	10.560	500	501	0.1
7	22.251	1000	1001	0.1
8	29.315	1300	1300	0.0
9	36.166	1600	1601	0.0
10	42.732	1900	1899	0.0

Percent difference must be less than or equal lo 0.5 %

% difference: (Equivalent Temp,.°R - Digital Indicator Temp.. °R) * (100%) / (Equivalent Temp., °R)

Where °R = °F + 460

ACCEPT

Dry Gas Thermocouples

Reference point number	Source[a] (Specify)	Reference Thermometer Temperature,°F	Thermocouple Potentiometer Temperature,°F	Temperature Difference,[b] °F
Inlet				
1	Ambient Air	73	74	1
2	Cold Bath	42	43	1
3	Hot Balh	139	138	1
Outlet				
1	Ambient Air	73	73	0
2	Cold Bath	42	43	1
3	Hot Bath	138	137	1

[a]Type of calibrationused.

Allowable tolerance ±5°F

ACCEPT

Calibrated By : da

PACIFIC ENVIRONMENTAL SERVICES, INC.

4700 Duke Drive,
Suite 150
Mason, Ohio 45040
Phone: (513)398-2556
Fax: (513)398-3342
www.pes.com

Box No.:	MB -2	Bar. Press.(Ps):	29.23	in. Hg
Date:	MAY 25,2000	Pretest Gamma:	0.988	
Calibrated By :	G GAY	Pretest dH@:	1.721	
Plant:	KES			

		RUN 1	RUN 2	RUN 3
DH	Delta H	2.00	2.00	2.00
in Hg	Vaccum	5.00	5.00	5.00
Vw_1	Initial RTM	803.015	815.118	827.233
Vw_2	Final RTM	815.118	827.233	839.345
Vd_1	Initial DGM	673.120	685.278	697.516
Vd_2	Final DGM	685.278	697.516	709.789
Tw	Ave. Temp RTM °F	76.0	76.0	77.0
Td	Ave. Temp DGM °F	82.0	84.0	86.0
	Time (min.)	15.0	15.0	15.0
Vw_2 - Vw_1	Net Volume RTM	12.103	12.115	12.112
Vd_2 - Vd,	Net Volume DGM	12.158	12.238	12.273
	Y	1.002	1.000	0.998
	dH@	1.766	1.756	1.757

AVERAGE Y = 1.000

% Difference from Yearly Y = 1.204 ACCEPT

AVERAGE dH@ = 1.760

Calculations

Y = (Vw * Pb * (Td + 460)) 1 (Vd * (Pb + (dHd 1 13.6)) * (Tw +460))

dH@ = 0.0317 * dHd / (Pb (Td + 460)) * (((Tw +460) * time) I Vw)^2

Posttest Dry Gas Meter Calibration Form (English Units)

PACIFIC ENVIRONMENTAL SERVICES, INC.

Stack Thermocouples

Each thermocouple is calibrated by comparing it with an ASTM-3F thermometer at approximately 32°F, ambient temperature, 212°F, and 500°F. The thermocouple reads within 1.5 percent (%) of the reference thermometer throughout the entire range when expressed in degrees Rankine. The thermocouples may be checked at ambient temperature at the test site to verify the calibration. Calibration data are included in the following Thermocouple Calibration Data Sheet(s).

PACIFIC ENVIRONMENTAL SERVICES

STACK THERMOCOUPLES

7209 East Kemper Rd.
Cincinnati, OH 45249
513.489.6611
513.489.6619 Fax
www.pes.com

Thermo. ID	Therm.	Date Calibrated	Ambient Air	Diff., %	Cold Bath	Diff., %	Hot Bath	Diff., %	Hot Oil	Diff,, %	Accept/Reject
1-T-1	Reference	1/13/00	76	0.00	46	0.00	212	0.00	451	0.00	ACCEPT
	Pitot		76		46		212		451		
2-M-1	Reference	1/27/00	75	0.00	42	0.00	210	0.00	410	0.00	ACCEPT
	Pitot		75		42		210		410		
2-M-2	Reference	1/27/00	75	0.00	42	0.00	165	0.00	418	0.00	ACCEPT
	Pitot		75		42		165		418		
3-M-1	Reference	11/3/99	65	1.14	35	0.00	201	0.00		0.00	ACCEPT
	Pitot		71		35		201		423		
3-M-2	Reference	11/2/99	74	0.00	42	0.00	208	0.00	456	0.00	ACCEPT
	Pitot		74		42		208		456		
3-M-3	Reference	1/13/00	75	0.00	36	0.00	192	0.00	410	0.00	ACCEPT
	Pitot		75		36		192		410		
3-M-4	Reference	1/27/00	75	0.00	42	0.00	212	0.00	415	0.00	ACCEPT
	Pitot		75		42		212		415		
3-T-1	Reference	10/29/99	77	0.19	42	0.00	214	0.00	393	0.23	ACCEPT
	Pitot		78		42		214		395		
3-T-2	Reference	10/29/99	77	0.00	43	0.00	212	0.00	452	0.00	ACCEPT
	Pitot		77		43		212		452		
3-T-3	Reference	1/13/00	75	0.00	46	0.00	207	0.00	423	0.00	ACCEPT
	Pitot		75		46		207		423		
3-T-4	Reference	1/13/00	76	0.00	38	0.00	210	0.00	455	0.00	ACCEPT
	Pitot		76		38		210		455		
3-X-1	Reference	I0129199	77	0.00	42	0.20	211	0.00	500	0.10	ACCEPT
	Pitot		77		43		211		501		
3-X-2	Reference	11/3/99	64	0.19	43	0.00	208	0.00	438	1.45	ACCEPT
	Pitot		65		43		208		425		
4-M-1	Reference	11/2/99	74	0.00	38	0.60	199	0.00	373	0.00	ACCEPT
	Pitot		74		41		199		373		
4-M-2	Reference	11/3/99	74	0.00	58	0.00	192	0.31	411	0.00	ACCEPT
	Pitot		74		58		190		411		

PACIFIC ENVIRONMENTAL SERVICES, INC.

Impinger Thermocouples

The impinger thermocouples are checked in a similar manner at approximately 32°F and ambient temperature, and they agreed within 2°F. The thermocouples may be checked at ambient temperature prior to the test series to verify calibration. Calibration data are included in the following Impinger Thermocouple Calibration Data Sheet(s).

PACIFIC ENVIRONMENTAL SERVICES, INC.

7209 E. Kemper Rd.
Cincinnati, OH 45249
Phone: 513.489.6611
Fax: 513.489.6619

TEMPERATURE SENSOR CALIBRATION DATA FORM FOR SAMPLEHEADS

DATE: , 13-Jan-00

Reference point number	source[a] (Specify)	Reference Thermometer Temperature, °F	Thermocouple Potentiometer Temperature, °F	Temperature Difference,[b] °F	
Sample Head No. 1					
1	Ambient Air	75	75	0	**ACCEPT**
2	Cold Bath	36	36	0	
Sample Head No. 2					
1	Ambient Air	76	76	0	**ACCEPT**
2	Cold Bath	36	36	0	
Sample Head No. 3					
1	Ambient Air	76	76	0	**ACCEPT**
2	Cold Bath	38	38	0	
Sample Head No. 4					
1	Ambient Air	76	76	0	**ACCEPT**
2	Cold Bath	36 -	36	0	
Sample Head No. 5					
1	Ambient Air	76	78	2	**ACCEPT**
2	Cold Bath	36	36	0	
Sample Head No. 6					
1	Ambient Air	73	73	0	**ACCEPT**
2	Cold Bath	35	35	0	
Sample Head No. 7					
1	Ambient Air	74	74	0	**ACCEPT**
2	Cold Bath	35	35	0	
Sample Head No. 8					
1	Ambient Air	74	74	0	**ACCEPT**
2	Cold Bath	38	38	0	

"Type of calibration used.

Calibrated By: ah

[b]Allowable tolerance ±2°F

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

02 (01) - Electric arc furnaces(EAFs), Ladle metallurgy furnace (LMF) and the associated Dust handling equipment

Description:
The two Lectroinelt electric arc furnaces A and B have maximum capacities of 34 tons/hr, each. The einissions are vented by direct shell evacuation through side draft hoods and overhead canopy hood system to the baghouse. This emission point covers emissions due to charging, melting, and tapping. The (6) six oxy-fuel burners operate on natural gas and oxygen and are capable of firing at up to 10 million Btu/hr, each. The LMF is a steel purification and refining process. The emissions from the LMF are captured by a hooding system and vented to the same Harsell baghouse. The LMF has the capacity to refine 68 tons per hour of molten steel. The emissions from the associated dust handling equipment are also vented to the same Harsell baghouse.

Construction commenced: EAFs - 1981;
LMF- June, 1995;
Baghouse - 1976

APPLICABLE REGULATIONS:
401 KAR 59:570 - Standards of performance for steel plants: electric arc furnaces constructed after October 21, 1974, and on or before August 17, 1983, is governed by 40 CFR 60, Subpart AA.

STATE-ORIGIN APPLICABLE REGULATIONS:
401 KAR 63:021 - Existing sources emitting toxic air pollutants.

1. **Operating Limitations:**
   1- The total steel production from both furnaces shall not exceed 403,200 tons/yr, with each furnace producing no more than 34 tons/hr. (Self imposed to preclude the applicability of 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas)
   2- The control system fan amperes shall fall within the same range of values recorded during the latest performance test (See testing requirements). However, the permittee have the option of installing , calibrating, and maintaining a monitoring device that continuously records the volumetric flow rate at the baghouse inlet. A shop opacity compliance demonstration shall be performed to establish volumetric flow rate and damper positions. [60.274 (b) and (c)]
   3- The static pressure in the free space inside the EAFs shall not exceed the levels established during the latest performance test. The owner or operator shall install, calibrate and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15-minute integrated averages. The pressure monitoring device shall have an accuracy of plus or minus 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions (See testing requirements). However, the permittee have the option to conduct daily visual emissions observations as an alternative to furnace static pressure monitoring. Under the alternative, the permittee shall perform shop opacity observations once per day during a meltdown and refining period.[60.274 (b) and (c)]

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382

AIR QUALITY PERMIT

Pcrmittce Name:	Kentucky Electric Steel, Incorporated
Mailing Addrcss:	P. O. Box 3500, Ashland, Kentucky 41105

Source Name:	Kentucky Electric Steel, Incorporated
Mailing Addrcss:	Same as above
Source Location:	12 miles west of Ashland on U.S. 60, Coalton, Kentucky
PERMIT TYPE:	Federally-Enforceable Title V
Review Type:	Operating, Synthetic Minor
Permit Number:	V-98-031
Log Number:	E982
Application Complete Date:	February 14,1997
KYEIS ID #:	103-0340-0020
AFS Plant ID:	21-019-00020
SIC Code:	3312
Region:	Huntington/Ashland
County:	Boyd
Issuance Date:	June 2,1999
Expiration Date:	June 2,2004

John E. Hornback, Director
Division for Air Quality

TABLE OF CONTENTS

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application which was determined to be complete on February 14, 1997, the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in the Regulation 401 KAR 50:035, Pennits.

Issuance of this permit does not relieve the pennittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, staie, or local agency.

JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

33

11 DB

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION FOR AIR QUALITY
803 SCHENKEL LN
FRANKFORT KY 40601-1403

August 14,2000

Travis Bailey
Kentucky Electric Steel
P. O. Box 3500
Ashland, KY 41105

Dear Sir:

On May 10-12,2000, personnel from the Kentucky Division for Air Quality observed particulate compliance tests on Kentucky Electric Steel's Harsell Open Top Baghouse. Testing was performed by PES and EQ of Cincinnati, Ohio, in a satisfactory manner. The test report was complete and acceptable. Results were as follows:

Run	Date	**Time**	**gr/DSCF**	**lb/hr**
1	5-11	13:55 – 19:45	0.0012	4.80
2	5-12	7:15 – 11:20	0.0014	5.51
3	5-12	12:18 – 16:18	0.0007	2.43
			0.0011	4.25

The emissions stated in the report include the back half catch, which is not used in Kentucky. The allowable emission rate for this source is .0052 gr/DSCF. The baghouse was in compliance at the time of the test.

Sincerely,

Gerald Slucher, Chief
Source Test Section

GS/JJ/mlp

Cc: Facility File 21-019-00020
Ashland Regional Office

AIR EMISSIONS SOURCE TESTING PROTOCOL
COMPLIANCE SAMPLING PROGRAM
KENTUCKY ELECTRIC STEEL, INC.
ASHLAND, KENTUCKY

Prepared for:

Kentucky Electric Steel, Inc.
P.O. Box 3500
Ashland, Kentucky 41105

PN 050163.0009

Prepared by:

800 229 7495

Environmental Quality Management, Inc.
1310 Kemper Meadow Drive
Cincinnati, Ohio 45240

April 2000

TABLE OF CONTENTS

FIGURES

TABLES

SECTION 1

INTRODUCTION

Environmental Quality Management, Inc. (EQ) has been retained by Kentucky Electric Steel, Inc. (KES) to plan and conduct a compliance particulate sampling evaluation from the Harsell Positive Pressure Baghouse servicing Lectromelt Electric Arc Furnaces A and B and Ladle Metallurgy Furnace. Sampling is being performed in accordance with the requirements of operating Permit Number V-98-031. Table 1-1 presents the sampling efforts to be performed at the baghouse exhaust.

The test program is scheduled to be conducted May 11 and 12,2000.

TABLE 1-1. SAMPLING REQUIREMENTS

Test Point No.	Test Point Name	Parameter Tested	Test Method
1	Harsell Baghouse Inlet	Flow[1]	EPA Method 1 for Velocity EPA Method 2 for Temperature
2	Harsell Baghouse Outlet	O_2/CO_2 Moisture PM Visible Emissions	EPA Method 3 EPA Method 4 EPA Method 5D EPA Method 9

[1] Velocity profiles will be conducted at the inlet before and after each outlet Method 5D sample. Inlet velocity data will be used to sample the outlet.

The plant contact is:

Mr. Travis Bailey
Kentucky Electric Steel, Inc.
P.O. Box 3500
Ashland, Kentucky 41105
(606) 929-1330

The EQ contact is:

Mr. Tom Gerstle
Environmental Quality Management, Inc.
1310 Kemper Meadow Drive, Suite 100
Cincinnati, Ohio 45240
(513) 825-7500
tgerstle@eqm.com

SECTION 2

SAMPLING AND ANALYTICAL PROCEDURES

The sampling and analytical procedures to be used in this test program conform to **EPA** Reference Method 1-4, 5D, and 9 as published in the Federal Register. **A** brief description of each method follows:

LOCATION OF MEASUREMENT SITES

EPA Method 1, "Sample Velocity Traverses for Stationary Sources," will be used to select representative measurement sites. Sample locations are shown in Section 3. Exact measurements will be made onsite. Selection of cells to be sampled and location of sampling points within the baghouse will follow guidelines in **EPA** Method 5D. **A** schematic of the baghouse outlet is shown in Figure 3-3.

STACK GAS VOLUMETRIC FLOW RATE

EPA Method 2, "Determination of Stack Gas Velocity and Volumetric Flow Rates," will be used at each location to determine stack gas volumetric flow rates at the baghouse inlet. Standard and Type "S" pitot tubes, meeting the **EPA** specifications, and an inclined manometer will be used to measure velocity pressures. A calibrated Type " K thermocouple, attached directly to the pitot tube, will be used to measure stack gas temperature. The stack gas velocity will be calculated from the average square root of the stack gas velocity pressure, average stack gas temperature, stack gas molecular weight, and absolute static pressure. The volumetric flow rate is the product of velocity and stack cross-sectional area.

STACK GAS DRY MOLECULAR WEIGHT

EPA Reference Method **3,** "Gas Analysis for the Determination of Dry Molecular Weight," will be used to determine stack gas dry molecular weight. Bag samples will be collected

Kentucky Electric Steel, Inc.

P. O. Box 3500 • Ashland, Kentucky 41105-3500 • (606) 929-1200

APR 2 2 2000

April 24,2000

Mr. Gerald Slucher
Commonwealth of Kentucky
Natural Resources and Environmental
Protection Cabinet
Department for Environmental Protection
Division of Air Quality
803 Schenkel Lane
Frankfort, KY 40601

Dear Mr. Slucher:

Please find attached copies of Kentucky Electric Steel, Inc.'s Emission Testing Protocol for the test dates of May 11th and May 12th, 2000.

If you have any questions regarding the enclosed or need additional information, please feel free to contact me at **(606) 929-1330.**

Sincerely,

Travis A. Bailey
Manager
Human Resources & Risk Control

TAB:jla

Enclosures

and analyzed for each measurement run using Orsat combustion gas analyzers which read 0.1 percent concentrations of carbon dioxide and oxygen.

STACK GAS MOISTURE CONTENT

EPA Reference Method 4, "Determination of Moisture Content in Stack Gases," will be used to determine stack gas moisture content. This method will be conducted as part of each particulate measurement run. The initial and final contents of all impingers will be determined gravimetrically.

PARTICULATE MATTER

EPA Reference Method 5D, "Determination of Particulate Matter Emissions from Positive Pressure Fabric Filters," will be used to determine the particulate matter concentration and mass emission rates. The sample train will consist of a glass nozzle, glass probe and filter holder, glass fiber filter, and a series of irnpingers followed by a vacuum pump, dry gas meter, and calibrated orifice. The particulate sample will be withdrawn isokinetically and collected on the filter. Thermocouples will be used to monitor temperatures of the stack gas and impinger exit gas. A schematic of the sample train is shown in Figure 2-1.

Exhaust from the Harsell Baghouse is routed through 20 bag sections. Following the guidelines presented in Method 5D, each sampling run will consist of six sample points per cell and four cells per test, for a total of 24 sample points per test run. At ten minutes of sampling per point, this will result in a net sampling time of four hours per test run. After three test runs, 12 of the 20 cells will have been sampled. Each test run will be approximately 240 minutes in length, and will cover approximately three EAF heat cycles. Exact sampling point locations are detailed in Section 3. Determination of measurement sites, number and location of traverse points, and velocity determination will follow procedures in Method 5D. Isokinetic sampling rates will be calculated from the measurement of volumetric flow rates at each inlet, as specified in Method 5D.

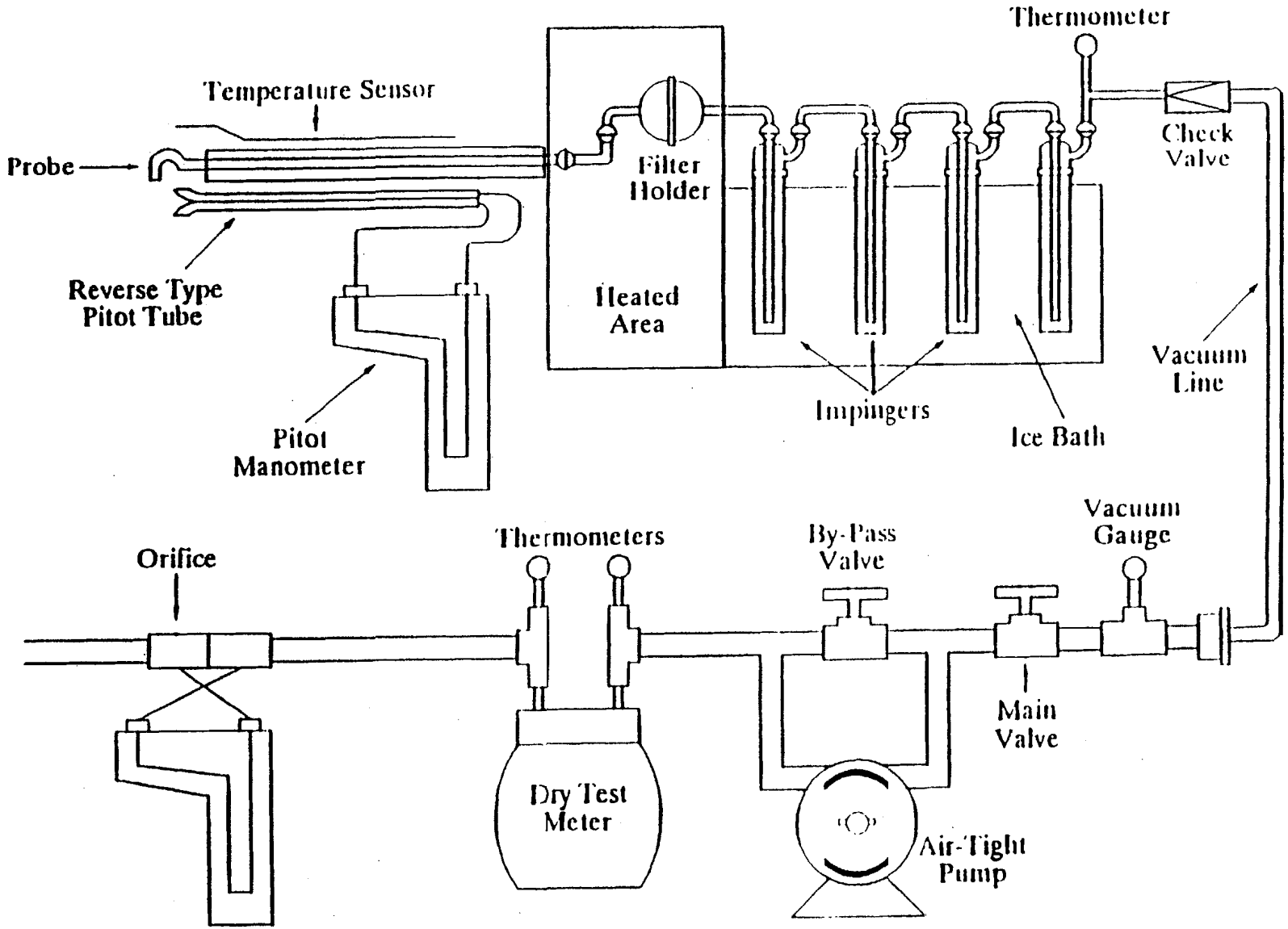


Figure 2-1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

VISIBLE EMISSION OBSERVATIONS

EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources" will be used to determine opacity from the baghouse exhaust as well as from the shop roof monitor. Observations will be conducted simultaneously with the particulate sampling runs.

SECTION 3

PROCESS DESCRIPTION/SAMPLING LOCATIONS

Kentucky Electric Steel, Inc. owns and operates and electric arc furnace (EAF) melt shop and bar steel rolling facility located on U.S. Route 60 approximately 12 miles west of Ashland, Kentucky.

Kentucky Electric Steel, Inc. has two EAFs for steel production. Scrap steel is delivered by rail and truck and is stored in open piles. Scrap steel and various fluxing agents are weighed and charged to the EAF. The charge material is melted by electrical current flowing among three graphite electrodes lowered into the furnace. Slag (melt impurities) is separated from the product metal and is transferred to slag storage and processing using an endloader. Molten metal is tapped from the EAF into preheated transfer ladles by tilting the furnace, allowing the metal to flow through a hole in the side.

Molten metal is then transferred to the ladle metallurgy furnace (LMF). Raw materials (bulk alloys and fluxes) are added to the molten metal in the LMF to further purify it. The metal is heated during refining using electrodes. After metal treatment is complete, the transfer ladle is removed from the LMF and carried to the continuous casting machine.

At the continuous caster, molten metal is poured into a preheated tundish and then flows into molds and is allowed to partially cool. The strips of metal are cut into pieces at the caster to form billets. Cooled billets are later reheated in a reheat furnace and rolled to the desired dimensions. The bar steel is descaled using water sprays and the ends of the bars are sheared off. The final product is bound into bundles and stored until shipped offsite.

Emissions from the EAFs and LMF are vented to the Harsell Positive Pressure Baghouse. A general process flow diagram is provided in Figure **3-1.**

The baghouse flue gas flow rate will be measured at an inlet location in a section of rectangular duct approximately **193** inches downstream of a bend in the duct and **165** inches upstream of a reduction in duct size. Dimensions of this area of the duct are **131.5** inches by **144**

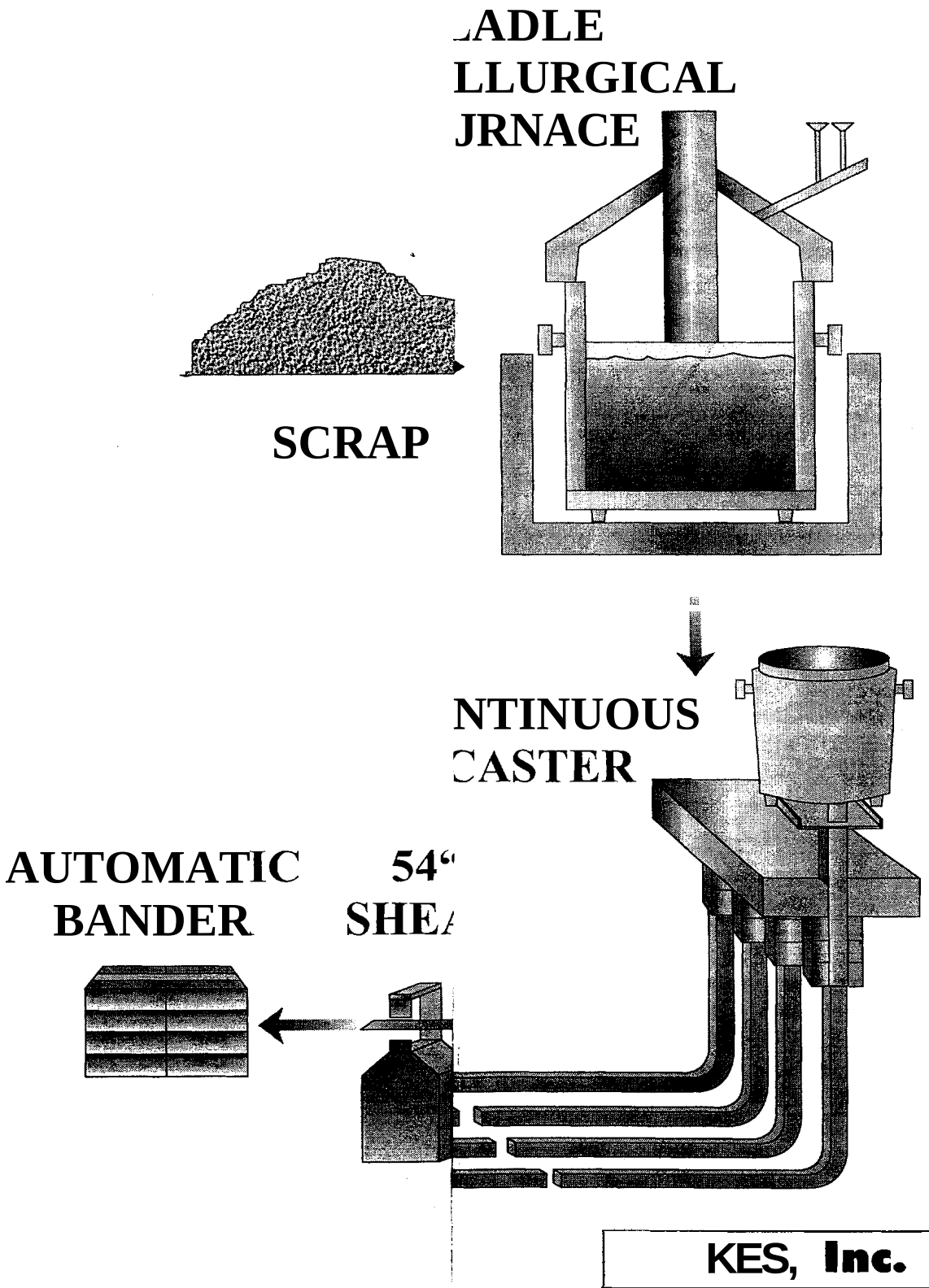


Figure 3-1. Pro

KES, Inc.	EQ
Process Flow Diagram: Plant Process Flow	
Drawing No: 0	
Revision: 0	
Date: 1/9/98	

inches. Six ports on the top of the duct will be sampled, eight points per port, for a total of 48 points. A schematic is shown in Figure 3-2.

Figure 3-3 is a schematic of the baghouse outlet compartments to be sampled for the particulate emissions. A sampling matrix of three by two points, six points per compartment, will be used for sampling purposes. Each compartment will be sampled for 60 minutes. Four compartments will be sampled per test run.

Process information will be collected during the course of the sampling program and will include:

A) Charge weights and materials, and tap weights and materials

B) Heat times, including start and stop times, log of process operation including periods of no operation during testing

C) Pressure drop across the baghouse, visual inspection of bags and control system fan amperes

D) Fan/duct damper positions

E) Fan amperes.

Fan and damper data is monitored continuously electronically. Data will be recorded at 15 minute intervals during testing.

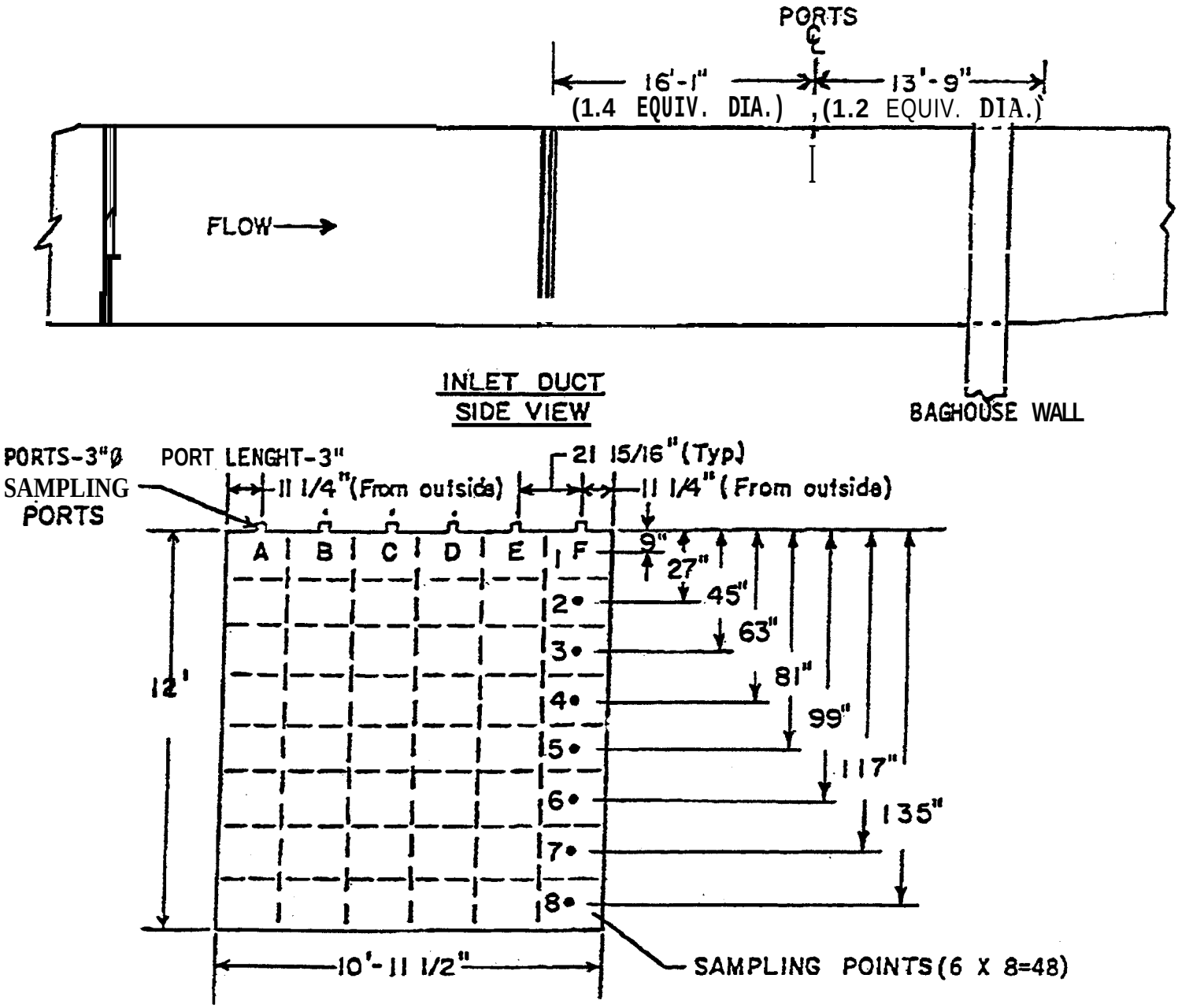
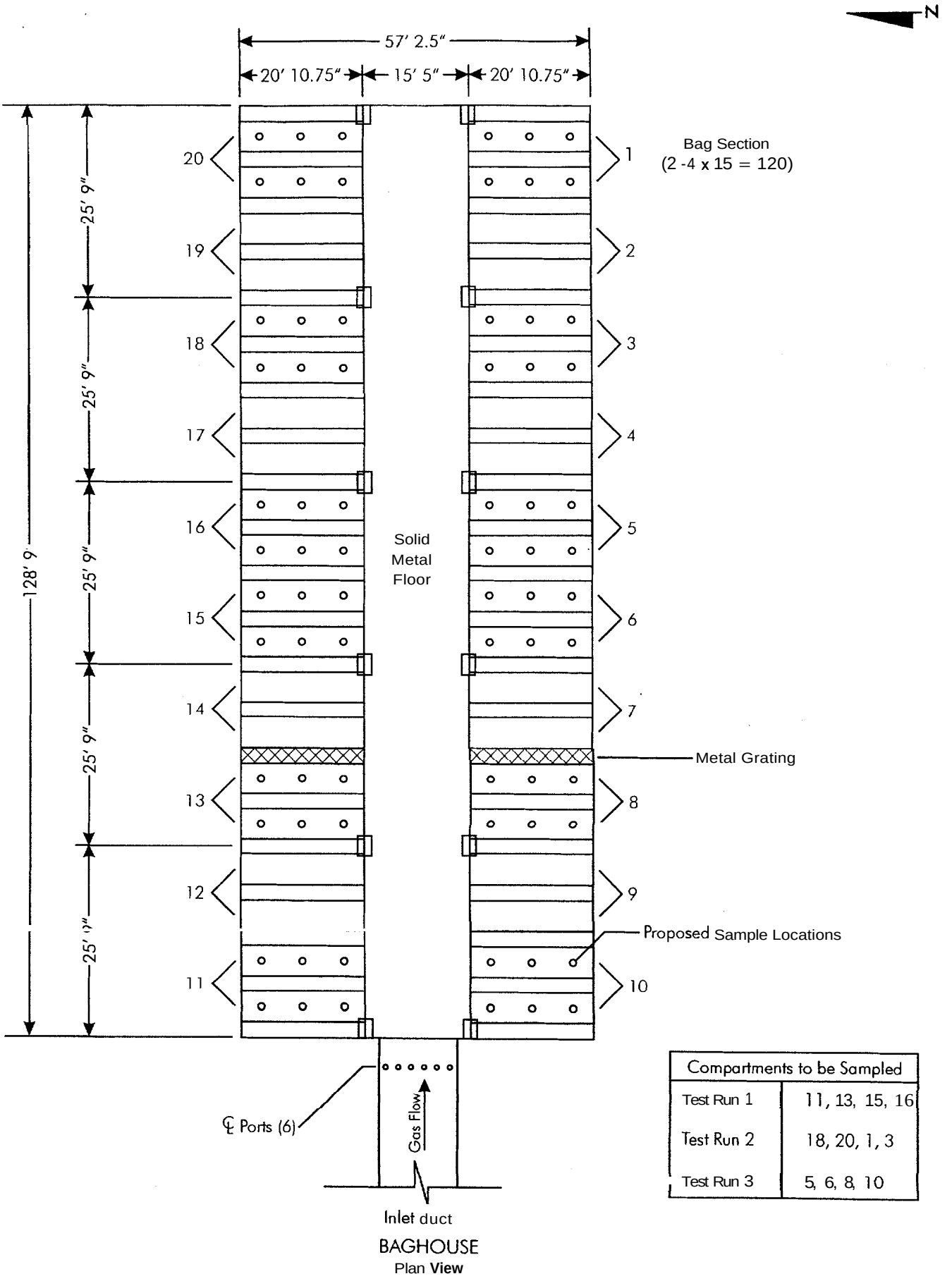


Figure 3-2. Inlet Velocity Measurement Location



Compartments to be Sampled	
Test Run 1	11, 13, 15, 16
Test Run 2	18, 20, 1, 3
Test Run 3	5, 6, 8, 10

Proposed KES, Inc. Outlet Sampling Points

Figure 3-3. Schematic of Baghouse Outlet

SECTION 4

QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling quality assurance for this project includes the use of: calibrated source sampling equipment; reference test methods; and traceability protocols for the recording and calculation of data. The analytical quality assurance includes use of validated analytical procedures; calibration of equipment; and analysis of control samples and blanks. The calibration and quality control procedures to be used for this test program are described in the following subsection.

CALIBRATION PROCEDURES AND FREQUENCY

All manual stack gas sampling equipment is calibrated before the test program in accordance with the procedures outlined in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume 111, EPA-600/4-72-027B. Summarized in Table 4-1 are the stack gas sampling equipment calibrations which are performed in preparation for this project. The meter boxes are re-calibrated after the test.

Listed in Table 4-2 is the additional calibration checks which are performed on the sampling equipment onsite, just prior to the testing, to ensure that equipment was not damaged during transport.

TABLE 4-1. FIELD EQUIPMENT CALIBRATION SUMMARY"

Equipment	Calibrated against	Allowable error
Method 5 meter box	Reference test meter	Y ±0.02Y ▲H @ ±0.15 post-test Y B.05 Y
Orsat	Certified cylinder gas	±0.5%
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	±1.5%
Impinger (or condenser thermometer)	ASTM-3F	±2°F
Dry gas thermometer	ASTM-3F	±5°F
Probe nozzles	Caliper	k0.004 in.
Barometer	NBS traceable barometer	±0.1 in. Hg

* As recommended in the Quality Assurance Handbook for *Air* Pollution Measurement Systems: Volume III. Stationary Source-Specific Methods. EPA-600/4-77-027b, August 1977.

TABLE 4-2. FIELD CHECKS OF SAMPLING EQUIPMENT

Equipment	Checked against	Allowable difference
Pitot tube	Inspection	No visible damage
Thermocouples	ASTM 2F or 3F	±1.5%
Probe Nozzles	Caliper	±0.004 in.

SECTION 5

PROJECT SCHEDULE

The following tentative schedule outlines the daily activities for this project. The order of sampling events may change based on production schedules.

SCHEDULE			
Day 1	May 10	Arrival at Plant / Safety Orientation / Set up equipment	
Day 2	May 11	Conduct 4 hour particulate sampling	2 Runs
Day 3	May 12	Conduct 4 hour particulate sampling	1 Run

SECTION 6

FINAL REPORT FORMAT

TABLE OF CONTENTS

APPENDIX A

COMPLIANCE TEST PROTOCOL FORMS

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601

COMPLIANCE TEST PROTOCOL

I. SOURCE INFORMATION

A. GENERAL INFORMATION

PLANT NAME Kentucky Electric Steel, Inc. PLANT ID# 21-019-00020

ADDRESS P.O. Box 3500 Ashland, Kentucky 41105 PERMIT ID# V-98-031

PLANT CONTACT Travis Bailey TELEPHONE NO: 6061929-1330

AFFECTED FACILITIES TO BE TESTED Electric Arc Furnaces A and B, Ladle Metallurgy Furnace and Associated Dust Handling Equipment

TENTATIVE TEST DATE May 11 and 12, 2000

B. PROCESS INFORMATION

MAXIMUM RATED CAPACITY 68 tons/hr (Hot Metal Production from both EAFs)

RATE TO BE RUN DURING TEST Approximately 40 tons/hr

(Permitted rate will be no more than 110% of average test rate)

METHOD OF DETERMINING RATE Records of charge weights and materials, and tap weights and materials

NORMAL OPERATING CYCLES *(e.g. 5 heats/day, soot blowing, etc.)* Approximately 20 heats/day (24 hours/day)

OPERATING CONDITIONS THAT TEND TO CAUSE "WORST CASE" POLLUTION EMISSIONS Attempt to maximize hot metal production

NORMAL MAINTENANCE SCHEDULE FOR EQUIPMENT AFFECTING EMISSIONS Monitor baghouse pressure drop, inspect bags, and monitor control system fan amperes

INCLUDE A SIMPLIFIED PROCESS FLOW DIAGRAM

C. CONTROL EQUIPMENT DATA

TYPE AND MANUFACTURER OR ALL CONTROL EQUIPMENT

Harsell Positive Pressure Baghouse, Harsell Engineering Corp.,
Harsell 2400 Bag, 20DW120

DATA TO BE MONITORED AND RECORDED TO ENSURE REPRESENTATIVE OPERATION DURING TEST. AND THEIR OPTIMUM VALUES.

Baghouse Pressure Drop - 5" W.C. (Typical)
Furnace Blower Fan Amperage - 103 Amps (Approximate)
West Fan Amperage - 182 Amps (Approximate)
East Fan Amperage - 183 Amps (Approximate)

OPERATIONAL CYCLES Bags are cleaned with reverse air and via shaking on an hourly cycle

CONTINUOUS MONITORS None

NORMAL MAINTENANCE SCHEDULE ON CONTROL EQUIPMENT, AND LAST TIME THIS MAINTENANCE WAS PERFORMED.

Maintenance is conducted as needed

COMPLIANCE TEST PROTOCOL CONTINUED

II. SAMPLING DATA

TESTING FIRM NAME Environmental Quality Management, Inc.

ADDRESS 1310 Kemper Meadow Drive Cincinnati, Ohio 45240

PERSON TO CONTACT Tom Gerstle TELEPHONE NO: 513/825-7500

LIST ALL AFFECTED FACILITIES TO BE SAMPLED AND GIVE THE INFORMATION REQUIRED BELOW:

Affected Facility	Pollutants	Total Time Per Test	No. of Tests (minimum of 3)	Test Methods To be Used
EAF, LMF EAF, LMF	Particulate Matter	240 minutes 240 minutes	3	EPA Methods 1-4 5D, 9

INCLUDE A DIAGRAM OF THE SAMPLING LOCATION WITH DIMENSIONS, PORT LOCATIONS, NUMBER AND LOCATION OF TRAVERSE POINTS, DISTANCES FROM FLOW DISTURBANCES, AND ANY OTHER PHYSICAL OBSTACLES, IN OR AROUND THE STACK

SEE ATTACHED SAMPLING PLAN

A SAMPLING TRAIN INFORMATION

GIVE A DETAILED DESCRIPTION OF ANY SAMPLING OR SAMPLE RECOVERY AND TRANSPORT PROCEDURES WHICH DO NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JUSTIFICATION FOR DEVIATION.

LENGTH OF SAMPLING PROBE 4 ft

PROBE LINER MATERIAL OF CONSTRUCTION Borosilicate Glass

MANUFACTURER OF SAMPLING EQUIPMENT Nutech

AMOUNT OF LEAK-ANALYSIS TO BE DONE ON-SITE Front-half, back-half, and filter recovery will be performed on site

STACK TEMPERATURE 130° F STACK % MOISTURE 2%

STACK GAS VELOCITY 70 FPM

STACK GAS COMPOSITION. INCLUDING APPROXIMATE CONCENTRATION OF ORGANICS

O_2 - 20.3%, CO - 0%, CO_2 - 0%, N_2 - 79.7%

FOR INSTRUMENTAL METHODS LIST EXPECTED CONCENTRATIONS. ALLOWABLE CONCENTRATIONS. INSTRUMENT SPANS, AND CAL GAS CONCENTRATIONS

B. LABORATORY ANALYSIS

GIVE DETAILED DESCRIPTION OF ANY ANALYTICAL PROCEDURE AND/OR EQUIPMENT WHICH DOES NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JUSTIFICATION FOR DEVIATION.

HAVE YOU PARTICIPATED IN ANY EPA INTER-LAB SOURCE AUDITS IN THE LAST YEAR? No

IF SO, LIST THE TYPE OF AUDIT, THE DATE. AND THE RESULT

WHAT ARE YOUR CHAIN OF CUSTODY PROCEDURES AND METHOD OF DOCUMENTATION?

All samples will be maintained with a chain of custody form. A sample form is provided in the attached Sampling Plan

ALL LABORATORY PROCEDURES SHALL HAVE PERTINENT QA DATA SUBMITTED WHETHER OR NOT THE WORK IS PERFORMED IN-HOUSE OR BY A THIRD PARTY.

C DATA SHEETS SEE ATTACHED SAMPLING PLAN

SUBMIT EXAMPLES OF ALL DATA SHEETS TO BE USED.

APPENDIX B

EXAMPLE DATA SHEETS

FIELD DATA SHEET

Plant: _____ Sample Type: _____ Operator: _____ Nozzle ID: _____ Thermocouple #: _____

Sampling Location _____ Pbar: _____ Ps: _____ Assumed Bws: ____ Filter #: _____

Run Number: _____ Date: _____ C02: _____ 02: _____ Meter Box #: _____ Y: _____ ΔH@: _____

Pretest Leak Rate: _____ cfm @ ___ in. Hg. Probe Length/Type: _____ Pit #: ___ Post-Test Leak Rate: _____ cfm @ __ in. Hg.

Pretest Leak Check: Pitot: ____ Orsat: _____ Stack Diameter: _____ As: _____ Post-Test Leak Check: Pitot: ____ Orsat: ____

Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft^3	Velocity (Δp) in H2O	Orifice Pressure Differential (ΔH) in H2O		Stack Temp. (Ts)	Temperature °F		Impinger Temp. °F	Dry Gas Meter Temp.		Pump Vacuum (In. Hg)
					Desired	Actual		Probe	Filter		Inlet (Tm in °F)	Outlet (Tm out °F)	

ΔVm= _____ $\overline{\sqrt{\Delta p}}$= _____ $\overline{\Delta H}$= _____ $\overline{Ts}$= _____ $\overline{Tm}$= _____

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: _____ Date: _____

Sampling Location: _____ Clock Time: _____

Run #: _____ Operators: _____

Barometric Pressure, in. Hg: _____ Static Pressure, in. H_2O: _____

Moisture, %: _____ Molecular wt., Dry: _____ Pitot Tube, Cp: _____

Stack Dimension, in. Diameter or Side 1: _____ Side 2: _____

Wet Bulb, °F: _____ Dry Bulb, °F: _____

Traverse Point Number	Velocity Head in. H_2O	Stack Temp. °F
	$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.8}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$

$Qs_{std} =$ dscfm

Pacific Environmental Services, Inc.

Dry Molecular Weight Determination

Client/Project: _____ Orsat No. _____

Date/Time: _____ Ooerator _____

Sample Type: _____ Comments: _____

Ambient Temp. °F _____ Site Location: _____

Run No.(s)	Gas	Run 1		Run 2		Run 3		Average Net Volume %	Multiplier	Molecular Weight of Stack Gas. Md (lb/Mole)
		Actual	Net	Actual	Net	Actual	Net			
	CO_2								0 44	
	O_2[a]								0 32	
	CO[b]								0 28	
	N_2[c]								0 28	
									Md =	

Run No.(s)	Gas	Run 1		Run 2		Run 3		Average Net Volume %	Multiplier	Molecular Weight of Stack Gas. Md (lb/Mole)
		Actual	Net	Actual	Net	Actual	Net			
	CO_2								044	
	O_2[a]								0 32	
	CO[b]								0 28	
	N_2[c]								0 28	
									Md =	

Run No (s)	Gas	Run 1		Run 2		Run 3		Average Net Volume %	Multiplier	Molecular Weight of Stack Gas. Md (lb/Mole)
		Actual	Net	Actual	Net	Actual	Net			
	CO_2								044	
	O_2[a]								0 32	
	CO[b]								0 28	
	N_2[c]								0 28	
									Md =	

[a] O_2 Net Volume a O_2 actual reading minus CO_2 actual reading.

[b] CO Net Volume is CO actual reading minus O_2 actual reading.

[c] N Net Volume is 100 minus CO actual reading.

PACIFIC ENVIRONMENTAL SERVICES, INC.

ANALYTICAL REQUEST AND CHAIN OF CUSTODY

PLANT:	PROJECT #:
RECOVERY PERSON:	
SAMPLE TECHNICIAN:	

SAMPLE IDENTIFICATION	COLLECTION		SAMPLE NAME	NUMBER OF CONTAINERS	ANALYTICAL REQUEST										COMMENTS (Type of container, special preparation, special handling, etc.)
	DATE	TIME													

RELINQUISHER'S NAME	DATE/TIME	RELINQUISHER'S SIGNATURE	SHIPPER'S NAME AND ID NUMBER
RECEIVER'S NAME	DATE/TIME	RECEIVER'S SIGNATURE	

Travis Bailey
Kentucky Electric Steel
PO Box 3500
Ashland, Ky 41105

to Mary Lou
Aug 14 00

Dear Sir

On May 10-12, 2000, personnel from the Kentucky Division of Air Quality witnessed particulate compliance tests on Kentucky Electric Steel's Harrell Open Top Baghouse. Testing was performed by PES and ER, of Cincinnati, Ohio, in a satisfactory manner. The test report was complete and acceptable. Results were as follows

Run	Date	Time	gr/DSCF	lb/hr
1	5-11	1355-1655	0.0012	4.80
2	5-12	715-1120	0.0014	5.51
3	5-12	1218-1618	0.0007	2.43
			0.0011	4.25

The emissions stated in the report include the brake hoof cutter, which is not used in Kentucky. The allowable emission rate for the source .0052 gr/DSCF. The baghouse was not in compliance at the time of the test

CC mem file 21-019-00020
Ashland Regional Office

EQ Tom Seattle
PES Don Schuffel

Thurs May 11 Ky Electric Steel – Eddie Hall 606 929 1200

start 7^{55} p V_m, 118,747 pt 1 2 3 4 5 6 7 8 duct
2.0 1.8 1.8 1.9 1.7 1.8 2.0 2.1 vertile po

stop 7^{35} p V_{mf} 295,810 Δp .00036 → all same baghouse

D_n 1.000 T_s 130°F final lk ✓0.001 @ 5 in Hg pitot lk ✓ ok

fugitives from melt shop roof at 2:44 p, 3^{55} p, 5^{51} p

line handling baghouse emissions at 3:56 p

May 12 2000 Fri

start 7.15 V_m, 296,400 port 6 from top
1 2 3 4 5 6 7 8
1.8 1.9 1.5 1.6 1.9 2.1 2.9 2.3

stop 11.00 V_{mf} 493,799 0.000993 → all same baghouse

T_s ~160°F D_n 1.240 final lk ✓0.001 @ 4 in Hg pitot lk ✓ ok

opacity from shop roof at 8^{44} A 9^{45} A

start 12:18 V_m, 404,320 pt 1 2 3 4 5 6 7 8
bottom
stop 4.00 V_{mf} 672,672 Δp 1.3 .98 1.0 1.7 1.9 1.8 2.1 2.0

D_n T_s final lk 0.003 @ 5 in Hg pitot lk ✓ ok

fugitives from melt shop roof 1:37 p, 2:03 p, 3^{59} p, 4^{04} p, 4^{13} p

EQ FAX

Date of Transmittal: 7/28/00

Time of Transmittal: 0645

Number of Pages (including cover): 4

To Verify Receipt, Call: (513) 825 7500

To: JOHN JAYNE **Phone No:**

Company: KY DAQ

Fax No: 502-573-3787

From: TOM GERSTLE

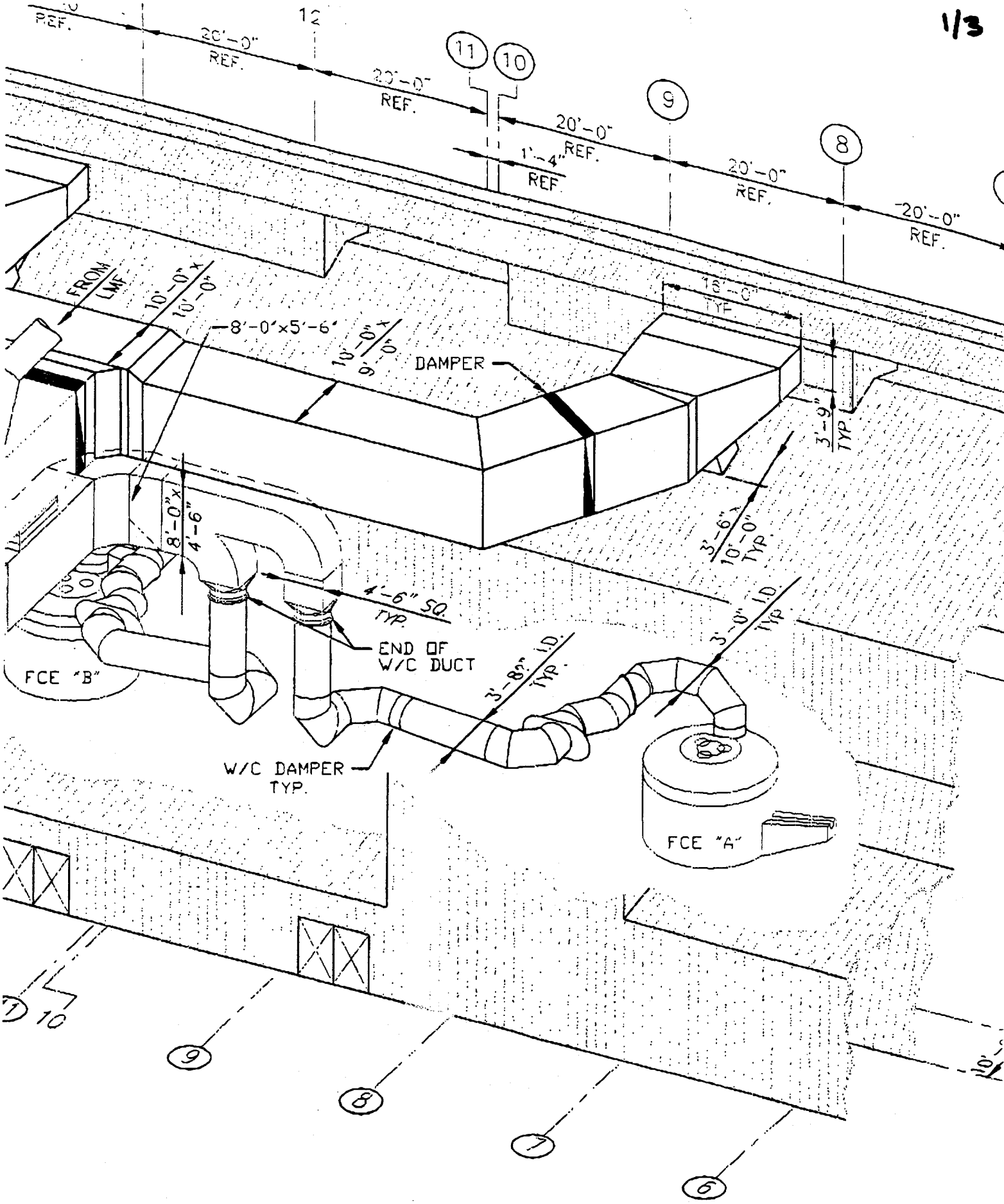
Message:

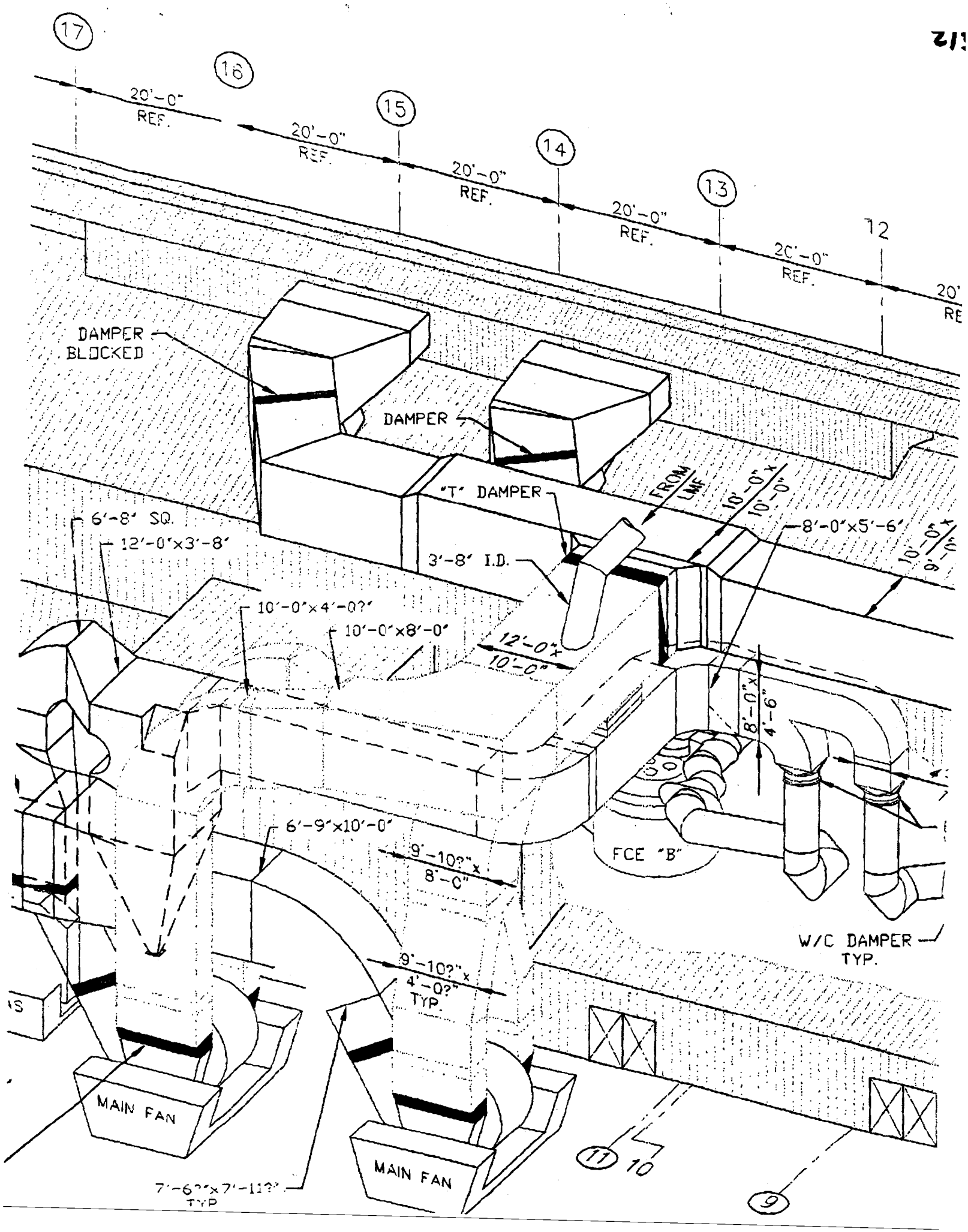
SCHEMATIC OF KES DUST LAYOUT. THIS IS A COPY OF THE LARGER DRAWING I HAD. THE COPIES OVERLAP TO MAKE A LARGER FIGURE.

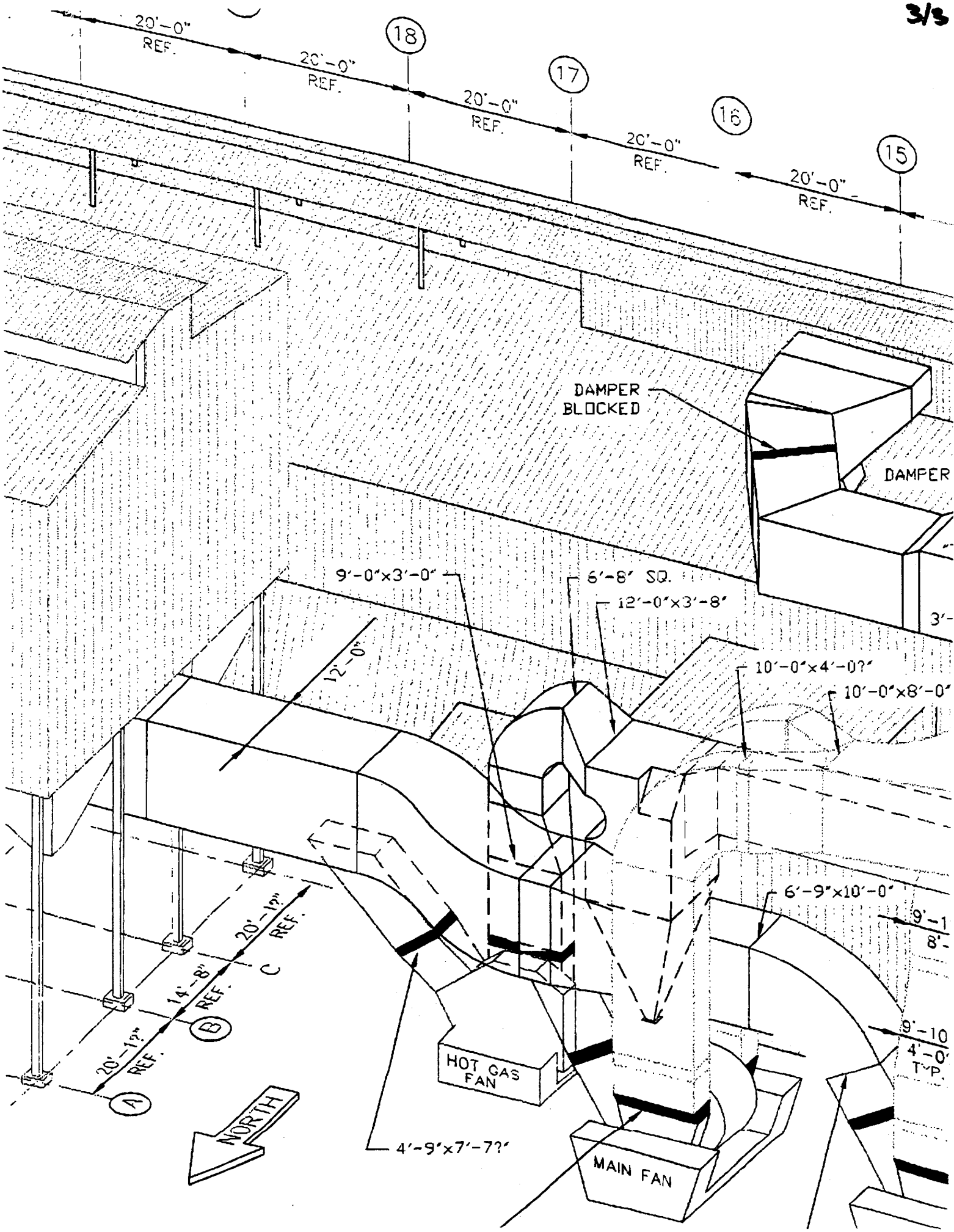
PLEASE CALL IF YOU NEED ANYTHING ELSE.

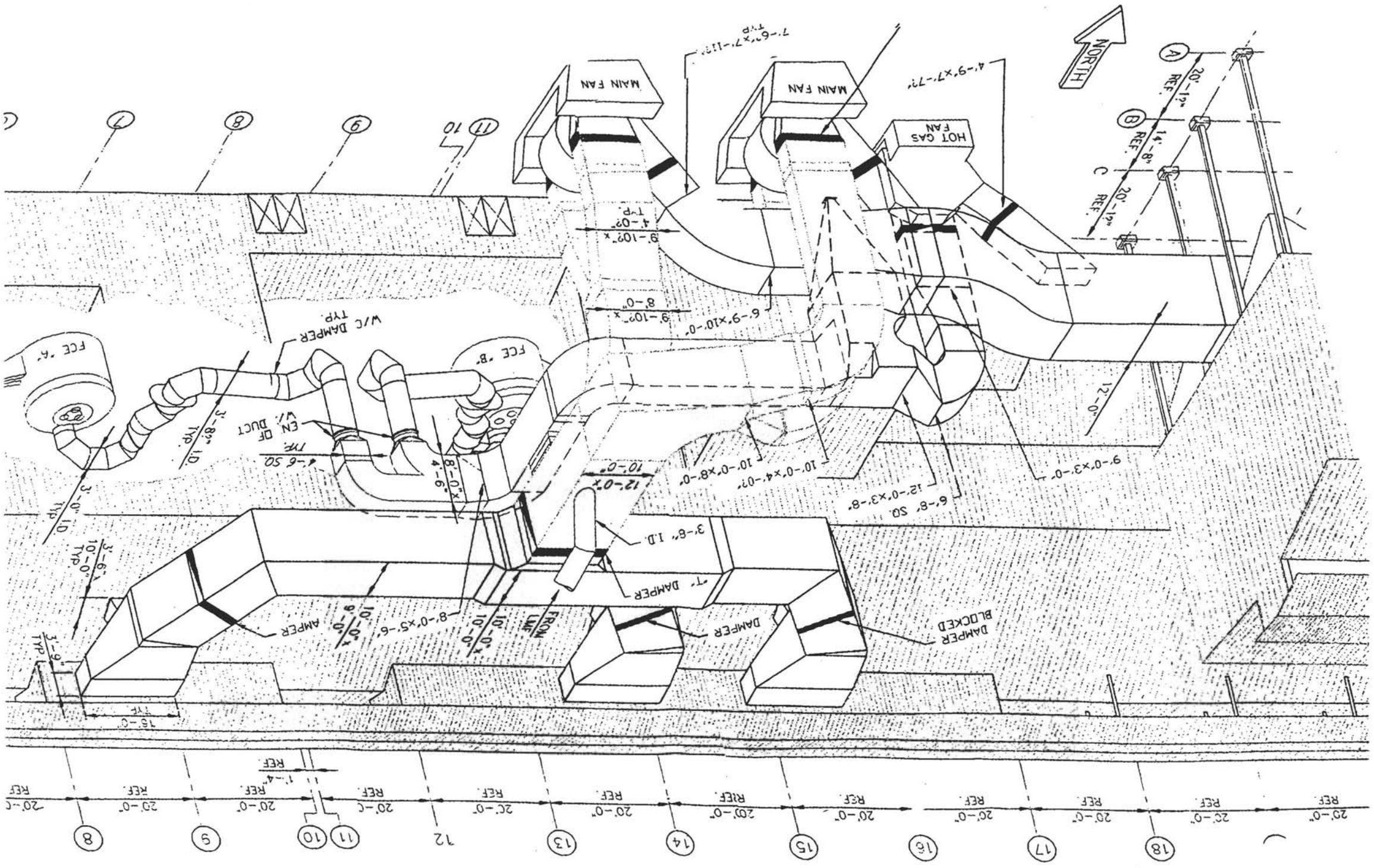
Tom

Environmental Quality Management, Inc.
1310 Kemper Meadow Drive, Cincinnati, Ohio 45240
Tel: (513) 825-7500, Fax: (513) 825 7495


REF.
20'-0"
REF.
12
11
10
9
8
20'-0"
REF.
20'-0"
REF.
1'-4"
REF.
20'-0"
REF.
20'-0"
REF.
FROM LMF
10'-0"x
10'-0"
8'-0"x5'-6"
10'-0"x
9'-0"
DAMPER
18'-0"
TYP.
3'-9"
TYP.
8'-0"x
4'-6"
3'-6"x
10'-0"
TYP.
4'-6" SQ.
TYP.
END OF
W/C DUCT
3'-0" I.D.
TYP.
3'-8" I.D.
TYP.
FCE "B"
W/C DAMPER
TYP.
FCE "A"
10
9
8
7
6


17
16
15
14
13
12
20'-0" REF.
20'-0" REF.
20'-0" REF.
20'-0" REF.
20'-0" REF.
DAMPER BLOCKED
DAMPER
"T" DAMPER
FROM LMF
10'-0"x 10'-0"
8'-0"x5'-6"
6'-8" SQ.
12'-0"x3'-8"
3'-8" I.D.
10'-0"x4'-0?"
10'-0"x8'-0"
12'-0"x 10'-0"
8'-0"x 4'-6"
6'-9"x10'-0"
9'-10?"x 8'-0"
FCE "B"
W/C DAMPER TYP.
9'-10?"x 4'-0?" TYP.
MAIN FAN
MAIN FAN
7'-6?"x7'-11?" TYP
11
10
9


20'-0" REF.
20'-0" REF.
20'-0" REF.
20'-0" REF.
20'-0" REF.
18
17
16
15
DAMPER BLOCKED
DAMPER
9'-0"x3'-0"
6'-8" SQ.
12'-0"x3'-8"
12'-0"
10'-0"x4'-0?"
10'-0"x8'-0"
6'-9"x10'-0"
20'-1?" REF.
14'-8" REF.
20'-1?" REF.
C
B
A
NORTH
HOT GAS FAN
MAIN FAN
4'-9"x7'-7?"
4'-0" TYP.


NORTH
MAIN FAN
MAIN FAN
HOT GAS FAN
7'-6"x7'-11½" TYP
4'-9"x7'-7½"
9'-10½"x 4'-0" TYP
9'-10½"x 8'-0"
6'-9"x10'-0"
W/C DAMPER TYP.
FCE "A"
FCE "B"
EN DUCT W/ DF
DAMPER
DAMPER BLOCKED
DAMPER
DAMPER
3'-8" I.D.
12'-0"x 10'-0"
10'-0"x4'-0"
10'-0"x8'-0"
12'-0"x3'-8"
6'-8" SQ.
9'-0"x3'-0"
12'-0"
20'-12" REF.
14'-8" REF.
20'-12" REF.
20'-0" REF.
1'-4" REF.
15'-0" TYP.
3'-9" TYP.
3'-6" 10'-0" TYP.
3'-0" I.D. TYP.
3'-8" I.D. TYP.
4'-6" SQ. TYP.
8'-0"x5'-6"
10'-0"x 9'-0"
10'-0"x 10'-0"
FROM LIM

STACK TEST REVIEW

NAME Ky Electric Steel — TEST NO. _____

SOURCE TYPE Hassell Positive Pressure Baghouse RUN NO. BO-3

MODEL OR NAME _____ DATE OF TEST 5-12-00 12^{18} - 16^{18}

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS		
P_b 29.45					
T_s, Stack temperature	168	°F	V_{H2O}, Volume of water	4.378	cf
P_s, Stack pressure	29.44	in.Hg.	B_{wo}, Moisture of content	2.6%	
T_m, Meter temperature	97	°F	V_{ne}, Volume of sample at stack cond.	165.017	cf
P_m, Meter pressure	29.57	in.Hg.	M_{dry}, Molecular wt dry	~~28.84~~	
M_w, Condensed water	93.0	gm	M_{wet}, Molecular wt wet	28.56	
V_{DGM}, Volume of sample (meter conditions)	178.352	cf	Velocity 1.65		fps
	γ 0.988		Qso 25,754,736 DSCF/hr		
CO_2	0.0	%	Isokinetic Ratio	1.03	
O_2	21.0	%	gr/scf ~~[illegible]~~	0.0007	
CO_2	0.0	%			
N_2	79.0	%			
AP, Velocity head (traverse points)	0.00763	in.H_2O	Lb/Hr		
	0.02762				
C_p, Pitot tube coeff.	0.84		Lb/mm BTU		
240 min x 60					
Θ, Sampling time		sec.			
A_n, area of nozzle D= 1.240"	0.00839	ft^2			
D^2x 0.005454					
Weight of collected pollutant	7.05 mg	gm	**REQUESTED BY**		
CO_2, Waste only		%	REVIEWED BY		
			DATE		
A_s, Area of stack D= ft $\frac{D2}{4}\pi$	5381	ft^2	**RECOMMENDATION**		
Boiler Heat Capacity		mmBTU/Hr.			

$$\bar{V} = \frac{Q_a}{A_o}\frac{T_o}{T_a}$$

$$1.65 = \frac{(33296.074+39612.842)}{5381}\frac{(460+168)}{(460+\frac{146+191}{2})}\frac{hr}{3600\ sec}$$

REMARKS

$$F = \frac{.0945\ V_{m\,std}(460+T_s)}{(1-B_{ws})P_s\ T_m\ V_s\ \theta}$$

$\frac{7.05\,mg}{165.017\,DSCF}\ \frac{gm}{1000\,mg}\ \frac{7000\,gr}{lb}\ \frac{lb}{453.59\,gm}$

STACK TEST REVIEW

NAME Kentucky Electric Steel

TEST NO.

SOURCE TYPE Hasell Positive Pressure Baghouse

RUN NO. BO-1

MODEL OR NAME

DATE OF TEST 5-11-00 1355 - 1945

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS	
T_s, Stack temperature	145	°F	V_{H2O}, Volume of water ~~2.045~~	cf
P_s, Stack pressure	29.59	in.Hg.	B_{wo}, Moisture of content 1.3%	
T_m, Meter temperature	94	°F	V_{ne}, Volume of sample at stack cond. ~~161.274~~	cf
P_m, Meter pressure	29.7	in.Hg.	M_{dry}, Molecular wt dry 28.84	
M_w, Condensed water	43.5	gm	M_{wet}, Molecular wt wet 28.70	
V_{DGM}, Volume of sample (meter conditions)	173.319	cf	Velocity 1.76	fps
	2 x 0.988		Qsd 29,017,386 DSCF/m	
CO_2	0.0	%	Isokinetic Ratio 1.10	
O_2	21.0	%	gr/scf	
CO_2	0.0	%	0.0012 no back half	
N_2	79.0	%		
AP, Velocity head (traverse points)	0.001036	in.H_2O	Lb/Hr	
C_p, Pitot tube coeff.	0.84		Lb/mm BTU	
θ, Sampling time	300 min x 60	sec.		
A_n, area of nozzle D=.100"	0.005454	ft^2		
D^2 x 0.005454				
Weight of collected pollutant	12.15	gm	REQUESTED BY	
CO_2, Waste only		%	REVIEWED BY	
A_s, Area of stack D= ft $\frac{D2}{4}\pi$	5381	ft^2	DATE	
5865-185 x 1545"			RECOMMENDATION	
Boiler Heat Capacity		mmBTU/Hr.		

$\bar{V} = \frac{Q_a}{A_o} \frac{T_o}{T_a}$ $Q_a = Q_{1a+1b}$

REMARKS

$1.76 \frac{ft}{sec} = \frac{67112.210\frac{1}{2}}{5381 ft^2} \frac{(460+145)}{(460+136)_{avg}} \frac{hr}{3600 sec}$

DEP 4033

STACK TEST REVIEW

NAME Kentucky Electric Steel TEST NO.

SOURCE TYPE Harsell Positive Pressure Baghouse RUN NO. 130-2

MODEL OR NAME DATE OF TEST 5-12-00 7:15 11:20

TEST PERFORMED BY EQ/AES

DATA REQUIRED			RESULTS	
T_s, Stack temperature	162	°F	V_{H2O}, Volume of water	4.759 cf
P_s, Stack pressure	29.44	in. Hg.	B_{wo}, Moisture of content	2.5%
T_m, Meter temperature	87	°F	V_{ne}, Volume of sample at stack cond.	186.787 cf
P_m, Meter pressure	29.67	in. Hg.	M_{dry}, Molecular wt dry	28.84
M_w, Condensed water	101.1	gm	M_{wet}, Molecular wt wet	28.57
V_{DGM}, Volume of sample (meter conditions)	192.399	cf	Velocity 1.70	fps
			Qsd 26,818.676 DSCF/hr	
CO_2	0.0	%	Isokinetic Ratio	109
O_2	21.0	%	gr/scf	0.0014
CO_2	0.0	%		
N_2	79.0	%		
AP, Velocity head (traverse points)	0.000993	in. H_2O	Lb/Hr	
C_p, Pitot tube coeff.	0.84		Lb/mm BIU	
Θ, Sampling time	240 min x 60	sec.		
A_n, area of nozzle D=1.240"	0.00839	ft^2		
Weight of collected pollutant	17.40	gm	REQUESTED BY	
CO_2, Waste only		%	REVIEWED BY	
A_s, Area of stack D= ft $\frac{D^2}{4}\pi$	5381	ft^2	DATE	
Boiler Beat Capacity		mmBTU/Hr.	RECOMMENDATION	

REMARKS

$$\bar{U} = \frac{Q_n}{A_o}\frac{T_o}{T_n}$$

$$1.70\ \frac{ft}{sec} = \frac{(32,293,420 + 33,296,079)/2}{5381}\ \frac{(460+162)}{(460+(\frac{162+168}{2}))}\ \frac{hr}{3600\ sec}$$

DEP 4033

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Fabric Pressure Baghouse

RUN NO. Prelim 2/3 fans; one 900 amp fan off

MODEL OR NAME

DATE OF TEST 5-10, 2000 15:15

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
T_s, Stack temperature	156 °F	V_{wc}, Volume of water ___ cf
P_s, Stack pressure	29.63 in.Hg.	B_{wo}, Moisture of content 1% assumed
T_m, Meter temperature	°F	V_{ne}, Volume of sample at stack cond. ___ cf
P_m Meter pressure	in.Hg.	M_{dry}, Molecular wt dry 28.84
M_w, Condensed water	gm	M_{wet}, Molecular wt wet 28.73
V_{DGM}, Volume of sample (meter conditions)	cf	Velocity 49.55 fps
		Qsd 19,711,920 DSCF/m
CO_2	%	Isokinetic Ratio
O_2	%	
CO_2	%	gr/scf @ 12% CO_2
N_2	%	
AP, Velocity head (traverse points)	0.658039 .811196 in.H_2O	Lb/Hr
C_p, Pitot tube coeff.	0.84	Lb/mm BTU
___ min x 60		
Θ, Sampling time	sec.	
A_n, area of nozzle D= "	ft^2	
D^2 x 0.005454		
Weight of collected pollutant	gm	REQUESTED BY
CO_2, Waste only	%	REVIEWED BY
		DATE
A_s, Area of stack D= ft $\frac{D2}{4}$ π 10'11½" x 12'	131.5 ft^2	RECOMMENDATION
Boiler Heat Capacity	mmBTU/Hr.	

$$\bar{V} = \frac{Q_1}{A_0} \cdot \frac{T_0}{T_1}$$

REMARKS

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Product Vacuum Baghouse

RUN NO. [illegible]

MODEL OR NAME

DATE OF TEST 5-10, 2000

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
P_b 29.46		
T_s, Stack temperature	155 °F	V_{H2O}, Volume of water ____ cf
P_s, Stack pressure	29.81 in.Hg.	B_{wo}, Moisture of content 1% [illegible]
T_m, Meter temperature	°F	V_s, Volume of sample ____
P_m, Meter pressure	in.Hg.	at stack cond. ____ cf
M_w, Condensed water	gm	M_{dry}, Molecular wt dry 28.84
V_{DGM}, Volume of sample (meter conditions)	cf	M_{wet}, Molecular wt wet 28.73
		Velocity 79.96 fps
		Qsd 32,054,867 DSCF/hr
CO_2	%	Isokinetic Ratio
O_2	%	
CO	%	gr/scf @ 12% CO_2
N_2	%	
AP, Velocity head 1.72648 (traverse points)	in.H_2O 131396	Lb/Hr
C_p, Pitot tube coeff. 0.84		Lb/mm BTU
____ min x 60		
Θ, Sampling time	sec.	
A_n, area of nozzle D= "	ft^2	
D^2 x 0.005454		
Weight of collected pollutant	gm	REQUESTED BY
CO_2, Waste only	%	REVIEWED BY
		DATE
A_s, Area of stack D= ft $\frac{D2}{4}$ π 10'11½" x π	131.5 ft^2	RECOMMENDATION
Boiler Heat Capacity	mmBTU/Hr.	

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Key Electric Steel

TEST NO.

SOURCE TYPE Hasell Pneumatic B.

RUN NO. prelim vel 2/3 fans 1,400 amp from down 1730

MODEL OR NAME

DATE OF TEST 5-12,

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
T_s, Stack temperature	171 °F	V_{H_2O}, Volume of water ____ cf
P_s, Stack pressure	29.75 in.Hg.	B_{wo}, Moisture of content 18% assumed
T_m, Meter temperature	°F	V_{ne}, Volume of sample ____ at stack cond. ____ cf
P_m, Meter pressure	in.Hg.	M_{dry}, Molecular wt dry 28.84
M_w, Condensed water	gm	M_{wet}, Molecular wt wet 28.73
V_{DGM}, Volume of sample (meter conditions)	cf	Velocity 68.82 fps
		Qso 26,835,310 DSCF/hr
CO_2	%	Isokinetic Ratio
O_2	%	
CO_2	%	gr/scf @ 12% CO_2
N_2	%	
AP, Velocity head (traverse points)	1.24393 in.H_2O 1.11552	Lb/Hr
C_p, Pitot tube coeff.	0.84	Lb/mm BTU
____ min x 60		
Θ, Sampling time	sec.	
A_n, area of nozzle D= "	ft^2	
D^2x 0.005454		
Weight of collected pollutant	gm	REQUESTED BY
CO_2, Waste only	%	REVIEWED BY
		DATE
A_s, Area of stack D= ft $\frac{D^2}{4}\pi$ 10'11½" x 12'	131.5 ft^2	RECOMMENDATION
Boiler Heat Capacity	mmBTU/Hr.	

REMARKS

DEP 4033