AP32 Section:	12.5.1
Background Chapter	3
Reference:	33
Title:	Air Emissions Test Report, Total Particulate Matter Emissions, Harsell Positive Pressure Baghouse, Kentucky Electric Steel, Inc., Ashland, KY. Prepared for Kentucky Electric Steel, Inc., Ashland, KY. July 2000. Submitted by Environmental Quality Management, Inc., Cincinnati, OH. PN: 050163.0009.

JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

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

800 229 7495

Prepared by:

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 . . .

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/jla

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 impingers 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.

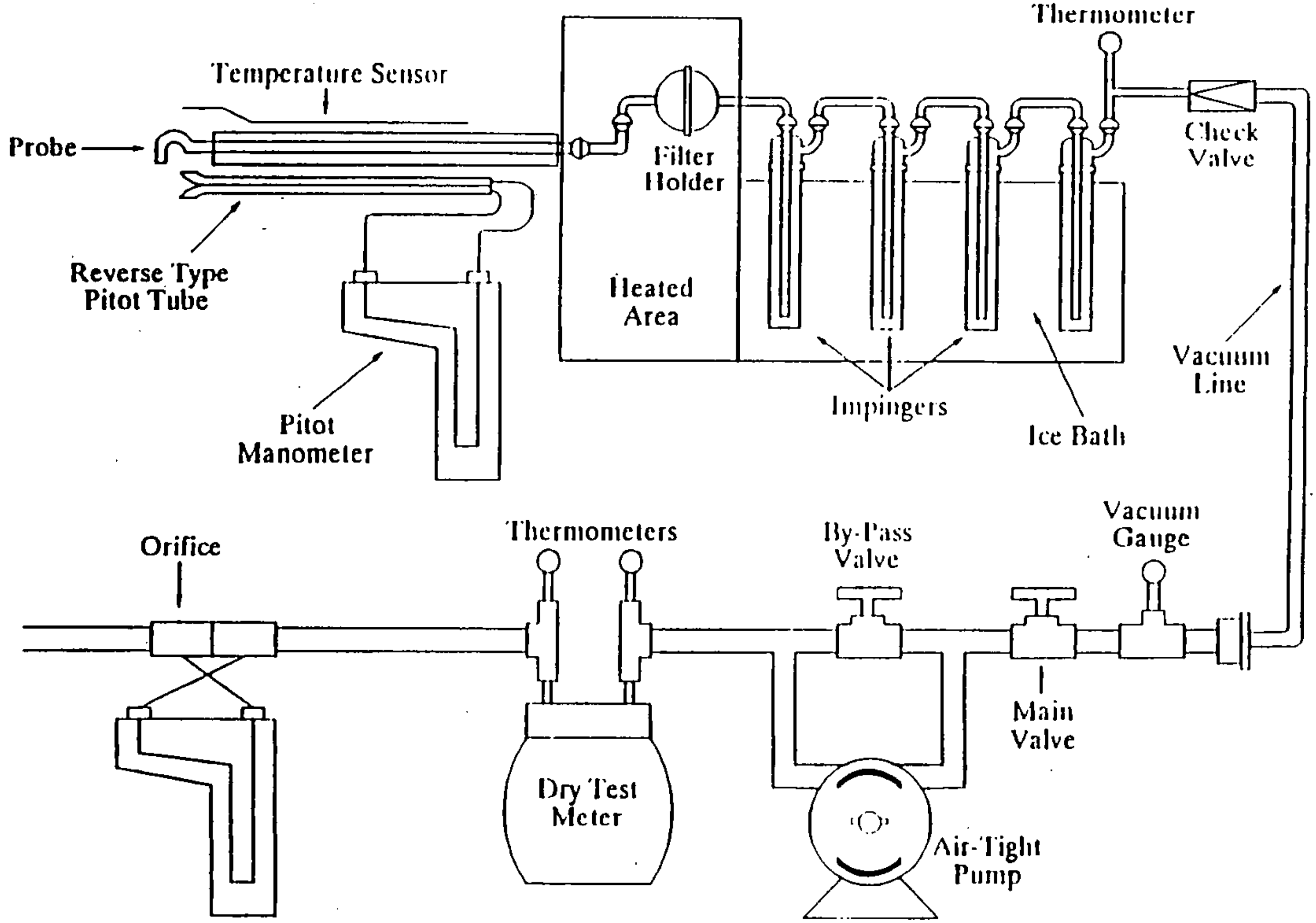


Figure 2-1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

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

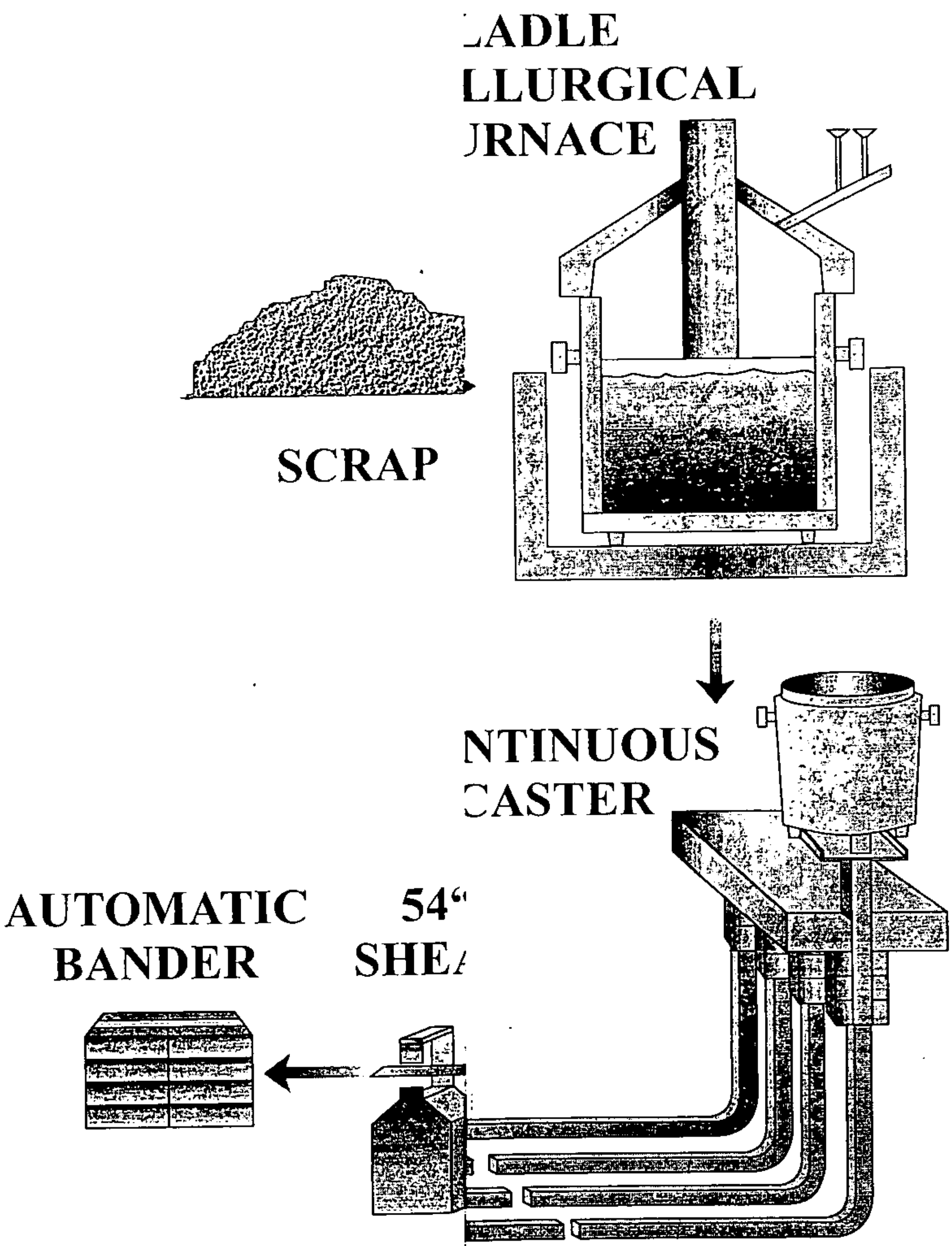


Figure 3-1. Pro

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.

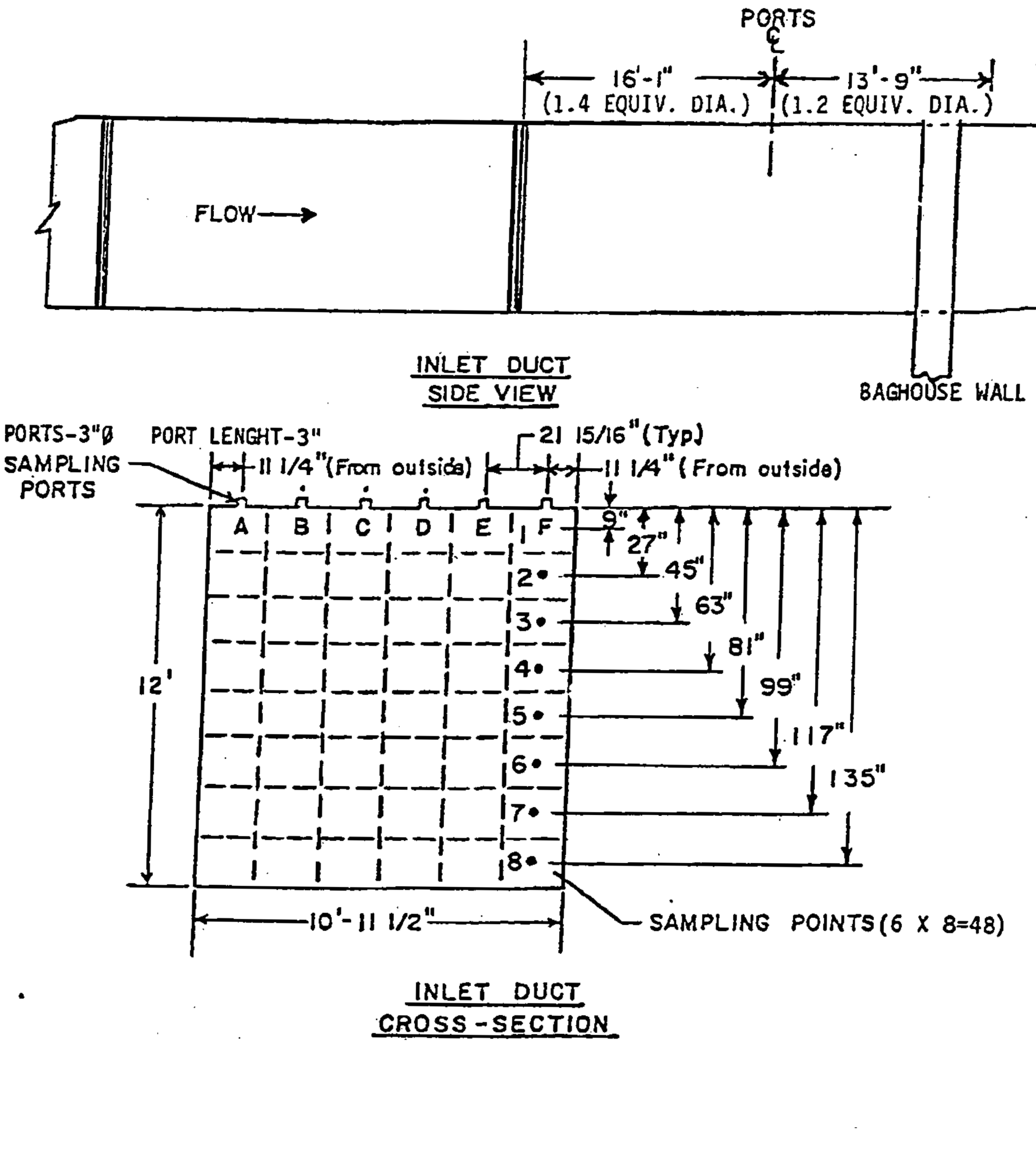
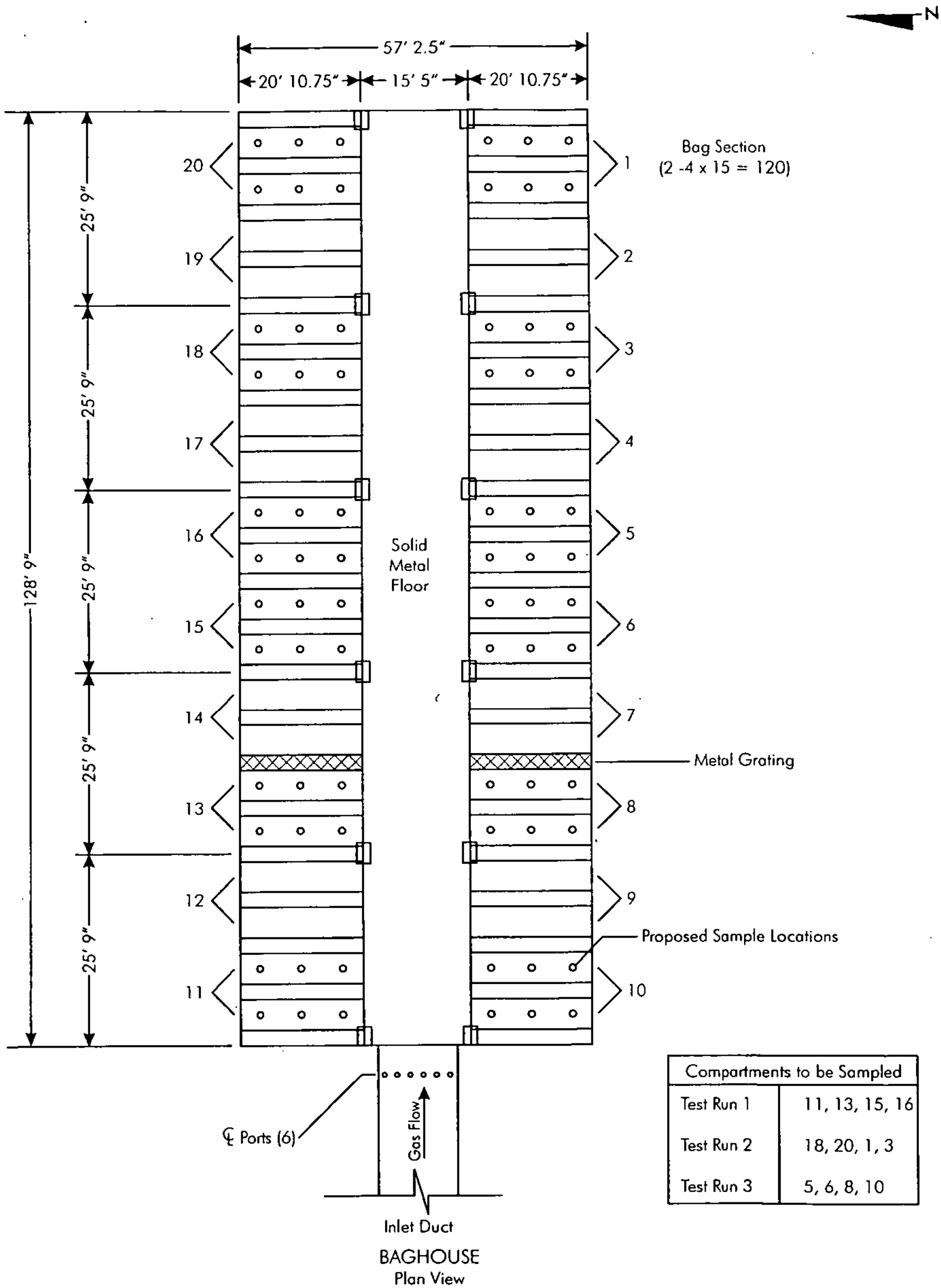


Figure 3-2. Inlet Velocity Measurement Location



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 ΔH @ ±0.15 post-test Y ±0.05 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	±0.004 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: 606/929-1330

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. 8 hrs/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

DEP 6027
3/6/97

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	Particulate Matter	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 CLEAN-UP OR ANALYSIS TO BE DONE ON-SITE Front-half, back-half, and filter recovery will be performed on site

COMPLIANCE TEST PROTOCOL CONTINUED

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: ________ CO2: __________ O2: ____________ Meter Box #: _____ Y: _____ $\Delta H@$: ______

Pretest Leak Rate: ______ cfm @ ___ in. Hg. Probe Length/Type: ________ Pitot #: ____ 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 Head (Δp) in H_2O	Orifice Pressure Differential (ΔH) in H_2O		Stack Temp. (Ts)	Temperature ^oF		Impinger Temp. ^oF	Dry Gas Meter Temp.		Pump Vacuum (in. Hg)
					Desired	Actual		Probe	Filter		Inlet ($Tm\ in^oF$)	Outlet ($Tm\ out^oF$)	

$\Delta Vm=$ ________ $\overline{\sqrt{\Delta p}}=$ ________ $\overline{\Delta H}=$ ________ $\overline{Ts}=$ ________ $\overline{Tm}=$ ________

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, ^oF: __________ Dry Bulb, ^oF: __________

Traverse Point Number	Velocity Head in. H_2O	Stack Temp. ^oF
	$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$$

$$Ms = (\quad) \times (1 - \frac{\quad}{100}) + 18 (\frac{\quad}{100})$$

$Ms =$

$\overline{Ts} = \quad {}^oF = \quad {}^oR \; ({}^oF + 460)$

$$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$$

$Ps = \quad$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,({}^oR)}{Ps \times Ms}}$$

$$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$$

$Vs = \quad$ ft/s

$As = \quad ft^2$

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs = \quad$ acfm

$$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$$

$$Qs_{std} = \quad \times 17.647 \times \frac{\quad}{\quad} \times (1 - \frac{\quad}{100})$$

$Qs_{std} = \quad$ dscfm

Pacific Environmental Services, Inc.

Dry Molecular Weight Determination

Client/Project: ______ Orsat No. ______

Date/Time: ______ Operator ______

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								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								0.44	
	O_2[a]								0.32	
	CO[b]								0.28	
	N_2[c]								0.28	
									Md =	

[a] O_2 Net Volume is O_2 actual reading minus CO_2 actual reading.

[b] CO Net Volume is CO actual reading minus O_2 actual reading.

[c] N_2 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

to Mary Lou
Aug 14 00

Francis Bailey
Kentucky Electric Steel
PO Box 3500
Ashland, Ky 41105

Dear Sir

On May 10-12, 2000, personnel from the Kentucky Division of Air Quality observed particulate compliance tests on Kentucky Electric Steel's Harrell Open Top enclosed particulate compliance tests on Kentucky Electric Steel's baghouse. Testing was performed by PES and EP, 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-[illegible]	1355-[illegible]	0.0012	4.[illegible]
2	5-[illegible]	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 [illegible] [illegible], [illegible] [illegible] not [illegible] [illegible] [illegible]. The allowable [illegible] [illegible] [illegible] for [illegible] source [illegible] [illegible] [illegible] .0052 gr/DSCF. The baghouse was ~~not~~ in compliance at the time of the test.

CC: main file 21-019-00020
Ashland Regional Office

EQ Tom Seattle
PES Dan Schaffel

Thurs May 11 Ky Electric Steel - Eddie Hall 606 929 1200

start 1:55 p Vm 118.747 pt 1 2 3 4 5 6 7 8 duct

	1	2	3	4	5	6	7	8
	2.0	1.8	1.8	1.9	1.7	1.8	2.0	2.1

stop 7:35 p Vmf 295.810 dp .00106 → all same before vertical pos

Dw 1.000 Ts 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 Vm 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 11:20 Vmf 493,799 0.000993 → all same baghouse

Ts ~160°F Dw 1.240 final lk √0.001 @ 4 in Hg pitot lk √ ok

opacity from shop roof out 8:44 A 9:45 A

start 12:18 Vm 404.320 pt 1 2 3 4 5 6 7 8

stop 4:00 Vmf 672,672 dp

	1 (bottom)	2	3	4	5	6	7	8
	1.3	.98	1.0	1.7	1.9	1.8	2.1	2.0

Dw Ts final lk ~~.004~~ √0.003 @ 5 in Hg pitot lk √ ok

fugitives from melt shop roof 1:37 p, 2:03 p, 3:58 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

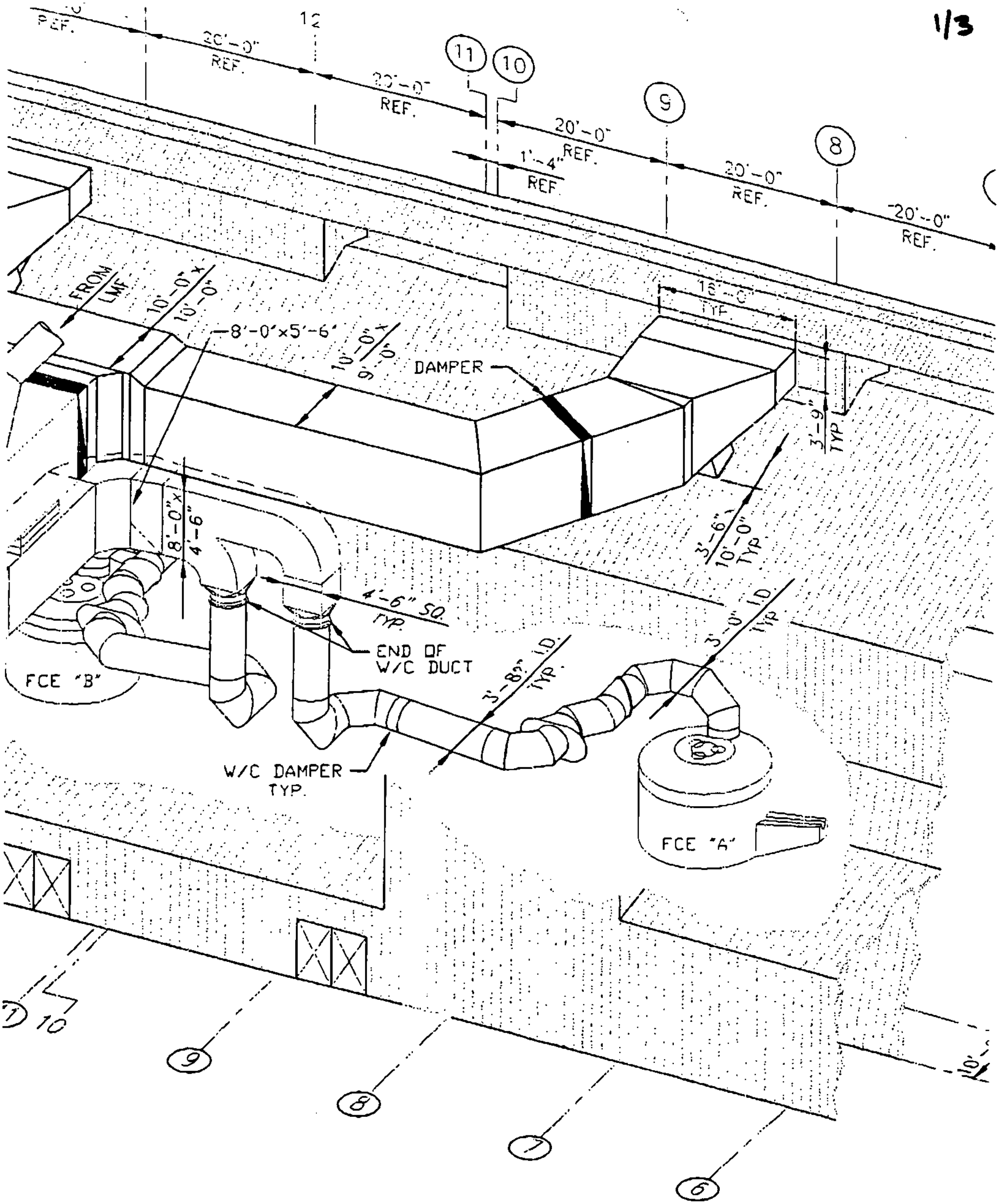
Message:

SCHEMATIC OF KES DUCT 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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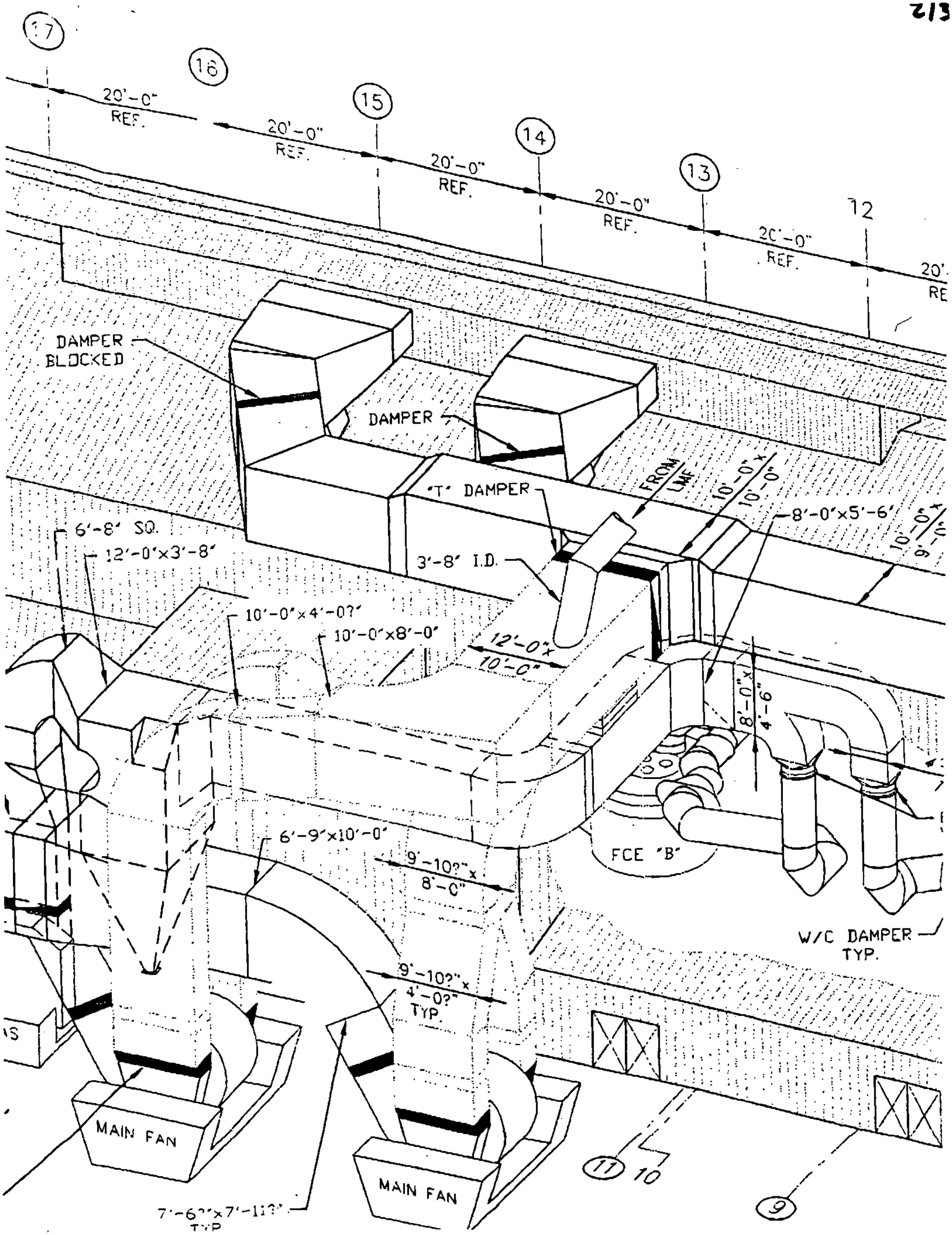
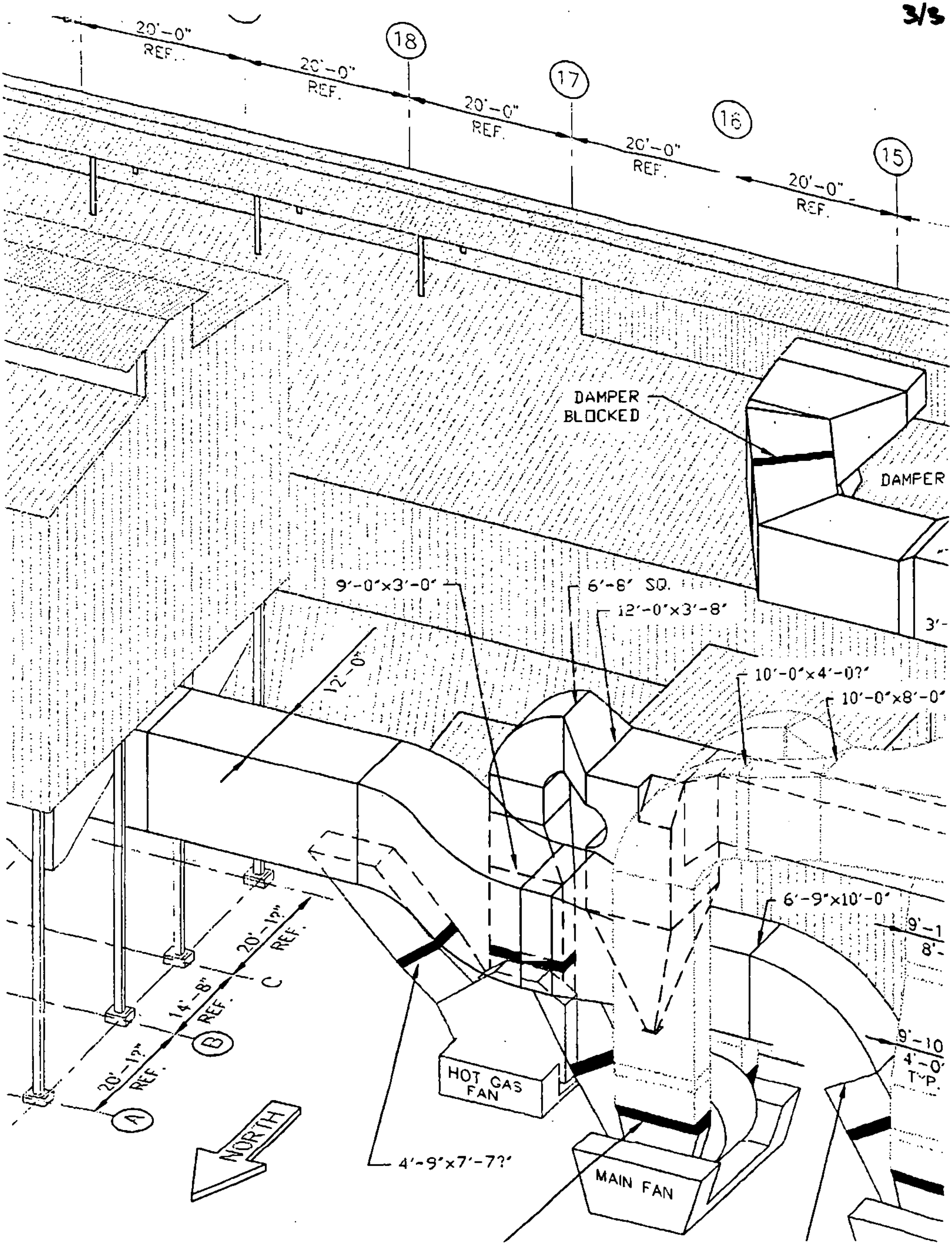
REF.
20'-0"
REF.
11
10
9
8
20'-0"
REF.
1'-4"
REF.
20'-0"
REF.
20'-0"
REF.
16'-0"
TYP.
FROM LMF
10'-0" x 10'-0"
8'-0'x5'-6'
10'-0" x 9'-0"
DAMPER
3'-9"
TYP.
3'-6" x 10'-0"
TYP.
8'-0" x 4'-6"
4'-6" SQ.
TYP.
END OF
W/C DUCT
3'-0" I.D.
TYP.
3'-8" I.D.
TYP.
FCE "B"
W/C DAMPER
TYP.
FCE "A"
10
9
8
7
6



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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REF.
20'-0"
REF.
18
20'-0"
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16
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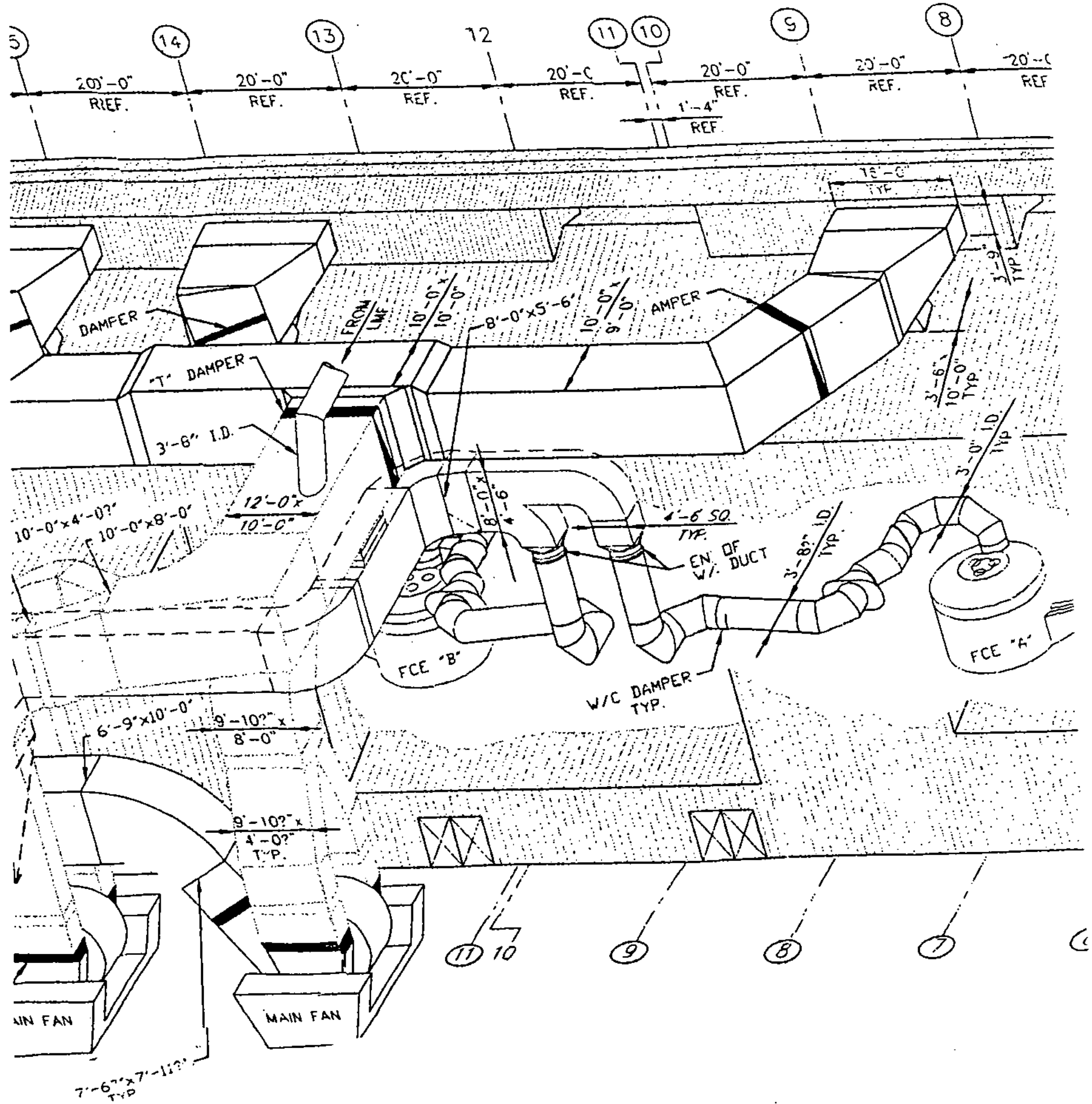
15
20'-0"
REF.
DAMPER
BLOCKED
DAMPER
9'-0"x3'-0"
6'-8' SQ.
12'-0"x3'-8"
3'-
12'-0"
10'-0"x4'-0?"
10'-0"x8'-0"
6'-9"x10'-0"
9'-1
8'-
20'-1?"
REF.
14'-8"
REF.
C
B
20'-1?"
REF.
A
HOT GAS
FAN
9'-10
4'-0'
TYP.
NORTH
4'-9"x7'-7?"
MAIN FAN



20'-0" REF.
1'-4" REF.
DAMFER
FROM LMF
"T" DAMPER
3'-6" I.D.
8'-0"x5'-6'
AMPER
12'-0"x 10'-0"
10'-0"x4'-0?"
10'-0"x8'-0"
4'-6 SQ. TYP.
EN. OF W/. DUCT
3'-8" I.D. TYP.
3'-0" I.D. TYP.
FCE "B"
FCE "A"
W/C DAMPER TYP.
6'-9"x10'-0"
9'-10?" x 8'-0"
9'-10?" x 4'-0?" TYP.
MAIN FAN

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.
1310 Kemper Meadow Drive, Suite 100
Cincinnati, Ohio 45240
(513) 825-7500
Fax: (513) 825-7495

PN: 050163.0009

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1310 Kemper Meadow Drive • Suite 100
Cincinnati, Ohio 45240
(513) 825-7500
FAX (513) 825-7495

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 /sb

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

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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_2 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 (acfm) 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_2 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.

STACK TEST REVIEW

NAME Ky Electric Steel   TEST NO.

SOURCE TYPE Harsell Position Pressure Baghouse   RUN NO. 130-3

MODEL OR NAME   DATE OF TEST 5-12-00   12[18]-16[18]

TEST PERFORMED BY EQ/PES

DATA REQUIRED	RESULTS
T_s, Stack temperature 168 °F (P_b 29.45)	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 165.017 at stack cond. cf
P_m, Meter pressure 29.57 in.Hg.	
M_w, Condensed water 93.0 gm	M_{dry}, Molecular wt dry 28.84
V_{DGM}, Volume of sample 178.352 cf (meter conditions) 80.988	M_{wet}, Molecular wt wet 28.56
	Velocity 1.65 fps
	Q_{so} 25,754,756 DSCF/hr
CO_2 0.0 %	Isokinetic Ratio 1.03
O_2 21.0 %	
CO_2 0.0 %	gr/scf 0.0007
N_2 79.0 %	
ΔP, Velocity head 0.00763 (0.02762) in.H_2O (traverse points)	Lb/Hr
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^2 x 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.	

$$\bar{V} = \frac{Q_s}{A_o}\frac{T_o}{T_s}$$

$$1.65 = \frac{(33296074+39612842)/2}{5381}\frac{(460+168)}{(460+\frac{146+191}{2})}\frac{hr}{3600\ sec}$$

REMARKS

$$I = \frac{.0945\ V_{m_{std}}(460+T_s)}{(1-B_{ws})P_s\ A_n\ V_s\ \theta}$$

$\frac{7.05\ mg}{165.017\ DSCF}\ \frac{gm}{1000\ mg}\ \frac{7000\ gr}{lb}\ \frac{lb}{453.59\ gm}$

DEP 4033

STACK TEST REVIEW

NAME Kentucky Electric Steel | TEST NO.

SOURCE TYPE Harsell Positive Pressure Cooling | RUN NO. DC-1

MODEL OR NAME | DATE OF TEST 5-11-00 1355- 1945

TEST PERFORMED BY EQ/RSS

DATA REQUIRED			RESULTS		
T_s, Stack temperature (P_b 29.60)	145	°F	V_{H20}, Volume of water	2.048	cf
P_s, Stack pressure	29.59	in.Hg.	B_{wo}, Moisture of content	1.37%	
T_m, Meter temperature	94	°F	V_{ne}, Volume of sample at stack cond.	161.774	cf
P_m, Meter pressure	29.67	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 (γ 0.988)	cf	Velocity 1.76		fps
			Qsd 29,017,386 DSCF/hr		

CO_2	0.0	%	Isokinetic Ratio 1.10
O_2	21.0	%	gr/scf @ ~~12% CO2~~
CO_2	0.0	%	0.0012 no back half
N_2	79.0	%	

ΔP, Velocity head 0.001036 (0.032187) in.H_2O (traverse points)

C_p, Pitot tube coeff. 0.84

Lb/Hr

Lb/mm BTU

300 min x 60

Θ, Sampling time ________ sec.

A_n, area of nozzle D= 1.00 " .005454 ft^2
D^2x 0.005454

Weight of collected pollutant 12.15 (3030 u) gm

CO_2, Waste only ________ %

REQUESTED BY

REVIEWED BY

DATE

RECOMMENDATION

A_s, Area of stack
D= ft $\frac{D2}{4}$ π 5381 ft^2
8665-185 ½" x 1545"

Boiler Heat Capacity mmBTU/Hr.

$$\bar{V} = \frac{Q_s}{A_o} \frac{T_o}{T_s} \qquad Q_s = Q_{1a+1b}$$

REMARKS

$$1.76 \frac{ft}{sec} = \frac{67112,210 \frac{?}{}}{5381 ft^2} \frac{(460+145)}{(460+136)_{avg}} \frac{hr}{3600 sec}$$

DEP 4033

STACK TEST REVIEW

NAME Kentucky Electric Steel　　TEST NO.

SOURCE TYPE Hassell Positive Pressure Baghouse　　RUN NO. BO-2

MODEL OR NAME　　DATE OF TEST 5-12-00　7[15] 11[20]

TEST PERFORMED BY EQ/FES

DATA REQUIRED			RESULTS		
T_s, Stack temperature	P_b 29.45 162	°F	V_{H20}, Volume of water	4.754	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	29.61	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)	197.399 180.988	cf	Velocity 1.70 Q_{SD} 26,818,676 DSCF/hr		fps

CO_2	0.0	%	
O_2	21.0	%	
CO_2	0.0	%	
N_2	79.0	%	

Isokinetic Ratio 1.09

gr/scf ~~[illegible]~~
0.0014

ΔP, Velocity head 0.000993 (0.03151) in.H_2O
(traverse points)
C_p, Pitot tube coeff. 0.84

Lb/Hr

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 17.40 (300382) gm
CO_2, Waste only ______ %

REQUESTED BY

REVIEWED BY

DATE

RECOMMENDATION

A_s, Area of stack
D= ft $\frac{D2}{4}\pi$ 5381 ft^2

Boiler Heat Capacity ______ mmBTU/Hr.

REMARKS

$$\bar{U} = \frac{Q_s}{A_s}\frac{T_s}{T_m}$$

$$1.70\ \frac{ft}{sec} = \frac{(32,293,420+33,296,079)/2}{5381}\ \frac{(460+162)}{(460+(\frac{46+168}{2}))}\ \frac{hr}{3600\ sec}$$

DEP 4033

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				Molton Metal Production, Tons/hr.	Baghouse Pressure Drop Inches Water (Range)
		Concentration		Mass Rate			
		gr/dscf[a]	lb/dscf[b]	lb/hr[c]	lb/ton[d]		
O-1	5/11 1355-1945	2.07E-03	2.96E-07	9.54	0.25	38.8	5.4 (5 - 6.1)
O-2	5/12 0630-1050	2.16E-03	3.09E-07	9.48	0.20	48	5.5 (5 - 5.8)
O-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.

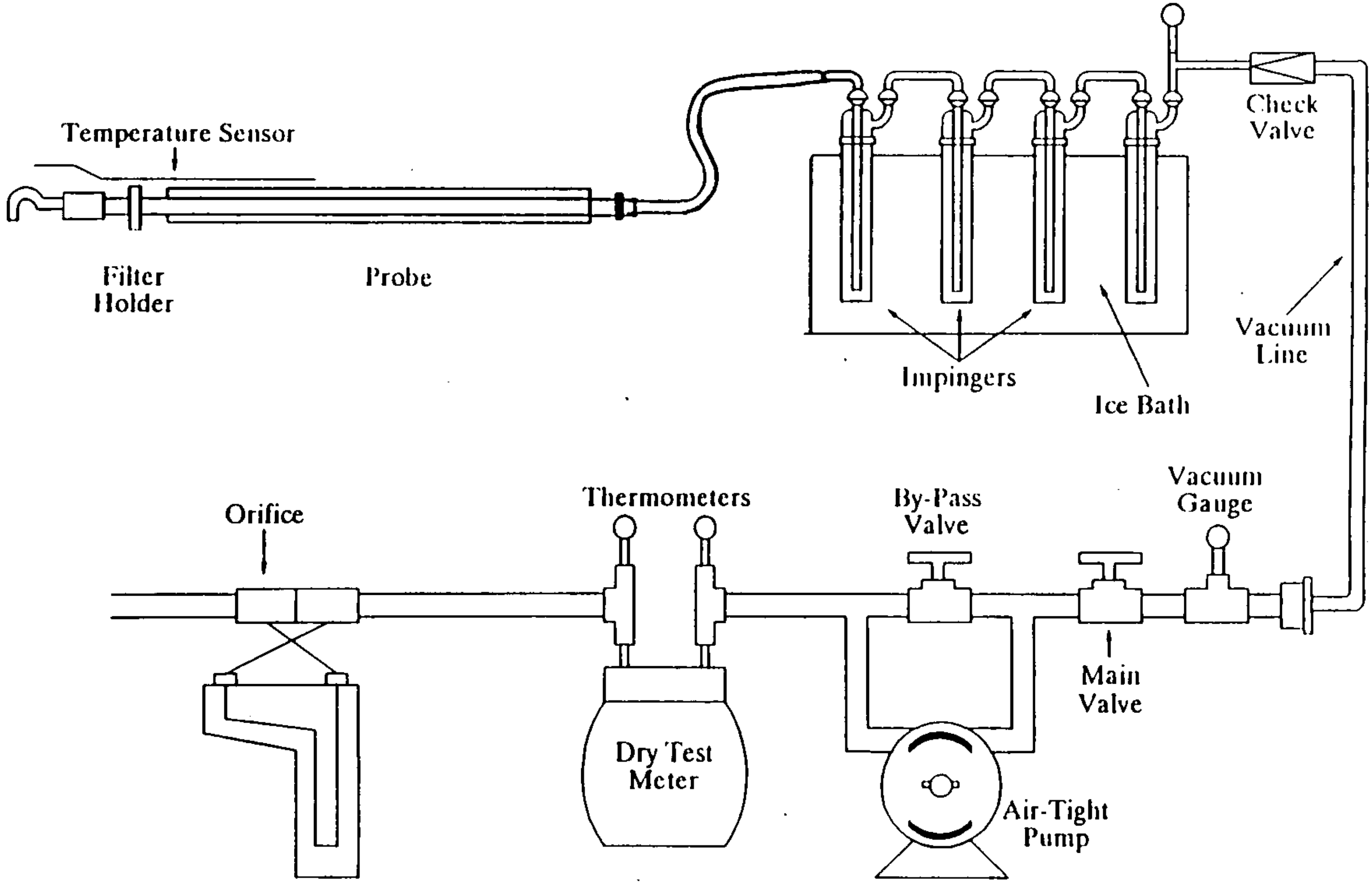


Figure 3.1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

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

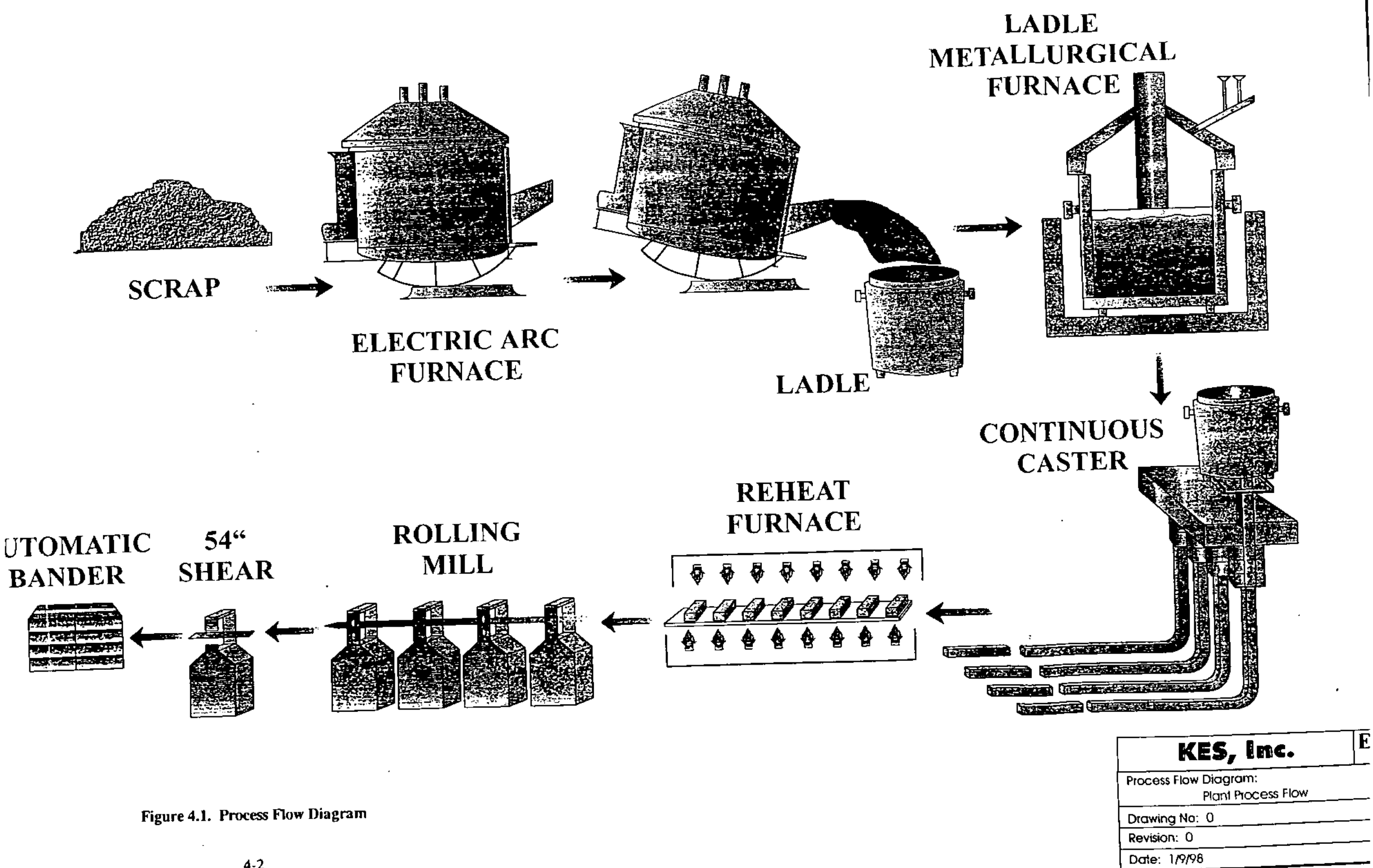


Figure 4.1. Process Flow Diagram

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.

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
5/11/00	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								
DATE	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	Melt
5/12/00	10:35:00 am	5.58	142.49	182.80	174.83	105.90	463.54	Tap
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.

STACK TEST REVIEW

NAME Ky Electric Steel TEST NO. ____

SOURCE TYPE Howell [illegible] Brighton RUN NO. Prelim 2/3 fans; one 900amp [illegible]

MODEL OR NAME ____ DATE OF TEST 5-10, 2000 15:15

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS	
T_s, Stack temperature	P_b 29.4. 156	°F	V_{H2O}, 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)	γ	cf	Velocity 49.55	fps
			Q_{sd} 19,711,720 DSCF/m	
CO_2	%		Isokinetic Ratio	
O_2	%		gr/scf @ 12% CO_2	
CO_2	%			
N_2	%			
ΔP, 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= " D^2 x 0.005454		ft^2		
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.		

$$\bar{V} = \frac{Q_s}{A_o} \cdot \frac{T_a}{T_s}$$

REMARKS

STACK TEST REVIEW

NAME Ky Electric Steel TEST NO. ______

SOURCE TYPE [illegible] RUN NO. [illegible]

MODEL OR NAME ______ DATE OF TEST 5-10, 2000

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS
T_s, Stack temperature	155	°F	V_{H2O}, Volume of water ______ cf
P_s, Stack pressure	P_b 29.46 / 29.81	in.Hg.	B_{wo}, Moisture of content 1% [illegible]
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 79.96 fps
			Q_{sD} 32,054,867 DSCF/hr

CO_2	%	Isokinetic Ratio
O_2	%	gr/scf @ 12% CO_2
CO_2	%	
N_2	%	

ΔP, Velocity head 1.72648 / 1.31396 in.H_2O (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 pollutant ______ gm

CO_2, Waste only ______ %

REQUESTED BY ______

REVIEWED BY ______

DATE ______

RECOMMENDATION ______

A_s, Area of stack 131.5 ft^2

D= ft $\frac{D2}{4}$ π

10'11½" x 12'

Boiler Heat Capacity mmBTU/Hr.

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Ky Electric Steel TEST NO. ____

SOURCE TYPE Howell Preheat Furnace Baghouse RUN NO. prelim Vd 2/3 fans 1.900 amp fan down

MODEL OR NAME ____ DATE OF TEST 5-12, 2000 17:20

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
T_s, Stack temperature (P_b 29.45) 171 °F		V_{H2O}, Volume of water ____ cf
P_s, Stack pressure 29.75 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 68.82 fps
		Q_{sD} 26,835,310 DSCF/hr
CO_2 ____ % ____		Isokinetic Ratio ____
O_2 ____ % ____		gr/scf @ 12% CO_2
CO_2 ____ % ____		
N_2 ____ % ____		
ΔP, Velocity head 1.24393 (1.11532) in.H_2O (traverse points)		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= " ____ ft² 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 10'11.5" x 12' 131.5 ft²		RECOMMENDATION ____
Boiler Heat Capacity mmBTU/Hr.		

REMARKS

DEP 4033

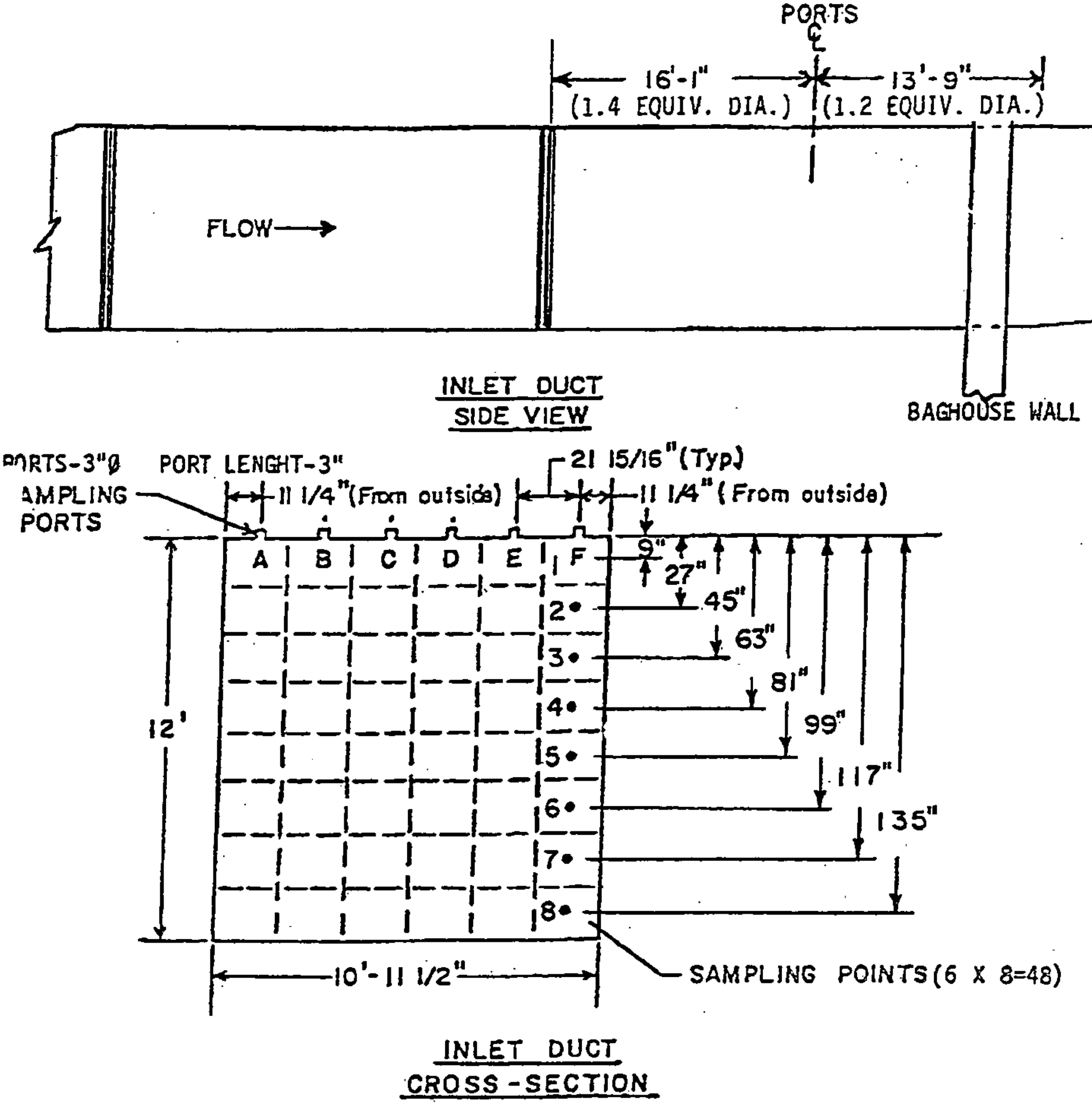
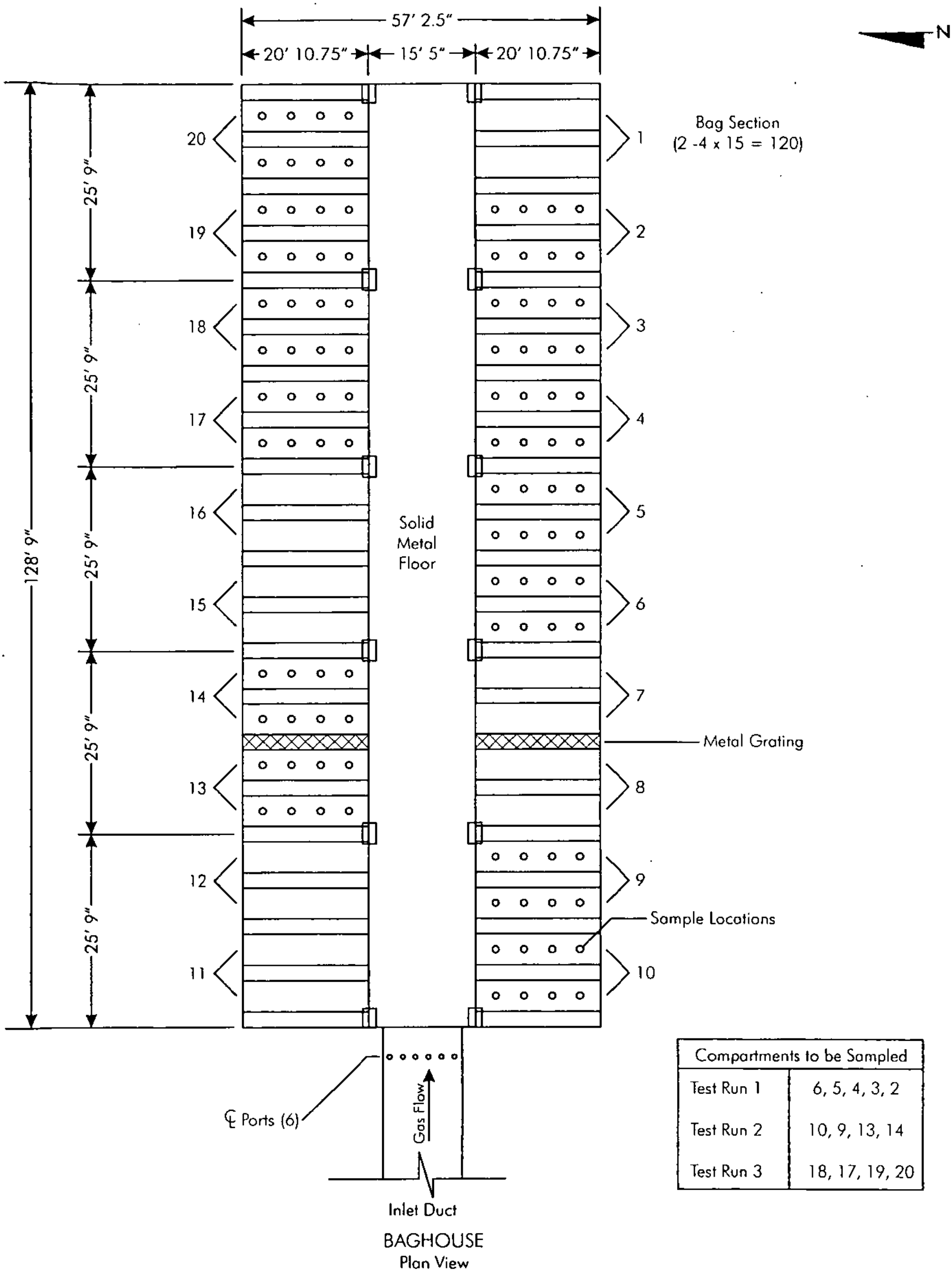


Figure 5.1. Baghouse Inlet Sampling Location



Compartments to be Sampled	
Test Run 1	6, 5, 4, 3, 2
Test Run 2	10, 9, 13, 14
Test Run 3	18, 17, 19, 20

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 ΔH@ ±0.20 ΔH@ 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 III. 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	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
Plant (606) 929-1320 Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	Charge/Melt/Tap
CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	On line

DESCRIBE EMISSION POINT: Middle of Melt shop

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
60'	Start 10' End ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
Start 600' End ✓	Start North End North

DESCRIBE EMISSIONS: Start ~~[illegible]~~ BD Lofty End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start White End ✓	Attached ☐ N/A Detached ☐

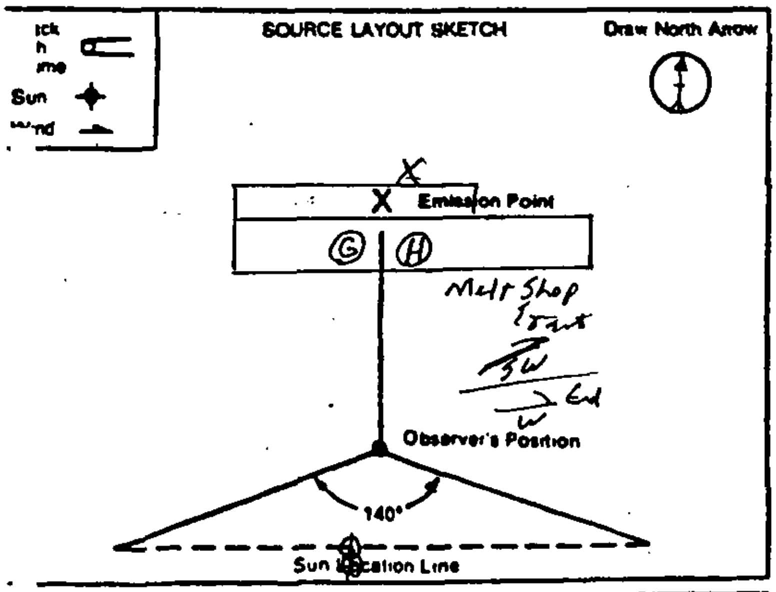
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: Start 10' over the roof monitor End

DESCRIBE PLUME BACKGROUND: Start Trees End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Green End ✓	Start Scattered End ✓
WIND SPEED	WIND DIRECTION
Start 5-10 mph End ✓	Start Southeast End West

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 80 End ✓	N/A	N/A

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	0	15	30	45	COMMENTS
1 (1359)	0	0	0	0	Meltshop
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	
7 (1405)	0	~~00~~ 10	~~00~~ 10	~~00~~ 5	Should have been on
8	~~00~~ 5	~~00~~ 5	~~00~~ 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 (1422)	5	0	0	0	
25 (1423)	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 (1428)	0	0	0	0	

OBSERVER'S NAME (PRINT): Bryan Brumfield

OBSERVER'S SIGNATURE	DATE
[signature]	5-11-00

ORGANIZATION: Environmental Quality Management

CERTIFIED BY	DATE
ETA	3-22-00

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

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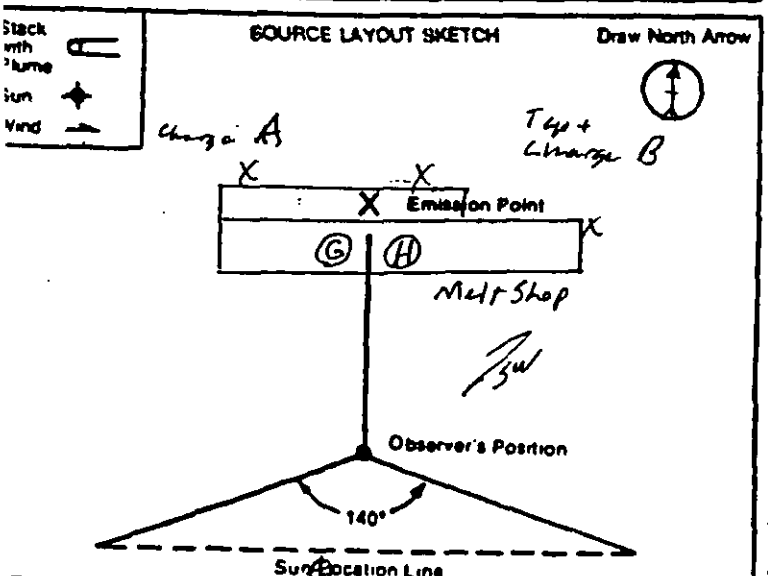
VISIBLE EMISSION OBSERVATION FORM

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 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' 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

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

MIN \ SEC	0	15	30	45	COMMENTS
1 (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	



ADDITIONAL INFORMATION

1st Helper -

Melter -

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
CONTINUED ON VEO FORM NUMBER	03 02

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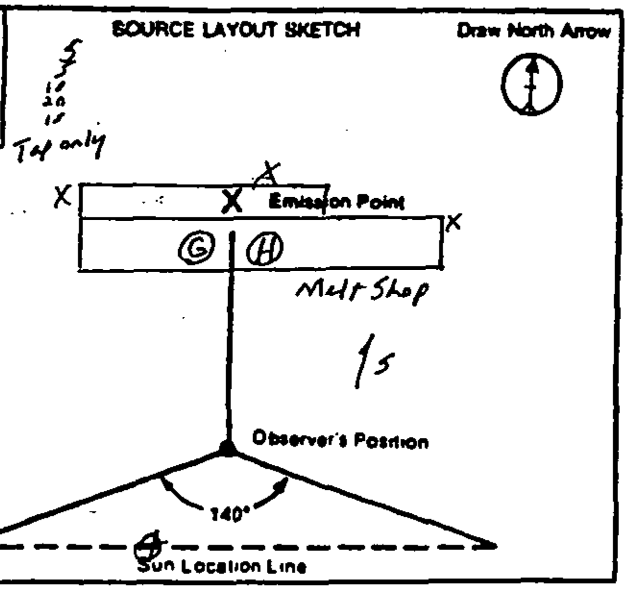
VISIBLE EMISSION OBSERVATION FORM

No. 3 of 6

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 LoPro End ✓
EMISSION COLOR	Start 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 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	5-11-00
START TIME	1459
END TIME	1529

MIN \ SEC	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 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	0403

ADDITIONAL INFORMATION

1st Helper -

Melter -

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VISIBLE EMISSION OBSERVATION FORM

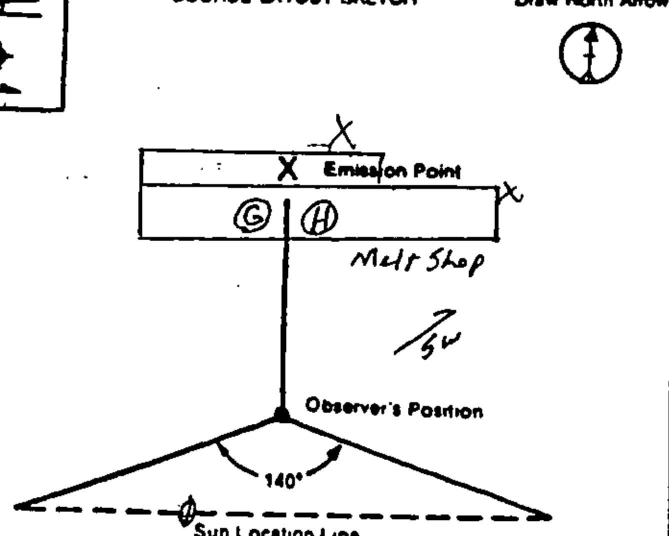
No. 4 of 6

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 PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Same End ✓
DESCRIBE PLUME BACKGROUND	Start Sky 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

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	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 = 1.048
24 (1552)	5	5	5	0	
25 (1553)	0	0	0	10	
26	15	10	25	70	~~blow~~ dust Front end
27	75	80	70	65	Loader at Carrier
28	75	90	85	80	
29	70	50	50	50	1225/24 = 51.04%
30 (1558)	60	60	70	65	

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

CONTINUED ON VEO FORM NUMBER 0 5 ~~0~~ 4

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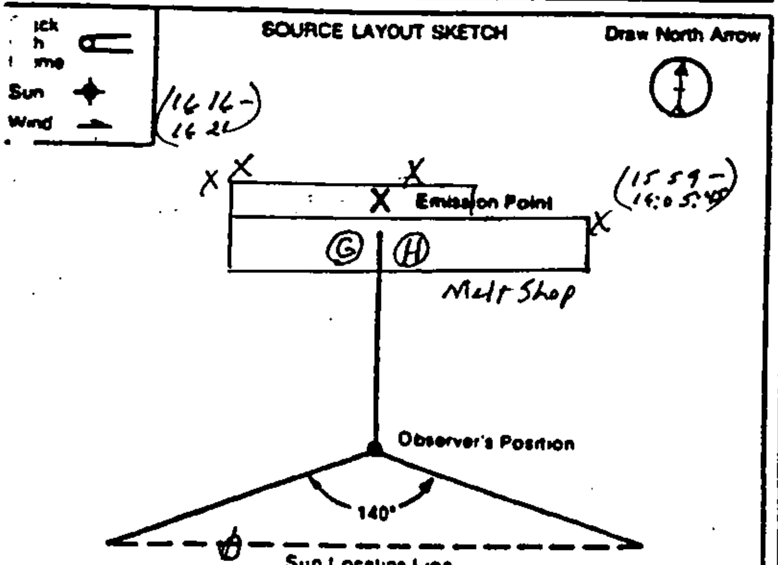
VISIBLE EMISSION OBSERVATION FORM

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 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 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

MIN \ SEC	0	15	30	45	COMMENTS
1 (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 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 6 0 5

ADDITIONAL INFORMATION

1st Helper -

Welter -

VISIBLE EMISSION OBSERVATION FORM

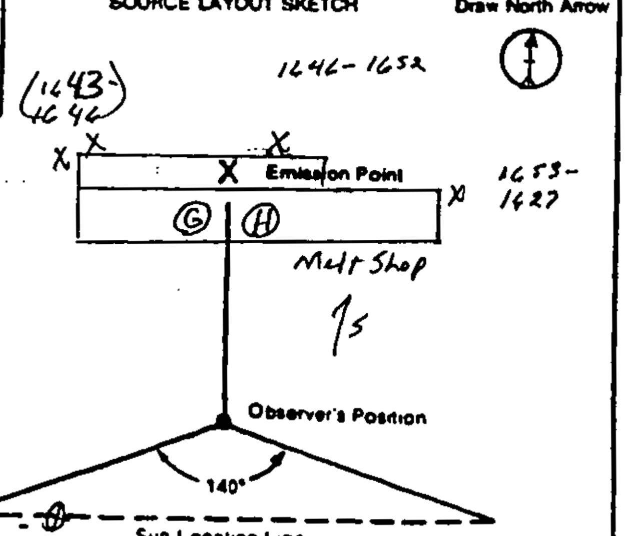
No. 6 of 12

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	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 LoFrny 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 / Cloudy 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

Draw North Arrow

Stack with Plume / Sun / Wind



ADDITIONAL INFORMATION

5T Helper -

Melter -

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

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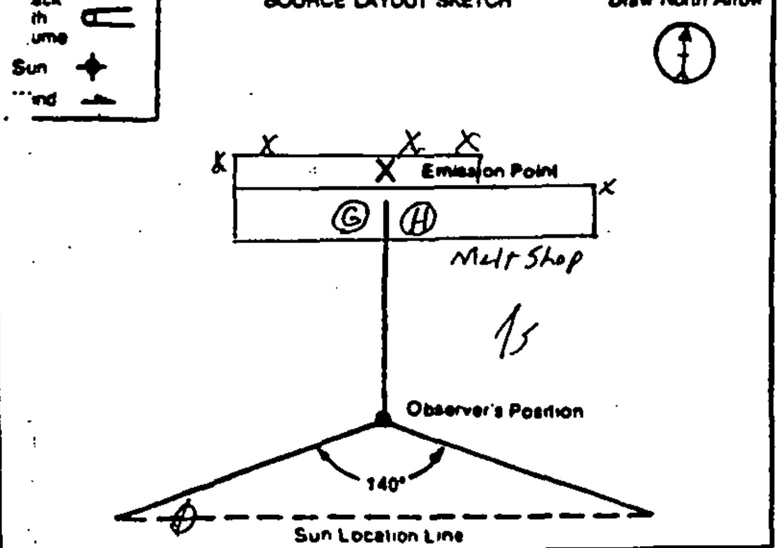
VISIBLE EMISSION OBSERVATION FORM

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

Stack with Plume / Sun / Wind



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

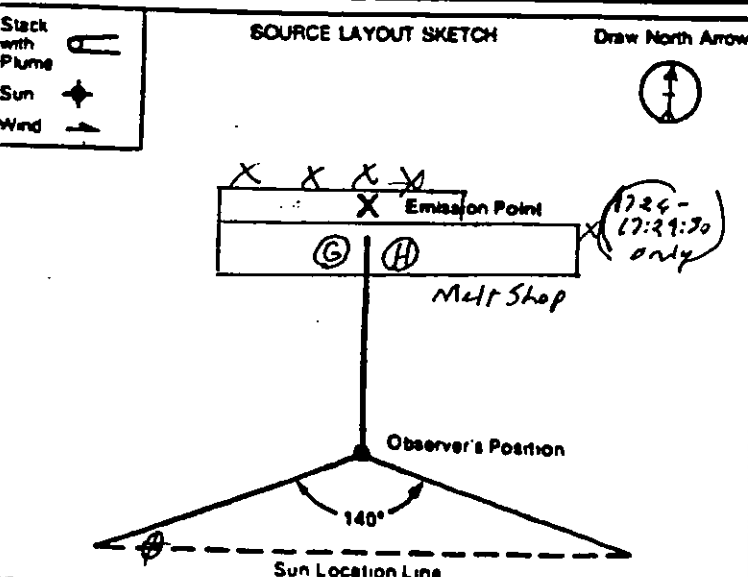
MIN \ SEC	0	15	30	45	COMMENTS
1 (1659)	5	5	5	5	Melt Shop
2	5	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	25/24 = 1.04%
6 (1704)	0	0	0	0	
7 (1705)	0	10	10	15	
8	15	10	5	5	
9	5	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12 (1710)	0	0	0	0	75/24 = 3.13%
13 (1711)	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	40/24 = 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	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	08

[V]ISIBLE EMISSION OBSERVATION FOR[M]

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 White End ✓
EMISSION COLOR	Start Lofting 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/other 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



ADDITIONAL INFORMATION
1st Helper -
Melter -

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

MIN \ SEC	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 Bromfield
OBSERVER'S SIGNATURE	[signature]
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	09

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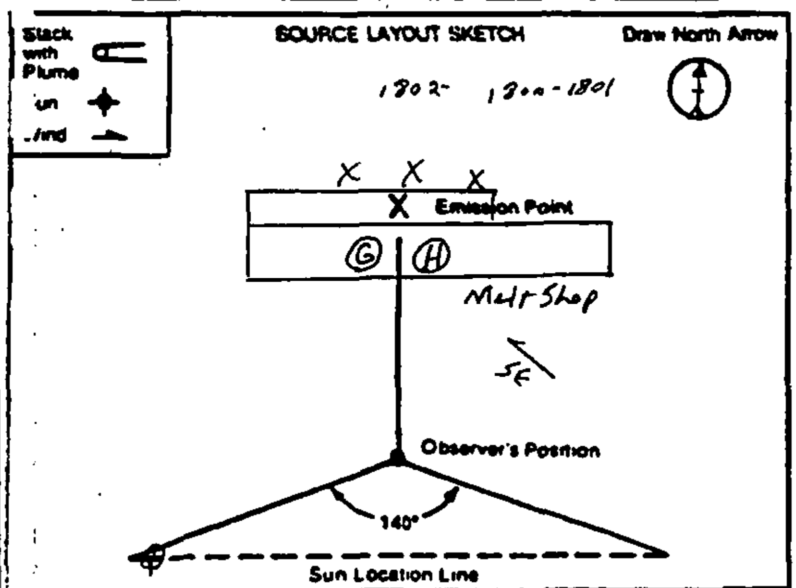
[V]ISIBLE EMISSION OBSERVATION FOR[M]

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



ADDITIONAL INFORMATION

5T Helper -

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

MIN \ SEC	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 (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

Privileged and Confidential - Prepared at the Request of Legal Council

VISIBLE EMISSION OBSERVATION FORM

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

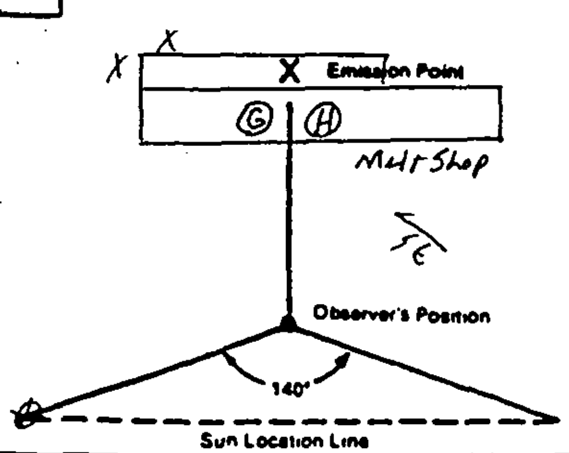
SOURCE LAYOUT SKETCH

Draw North Arrow

Stack with Plume

Sun

Wind



ADDITIONAL INFORMATION

1st Helper -

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

MIN \ SEC	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%
1834	10	10	15	20	
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%
1840	0	0	0	0	
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
1846	0	0	0	0	
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%
1852	5	5	0	0	
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
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

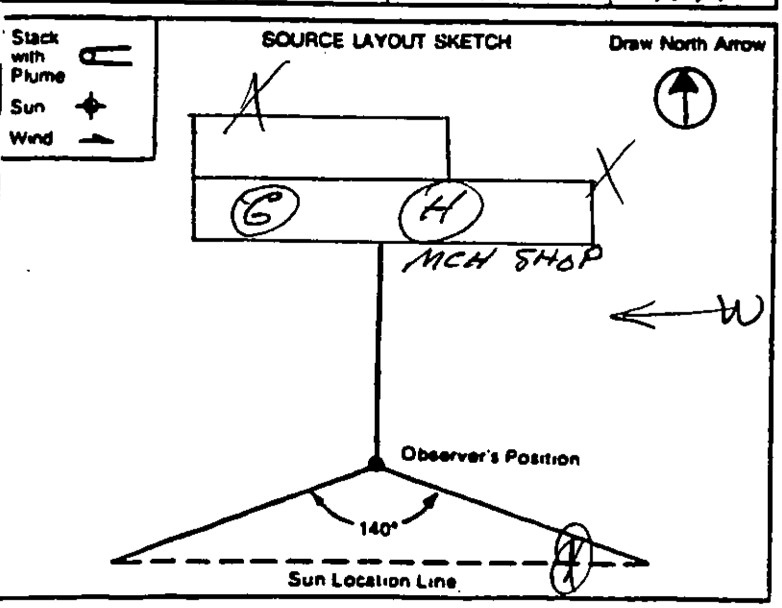
VISIBLE EMISSION OBSERVATION FORM

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 LOFTING End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	Attached ☐ Detached ☐ N/A
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

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	charge 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	Charge B avg 210/24
30	25	35	35	35	end Charge B = 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	3/29/00

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

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

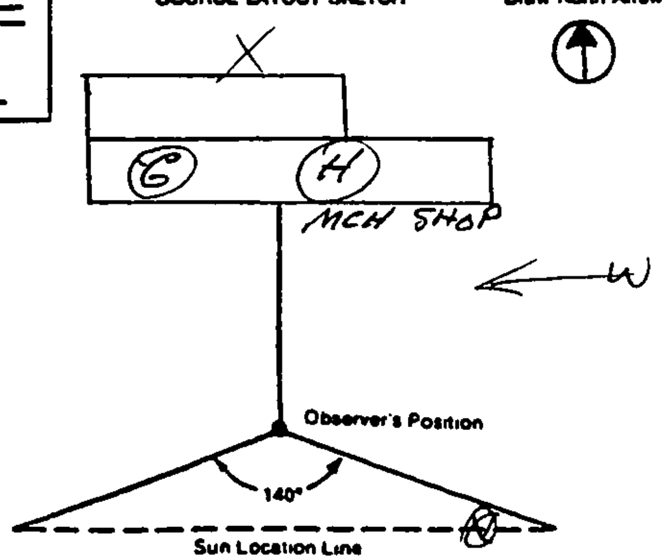
No. 2 OF 9

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~~ 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 4-6mph End ✓
WIND DIRECTION	Start W FROM End
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow

Stack with Plume
Sun
Wind



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	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: 5/12/00

ORGANIZATION: Environmental Quality Management

CERTIFIED BY: ETA DATE: 3/29/0[illegible]

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

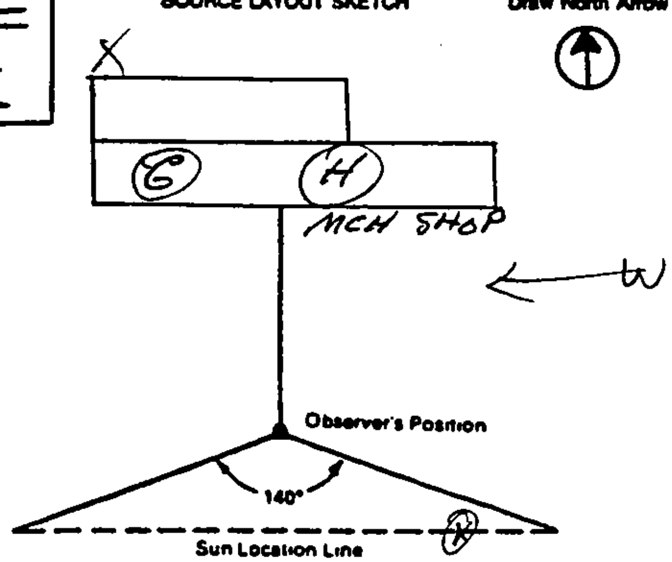
No. 3 OF 9

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 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 BAG HOUSE / TREES End ✓
BACKGROUND COLOR	Start Green / Brown End ✓
SKY CONDITIONS	Start Overcast End ✓
WIND SPEED	Start 4-6 mph End ✓
WIND DIRECTION	Start FROM W End ✓
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow

Stack with Plume
Sun
Wind



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	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	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	3/29/00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

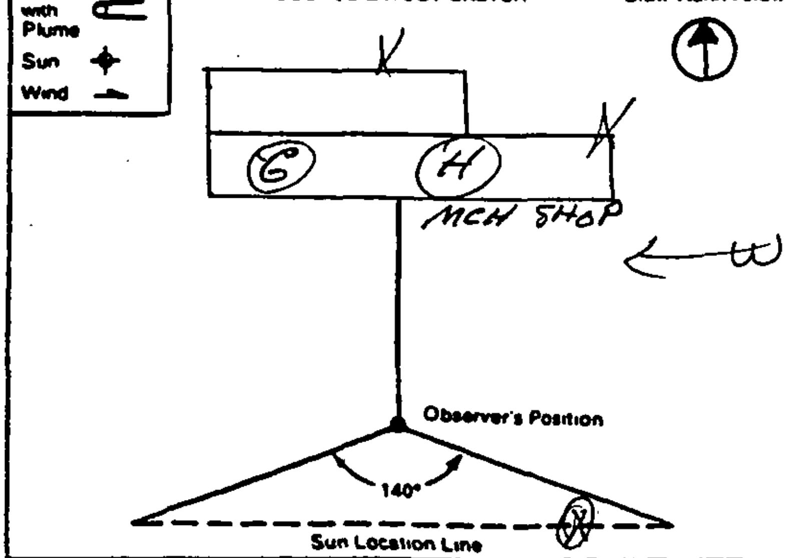
No. 4 of 9

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 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 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 From W End
AMBIENT TEMP	Start 72 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 Hill

Melter - Bruce Wood

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	3/29/00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

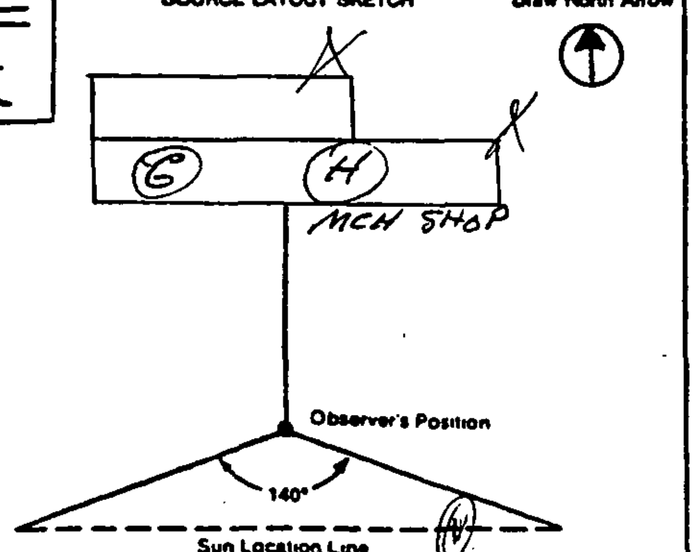
No. 5 of 9

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 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 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	FROM Start W End ✓
AMBIENT TEMP	Start 72 End
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow

Stack with Plume / Sun / Wind



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	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 450/24
18	25	30	30	40	end charge
19	45	45	35	40	6
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 Heysley
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 FORM

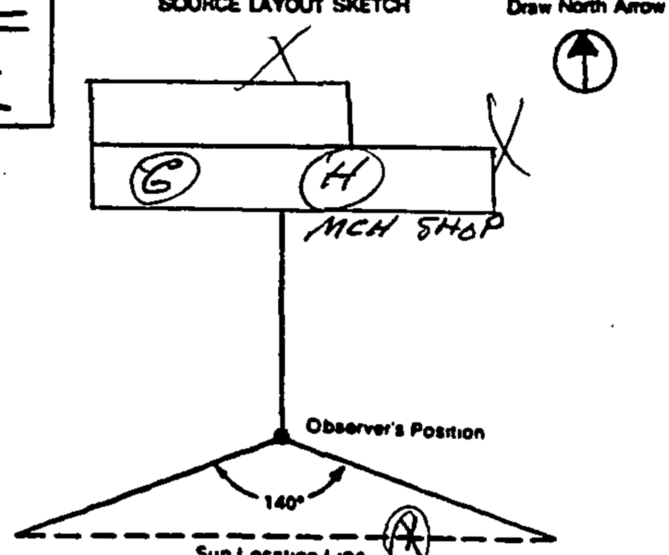
No. 6 OF 9

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 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 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

Draw North Arrow

Stack with Plume / Sun / Wind



ADDITIONAL INFORMATION

1st Helper - Jim Hall Woody Hall

Melter - Bruce Moore

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

MIN \ SEC	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	10	0	0	end tap
16	10	0	0	0	~~Change A~~
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	

VISIBLE EMISSION OBSERVATION FORM

No. 2 OF 9

COMPANY NAME
Kentucky Electric Steel, Inc.

STREET ADDRESS
U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT
~~Baghouse Exhaust~~ Roof Monitor EAST END OF Building

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
60'	Start 10' End ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
Start 600' End 600'	Start North End North

DESCRIBE EMISSIONS
Start Lofting End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start White End ✓	Attached ☐ N/A Detached ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start 5' to 10' Above Monitor End

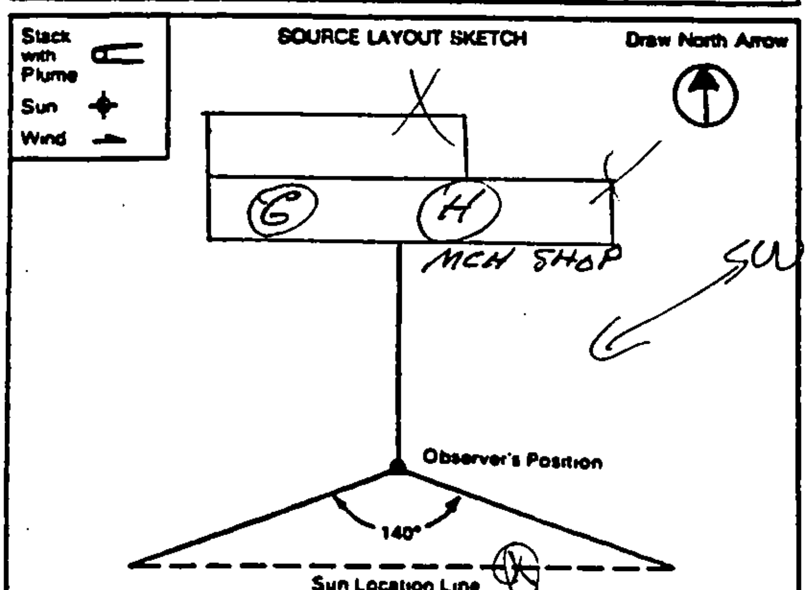
DESCRIBE PLUME BACKGROUND
Start BAGHOUSE/TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Brown Green End ✓	Start Scattered End ✓

WIND SPEED	WIND DIRECTION
Start 8-10 End ✓	FROM Start SW End ✓

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 75 End ✓	NA	NA

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION
1st Helper – Jim Hall Ward, 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	0	15	25	25	TAP B
18	20	20	25	25	end TAP
19	25	30	30	25	avg 155/24 = 6.46%
20	25	15	15	5	
21	5	0	0	0	
22	0	0	0	0	~~Charge~~ B
23	0	0	0	0	
24	0	0	0	0	avg 121/24 = 5.04%
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	DATE
George Hensley	5/12/00

ORGANIZATION
Environmental Quality Management

CERTIFIED BY	DATE
ETA	3/29/00

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~~ 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 BAG HOUSE / TREES End ✓
BACKGROUND COLOR	Start Brown Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	Start FROM SW End ✓
AMBIENT TEMP	Start 80 End 84
WET BULB TEMP	NA
RH, percent	NA

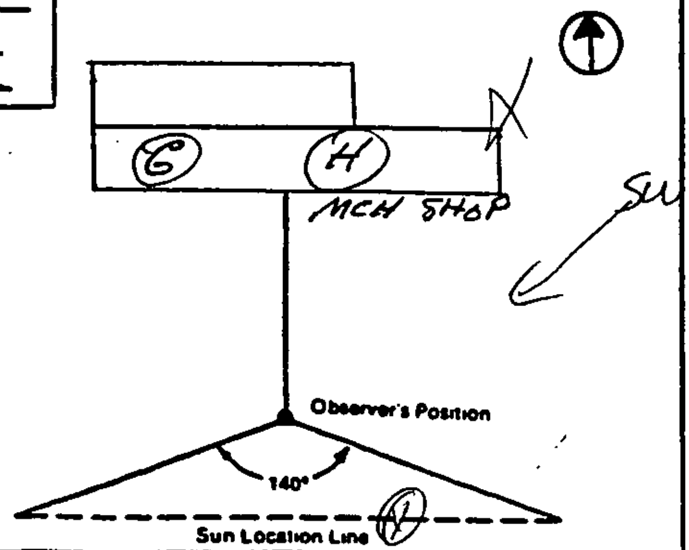
OBSERVATION DATE	START TIME	END TIME
5/12/00	0715	1121

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	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	0	0	0	Charge B
18	0	0	0	0	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

SOURCE LAYOUT SKETCH

Stack with Plume / Sun / Wind

Draw North Arrow



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

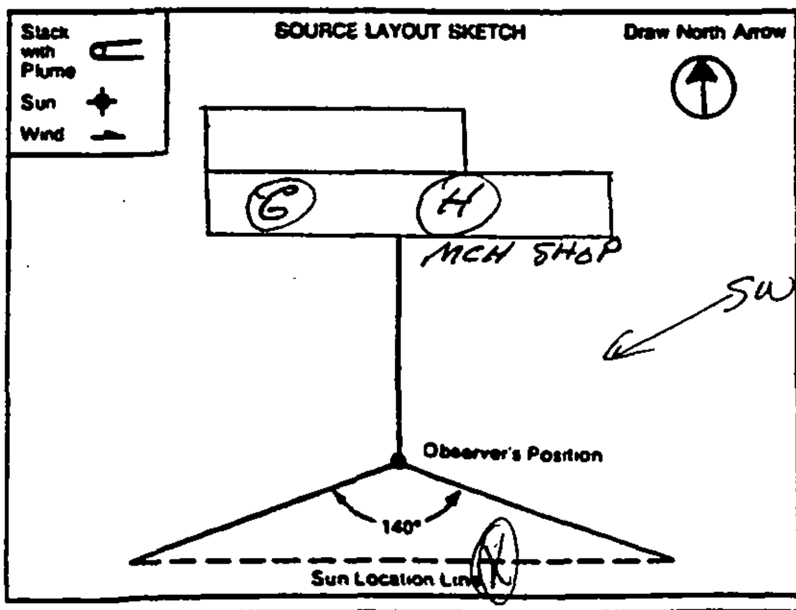
Melter - Bruce Moore

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~~ 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 None End ✓
EMISSION COLOR	Start None 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 10-12 mph End ✓
WIND DIRECTION	FROM Start SW End ✓
AMBIENT TEMP	Start 84 End ✓
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					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	

VISIBLE EMISSION OBSERVATION FORM

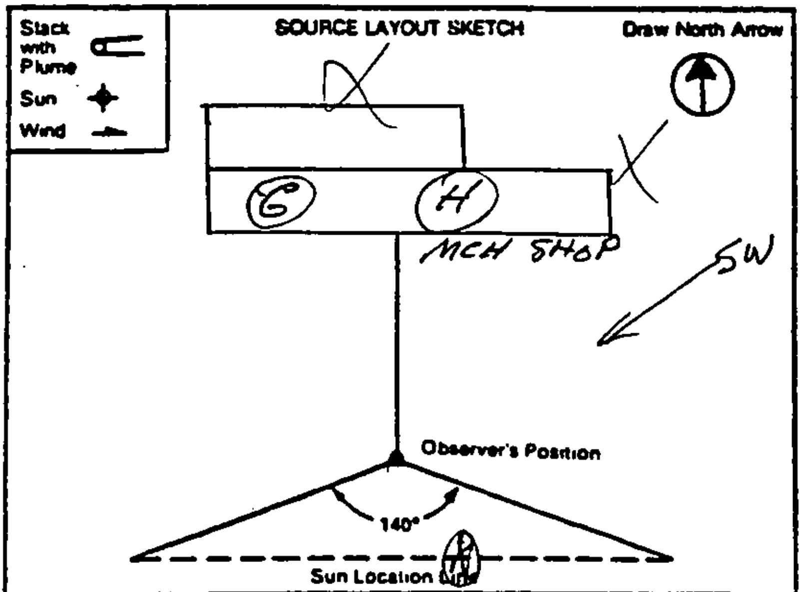
No. 1 OF 9

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 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 mainly lead 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 Broken End ✓
WIND SPEED	Start 8-10 mph End ✓
WIND DIRECTION	Start FROM SW End
AMBIENT TEMP	Start 85 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	5	15	15	15	Dusty red white
2	30	30	30	30	[illegible] tap on B
3	35	35	40	40	comes out something [illegible] on Top B
4	40	40	35	35	
5	30	30	30	25	655/24 = 27.29
6	25	15	15	15	avg and mainly lead
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	15	Charge A
17	5	5	5	5	end Charge
18	0	0	5	5	avg 70/24 = 2.92%
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

SOURCE LAYOUT SKETCH



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

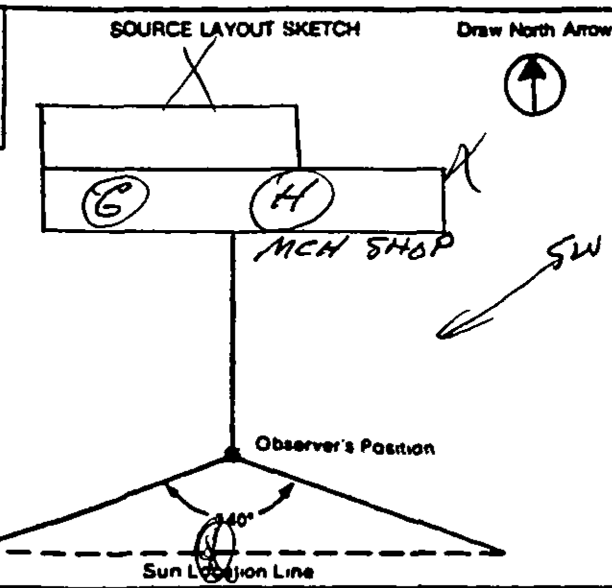
VISIBLE EMISSION OBSERVATION FORM

No. 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 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 monitor End			
DESCRIBE PLUME BACKGROUND: Start BAG HOUSE/TREES End ✓			
BACKGROUND COLOR: Start Brown Green End ✓	SKY CONDITIONS: Start Scattered End ✓		
WIND SPEED: Start 10-12 mph End ✓	WIND DIRECTION: Start FROM 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



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

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

MIN \ SEC	0	15	30	45	COMMENTS
1	25	25	25	30	
2	30	25	25	25	and 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	

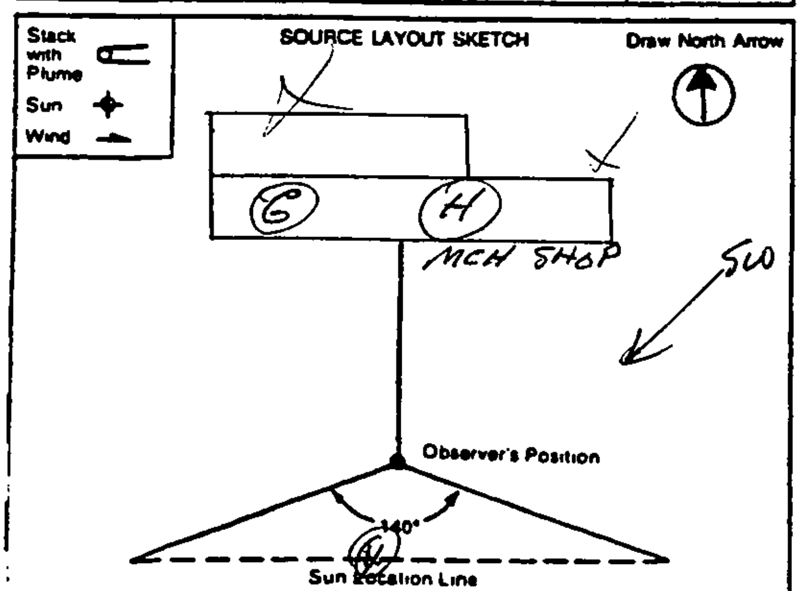
VISIBLE EMISSION OBSERVATION FORM

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 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 Monitor End
DESCRIBE PLUME BACKGROUND	Start BAG HOUSE/TREES End ✓
BACKGROUND COLOR	Start Green brown End —
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 End ✓
WIND DIRECTION	Start FROM SW End ✓
AMBIENT TEMP	Start 87 End
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow



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

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

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	tap A
9	15	15	10	5	
10	10	5	0	10	
11	5	5	0	0	
12	0	0	0	0	end tap 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	Slag 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	Charge B
28	20	15	15	10	
29	10	10	10	15	
30	15	15	15	5	avg 400/24=16.67%

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 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 Cofting 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 Scattered End ✓

WIND SPEED: Start 8-10 mph End ✓

WIND DIRECTION: Start FROM SW End ✓

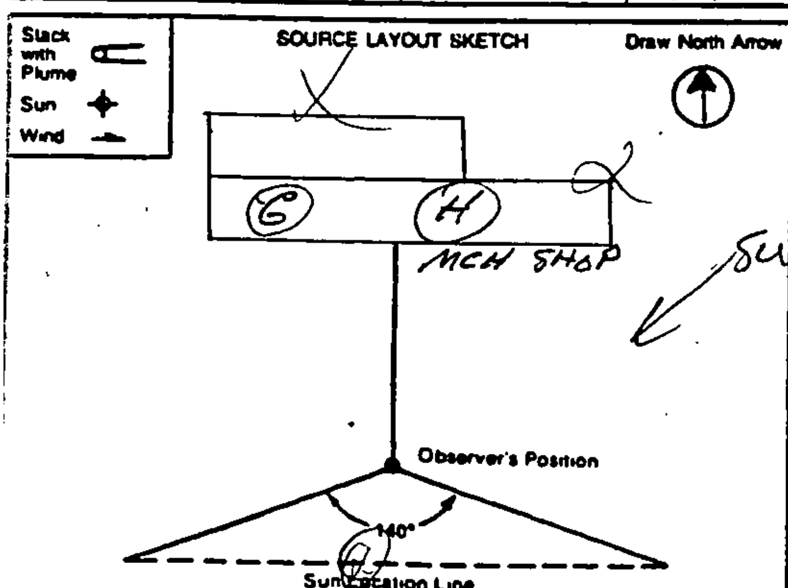
AMBIENT TEMP: Start 88 End ✓

WET BULB TEMP: NA

RH, percent: NA

SOURCE LAYOUT SKETCH

Draw North Arrow



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

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

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 Charge 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 A
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	Charge A
26	15	20	20	20	
27	20	25	25	20	end Charge 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

VISIBLE EMISSION OBSERVATION FORM

No. 5 OF 9

COMPANY NAME		
Kentucky Electric Steel, Inc.		
STREET ADDRESS		
U.S. 60 West - Coalton		
CITY	STATE	ZIP
Ashland	KY	41102
PHONE (KEY CONTACT)	SOURCE ID NUMBER	
(606) 929-1320 Plant Guard	103-0340-0020	

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT: ~~Baghouse Exhaust~~ Roof Monitor EAST END OF Building

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
60'	Start 60' End ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
Start 600' End 600'	Start North End North

DESCRIBE EMISSIONS: Start Lofting End ✓

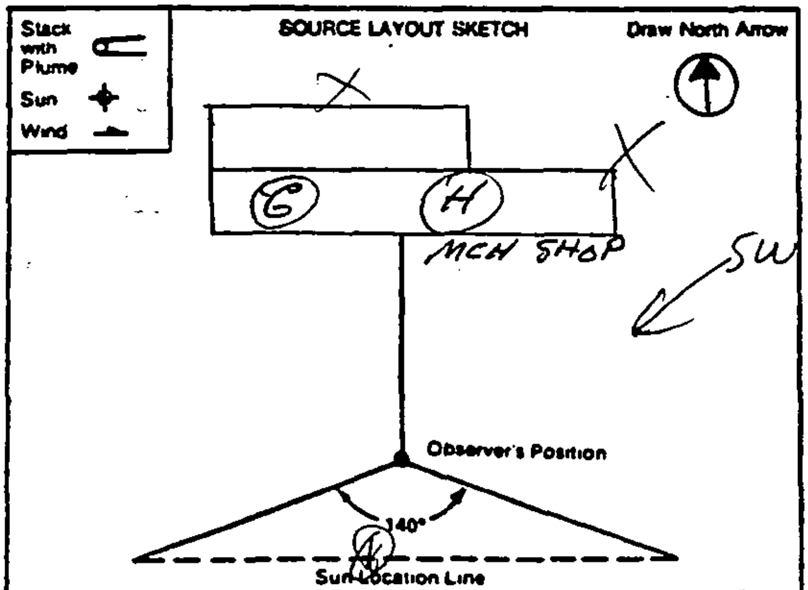
EMISSION COLOR	IF WATER DROPLET PLUME
Start White End ✓	Attached ☐ N/A Detached ☐

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	SKY CONDITIONS	
Start Brown Green End ✓	Start Scattered End ✓	
WIND SPEED	WIND DIRECTION	
Start 10-12 mph End ✓	Start FROM SW End ✓	
AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 88 End ✓	NA	NA

SOURCE LAYOUT SKETCH



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					
14					
15					
16					
17					
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19					
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26					
27					
28					
29					
30					

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

CONTINUED ON VEO FORM NUMBER

Privileged and Confidential - Prepared at the Request of Legal Council

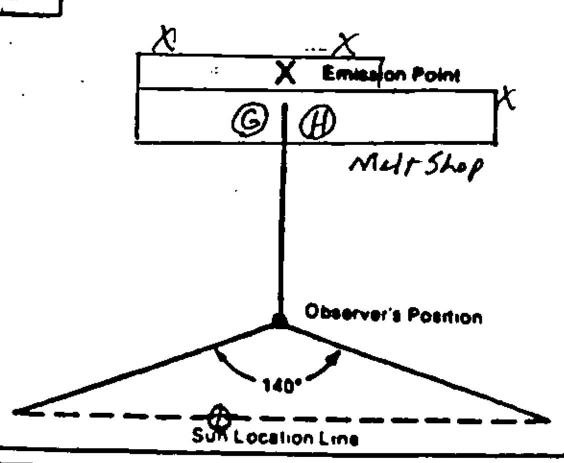
[illegible]SIBLE EMISSION OBSERVATION FOR[illegible]

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 Meltshop
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] + Lofty End
EMISSION COLOR	Start White / off white End ✓
IF WATER DROPLET PLUME	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out the 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

SOURCE LAYOUT SKETCH

Stack with Plume / Sun / Wind — Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	0	15	30	45	COMMENTS
1 (1420)	15	15	15	15	Meltshop
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	

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

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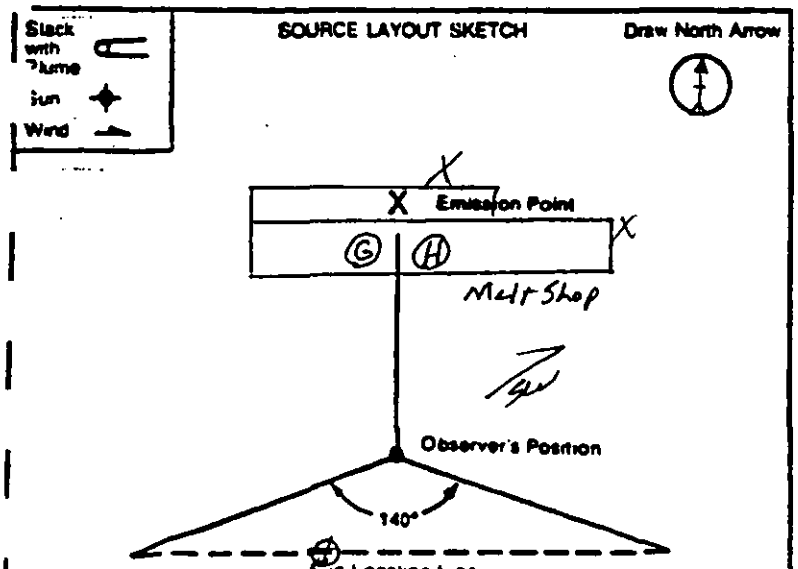
VISIBLE EMISSION OBSERVATION FORM

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 and 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 wt Lofty End ✓
EMISSION COLOR	Start White End ✓
IF WATER DROPLET PLUME	N/A Attached ☐ Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start 10' out + above mon. 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	1459	1520

MIN \ SEC	0	15	30	45	COMMENTS
1 (1459)	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	STATE	ZIP
Ashland	KY	41102
PHONE (KEY CONTACT) (606) 929-1320 Plant Guard	SOURCE ID NUMBER 103-0340-0020	

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	Charge/Melt/Tap
CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	On line

DESCRIBE EMISSION POINT: Middle, East + West end of Melt shop

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
60'	Start 10' End ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
Start 600' End ✓	Start North End North

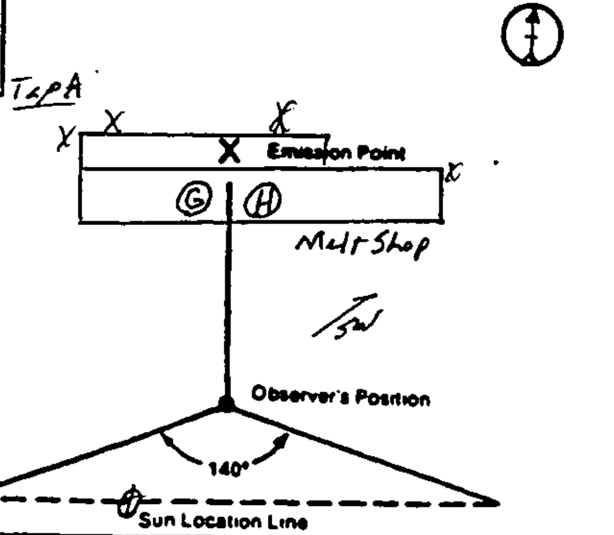
DESCRIBE EMISSIONS	
Start Lofting	End ✓
EMISSION COLOR	IF WATER DROPLET PLUME
Start White / Offwhite End ✓	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	
Start Same	End ✓

DESCRIBE PLUME BACKGROUND		
Start Same	End ✓	
BACKGROUND COLOR	SKY CONDITIONS	
Start Same End ✓	Start Scattered End ✓	
WIND SPEED	WIND DIRECTION	
Start 7-15 End ✓	Start SW End ✓	
AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 85-90 End ✓	N/A	N/A

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



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	DATE
Bryan Brumfield	5-12-00

ORGANIZATION: Environmental Quality Management

CERTIFIED BY	DATE
ETA	3-22-00

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SIBLE EMISSION OBSERVATION FOR. No. 9 of 9

COMPANY NAME
Kentucky Electric Steel, Inc.

STREET ADDRESS
U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	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 ✓

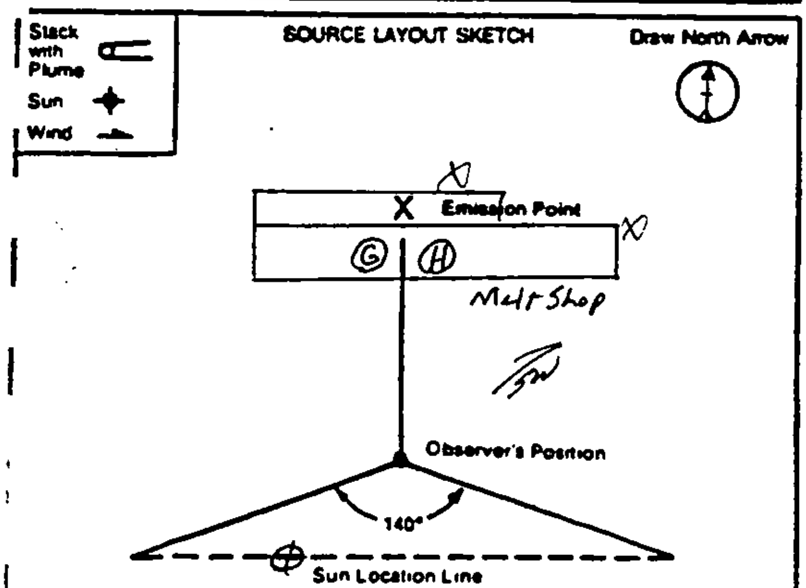
DESCRIBE PLUME BACKGROUND: Start Same End ✓

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



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 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' out + above monitor End ✓

DESCRIBE PLUME BACKGROUND: Start Baghouse + Trees End ✓

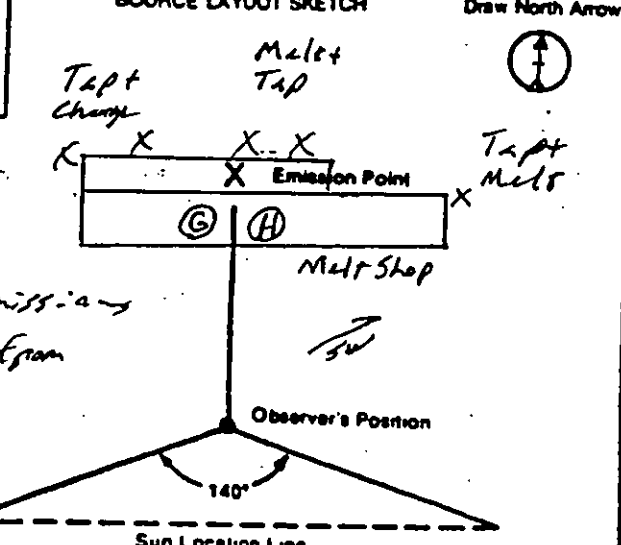
BACKGROUND COLOR: Start Brown/Green End ✓ | SKY CONDITIONS: Start Scattered End ✓

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

Stack with Plume ⊂═ | Sun ✦ | Wind →

SOURCE LAYOUT SKETCH | Draw North Arrow



Melt emissions mainly from middle

ADDITIONAL INFORMATION
1st Helper -
Melter -

OBSERVATION DATE: 5-12-00 | START TIME: ~~08 15 18~~ 1718 | END TIME: 1742

MIN \ SEC	0	15	30	45	COMMENTS
1 (1718)	10	10	10	15	Melt shop (800 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 (1722)	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

1

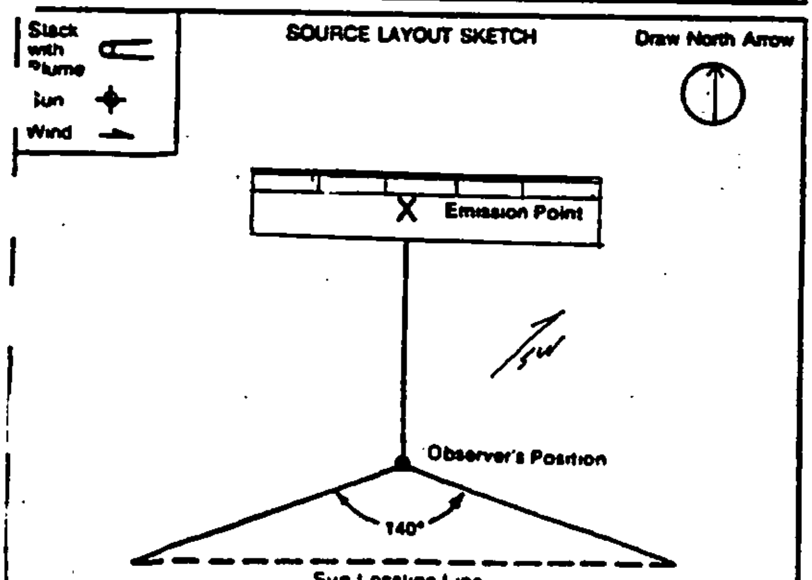
VISIBLE EMISSION OBSERVATION FORM

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 of above monitor End ✓
DESCRIBE PLUME BACKGROUND	Start Trees End ✓
BACKGROUND COLOR	Start Green End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 2-15 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 -

OBSERVATION DATE	5-12-90
START TIME	1718
END TIME	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	5-12-90
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00

VISIBLE EMISSION OBSERVATION FORM

No. 1 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 10' out of exhaust [illegible] End ✓

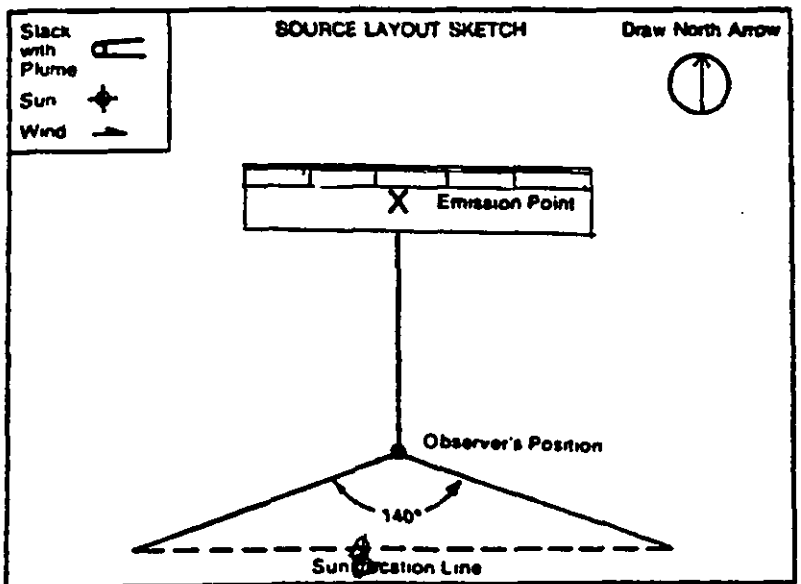
DESCRIBE PLUME BACKGROUND: Start Trees End ✓

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 — Draw North Arrow



ADDITIONAL INFORMATION: 1st Helper - Melter -

OBSERVATION DATE: 5-11-00 | **START TIME:** 1359 | **END TIME:** 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 ~~10~~	0 ~~10~~	0 ~~5~~	Should have been on
8	0 ~~5~~	0 ~~5~~	0 ~~0~~	0	Melt shop VE's
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 (1422)	0	0	0	0	
25 (1423)	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: [signature] | **DATE:** 5-11-00

ORGANIZATION: Environmental Quality Management

CERTIFIED BY: ETA | **DATE:** 3-22-00

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

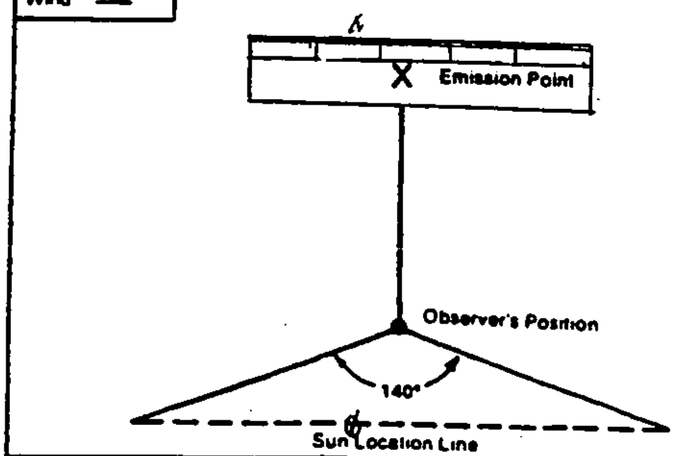
No. 3 of 10

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 Bx Loft[illegible] 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 South[illegible] 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



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	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	3-22-00

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

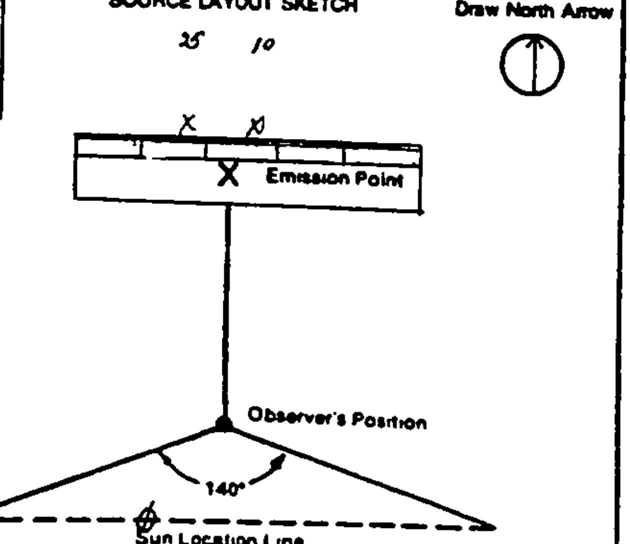
No. 3 of 10

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

Draw North Arrow

Stack with Plume
Sun
Wind



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	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	

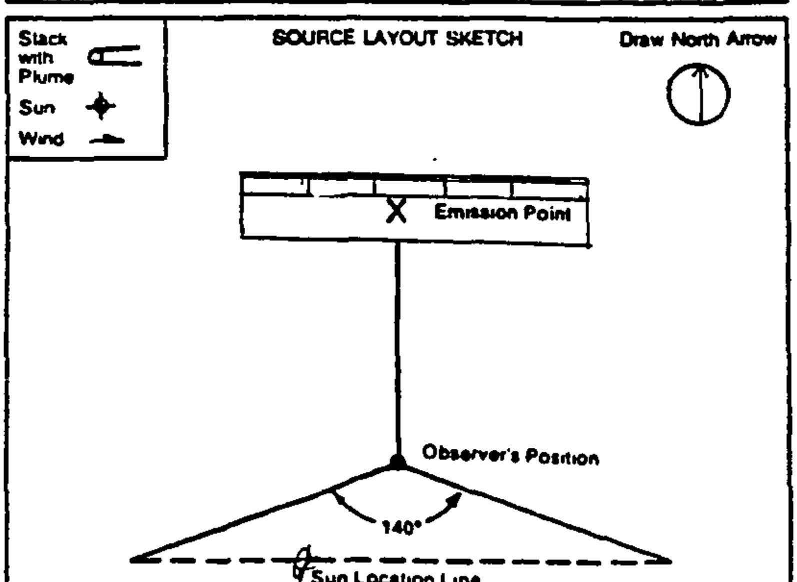
OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	4

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
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 Stack 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	Start 85° End ✓
WET BULB TEMP	N/A
RH, percent	N/A

SOURCE LAYOUT SKETCH — Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

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 (1558)	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	

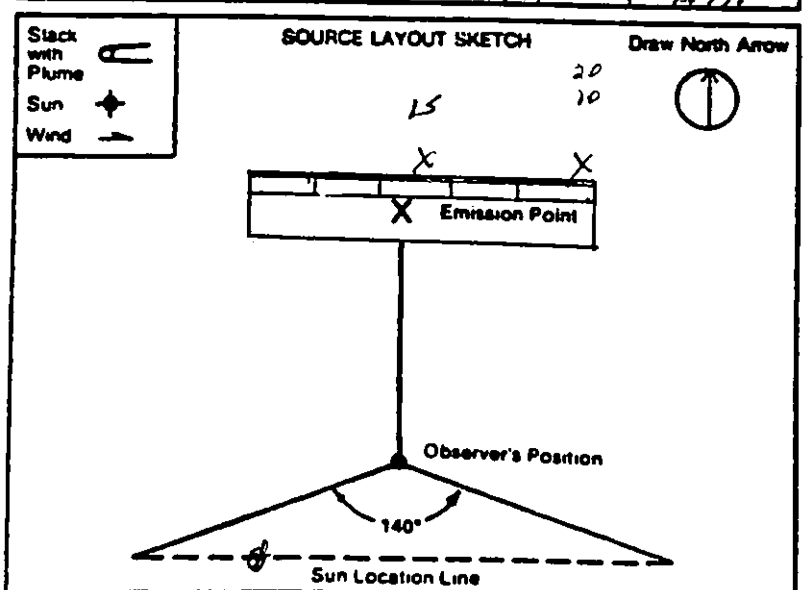
VISIBLE EMISSION OBSERVATION FORM

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 + Haze
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



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

MIN \ SEC	0	15	30	45	COMMENTS
1 (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	
25 (1623)	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 (1628)	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	3-22-00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION F M

No. 6 of 10

COMPANY NAME		
Kentucky Electric Steel, Inc.		
STREET ADDRESS		
U.S. 60 West - Coalton		
CITY	STATE	ZIP
Ashland	KY	41102
PHONE (KEY CONTACT) (606) 929-1320 Plant Guard	SOURCE ID NUMBER 103-0340-0020	

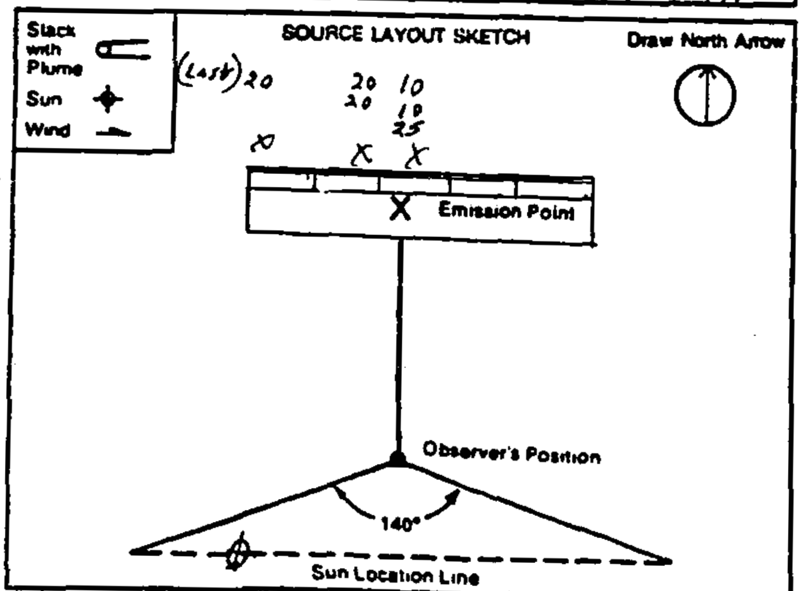
PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	On Line

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 L. From	End ✓
EMISSION COLOR Start Orange End ✓	IF WATER DROPLET PLUME Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start [illegible]	End ✓

DESCRIBE PLUME BACKGROUND		
Start Trees	End ✓	
BACKGROUND COLOR Start Green End ✓	SKY CONDITIONS Start Scattered Haze 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



ADDITIONAL INFORMATION

1st Helper -

M. 1. -

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

MIN \ SEC	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	DATE
Bryan Brumfield	5-11-00
ORGANIZATION	
Environmental Quality Management	
CERTIFIED BY	DATE
ETA	3-22-01

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FO[illegible]

No. 2 of 10

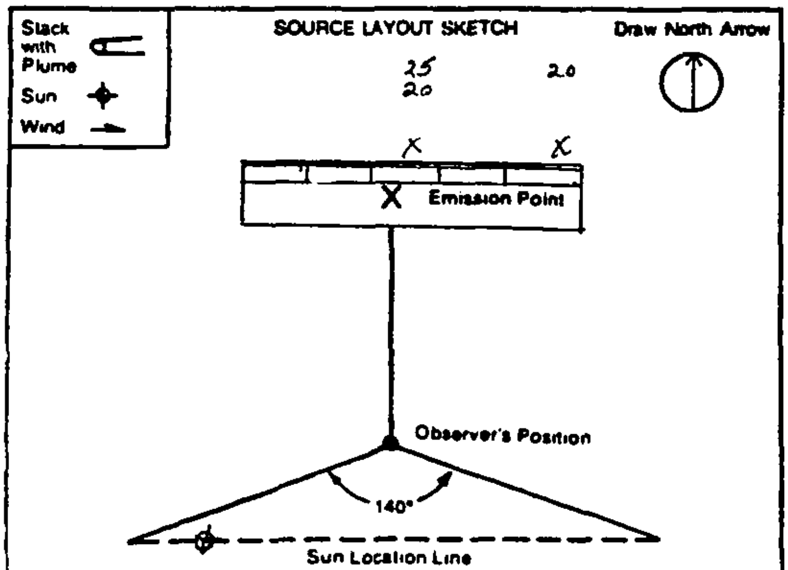
COMPANY NAME: Kentucky Electric Steel, Inc.		
STREET ADDRESS: U.S. 60 West - Coalton		
CITY: Ashland	STATE: KY	ZIP: 41102
PHONE (KEY CONTACT): (606) 929-1320 Plant Guard	SOURCE ID NUMBER: 103-0340-0020	

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



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

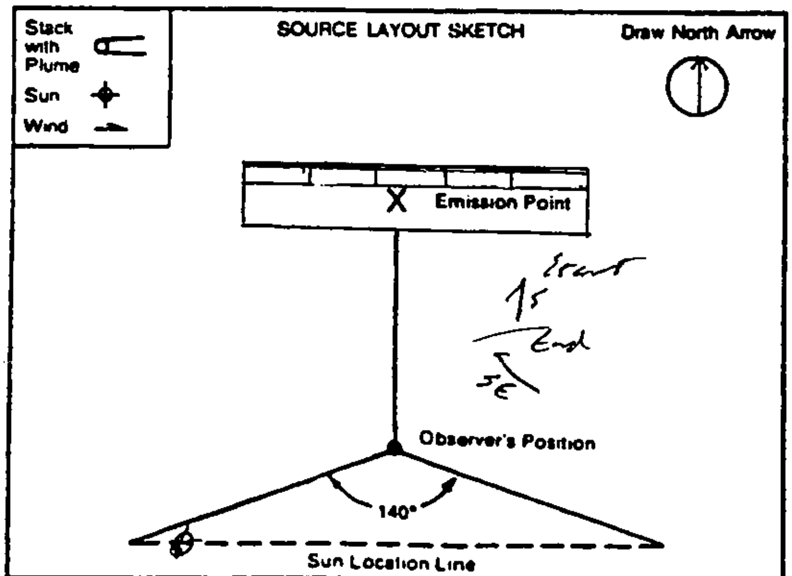
MIN \ SEC	0	15	30	45	COMMENTS
1 (1659)	0	0	0	0	Baghouse
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	Ø
6 (1704)	0	0	0	0	
7 (1705)	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	20	0	
11	0	0	0	0	20/24 = 0.83%
12 (1710)	0	0	0	0	
13 (1711)	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	25	0	
17	0	0	20	0	45/24 = 1.88%
18 (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
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 [illegible] 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



ADDITIONAL INFORMATION

1st Helper -

Melter -

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 (1758)	0	0	0	0	

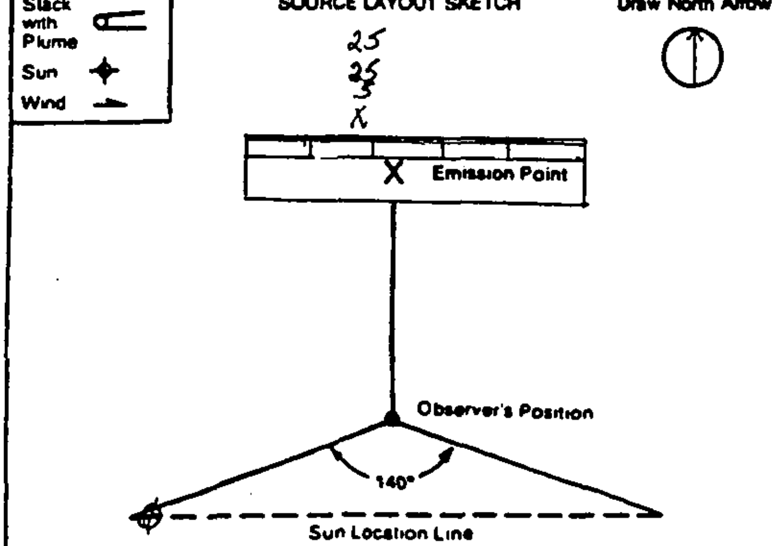
OBSERVER'S NAME (PRINT)	Bryan Brumfield
OBSERVER'S SIGNATURE	Bryan Brumfield
DATE	5-11-00
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-00
CONTINUED ON VEO FORM NUMBER	0 9

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 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 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



ADDITIONAL INFORMATION

1st Helper -

Melter - __

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

MIN \ SEC	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 1821	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	1 1

VISIBLE EMISSION OBSERVATION FORM

No. 10 of 10

COMPANY NAME		
Kentucky Electric Steel, Inc.		
STREET ADDRESS		
U.S. 60 West - Coalton		
CITY	STATE	ZIP
Ashland	KY	41102
PHONE (KEY CONTACT)	SOURCE ID NUMBER	
(606) 929-1320 Plant Guard	103-0340-0020	

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	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 ✓

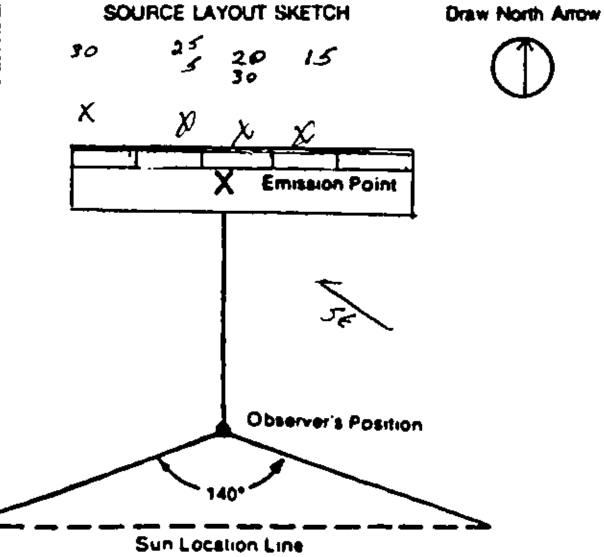
DESCRIBE EMISSIONS	
Start Lofting	End ✓
EMISSION COLOR: Start Orange End ✓	IF WATER DROPLET PLUME: Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: Start Same	End ✓

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

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

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

MIN \ SEC	0	15	30	45	COMMENTS
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	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	30	60/24=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	0	0	0	0	

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

VISIBLE EMISSION OBSERVATION FORM

No. 1 of 9

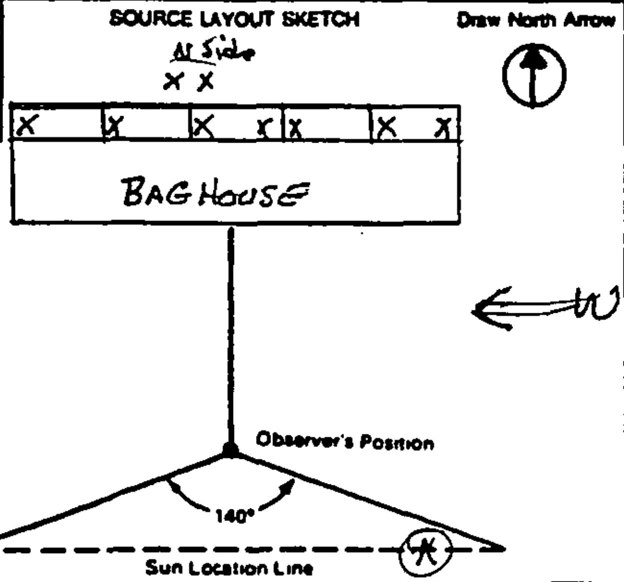
COMPANY NAME	Kentucky Electric Steel, Inc.
STREET ADDRESS	U.S. 60 West - Coalton
CITY	Ashland
STATE	KY
ZIP	41102
PHONE (KEY CONTACT)	(606) 929-1320 Plant Guard
SOURCE ID NUMBER	103-0340-0020
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	On Line
CONTROL EQUIPMENT	Harsell Baghouse
OPERATING MODE	On Line
DESCRIBE EMISSION POINT	Baghouse Exhaust
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	From Start W End ✓
AMBIENT TEMP	Start 70 End ✓
WET BULB TEMP	NA
RH, percent	NA

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	

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind



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

MELTER

VISIBLE EMISSION OBSERVATION FORM

No. 2 OF 9

COMPANY NAME
Kentucky Electric Steel, Inc.

STREET ADDRESS
U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT
Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS
Start LOFTING End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start Orange End ✓	Attached ☐ NA Detached ☐

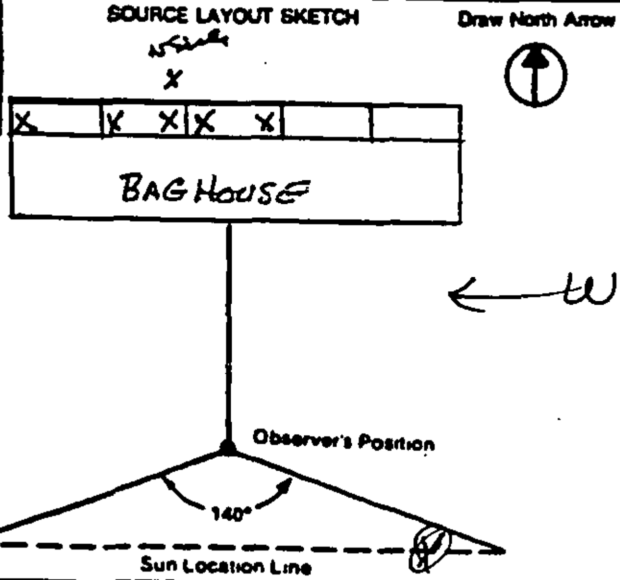
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start 5' to 10' Above Monitor End

DESCRIBE PLUME BACKGROUND
Start TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Green End ✓	Start Overcast End ✓
WIND SPEED	**WIND DIRECTION** FROM
Start 4-6 mph End ✓	Start W End
AMBIENT TEMP	**WET BULB TEMP** / **RH, percent**
Start 70 End ✓	NA / NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH Draw North Arrow



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

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	DATE
George Hensley	5/12/00

ORGANIZATION
Environmental Quality Management

CERTIFIED BY	DATE
ETA	3/29/00

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	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line

CONTROL EQUIPMENT	OPERATING MODE
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT
Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS
Start Lofting End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start Orange End ✓	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	SKY CONDITIONS
Start Green End ✓	Start overcast End ✓

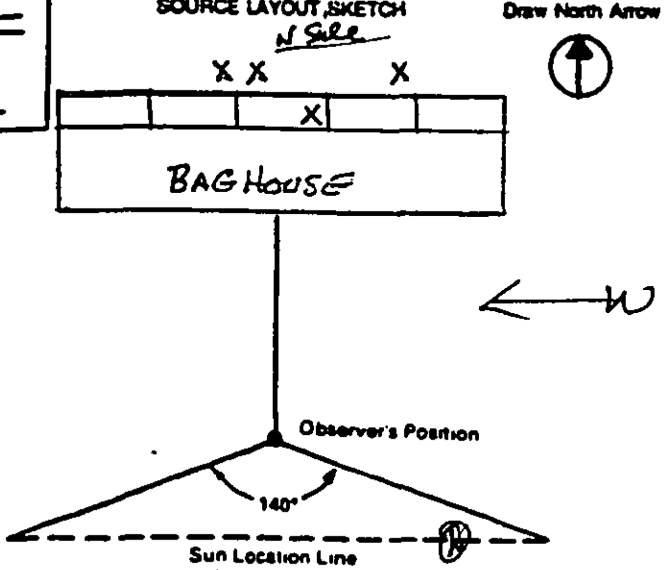
WIND SPEED	WIND DIRECTION
Start 4-6 End ✓	FROM Start W End ✓

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 70 End ✓	NA	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



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

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	DATE
George Hensley	5/12/00

ORGANIZATION
Environmental Quality Management

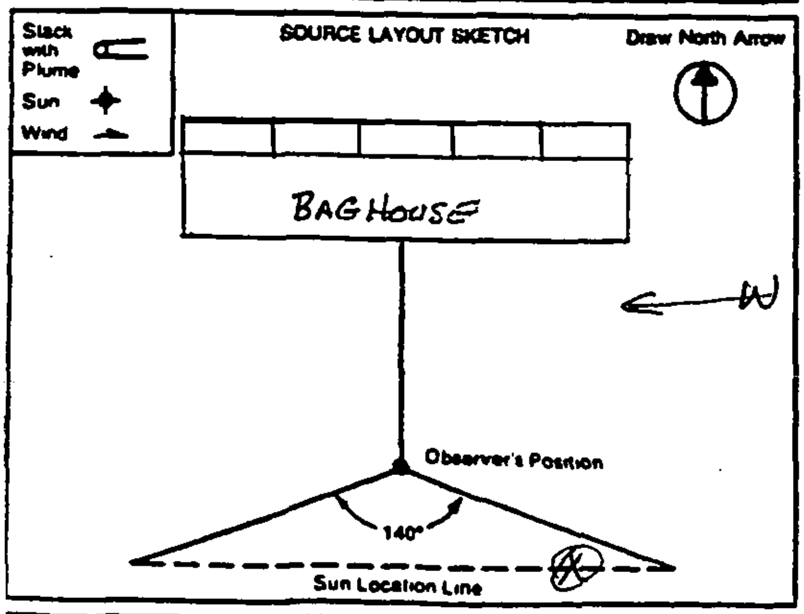
CERTIFIED BY	DATE
ETA	3/29/00

CONTINUED ON VEO FORM NUMBER

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	FROM Start W End ✓
AMBIENT TEMP	Start 72 End ✓
WET BULB TEMP	NA
RH, percent	NA



ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hill
MELTER Bruno Thomas

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

VISIBLE EMISSION OBSERVATION FORM

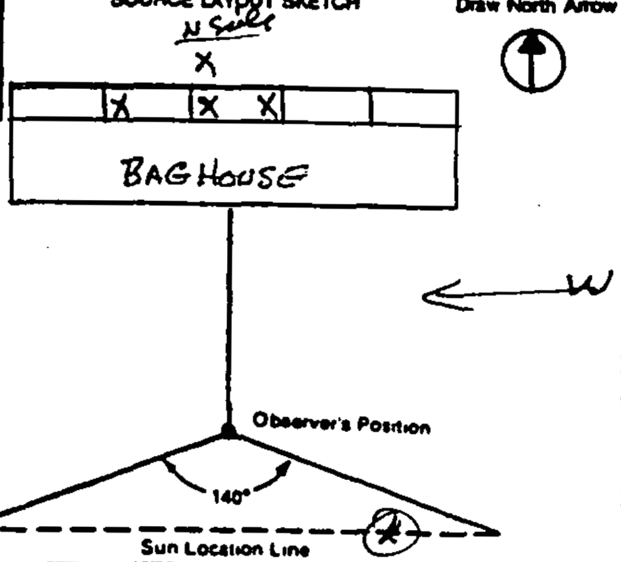
No. 5 OF 9

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 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 6-8 mpH End ✓
WIND DIRECTION	FROM Start W End ✓
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

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	5	0	0	0	#3L
9	0	0	0	0	
10	0	10	0	0	4R
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	#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	10	0	0	0	#3R

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

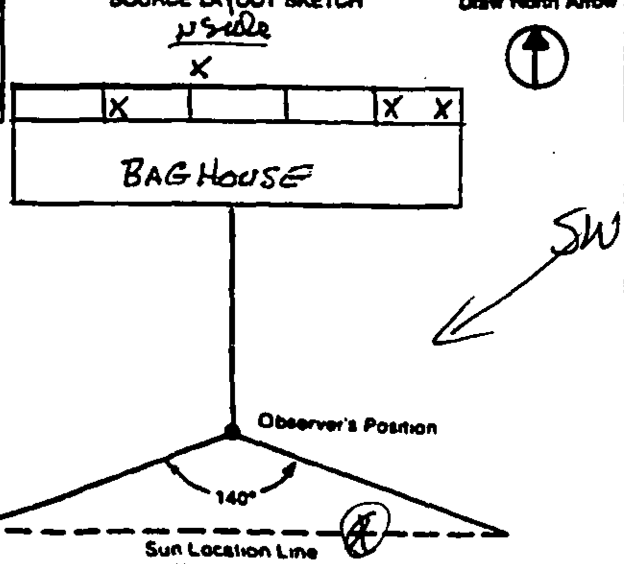
No. 6 OF 9

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 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 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



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	
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

VISIBLE EMISSION OBSERVATION FORM

No. 1 OF 9

COMPANY NAME
Kentucky Electric Steel, Inc.

STREET ADDRESS
U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT
Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS
Start LofTing End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start Orange End ✓	Attached ☐ NA Detached ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start 5' to 10' Above Monitor End

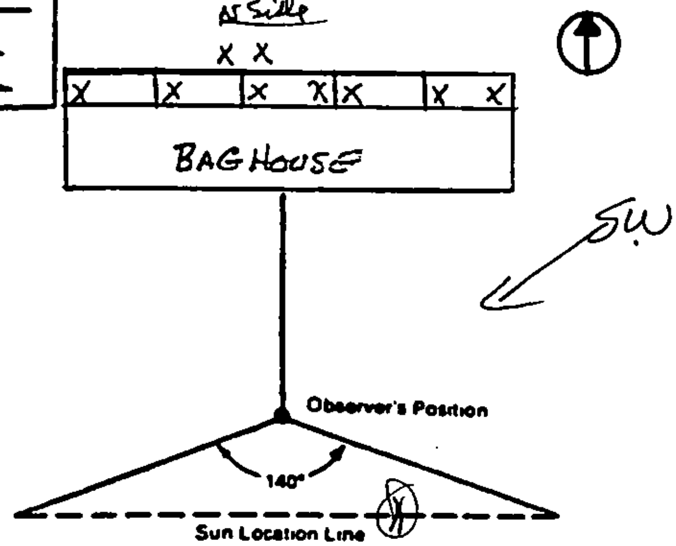
DESCRIBE PLUME BACKGROUND
Start TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS	
Start Green End ✓	Start Scattered End ✓	
WIND SPEED	**WIND DIRECTION** FROM	
Start 8-10 mpH End ✓	Start SW End ✓	
AMBIENT TEMP	**WET BULB TEMP**	**RH, percent**
Start 25 End ✓	NA	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH At Side

Draw North Arrow



ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hall
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	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	DATE
George Hensley	5/12/00

ORGANIZATION
Environmental Quality Management

CERTIFIED BY	DATE
ETA	3/29/00

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	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT: Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS: Start Lofting End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start Orange End ✓	Attached ☐ NA Detached ☐

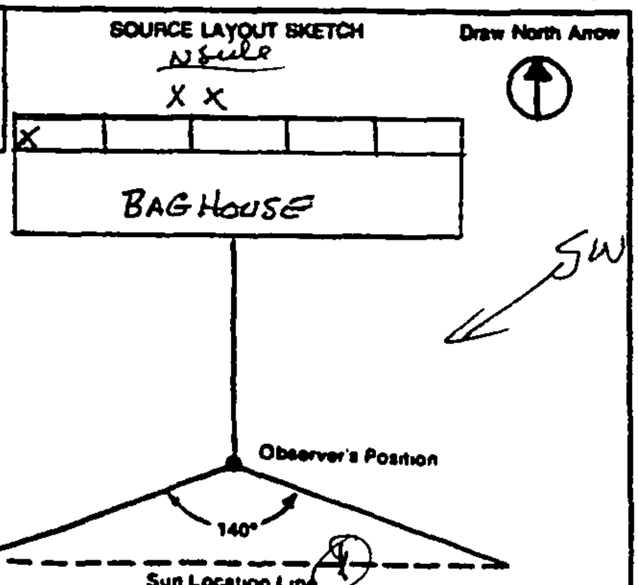
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: Start 5' to 10' Above Monitor End

DESCRIBE PLUME BACKGROUND: Start TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Green End ✓	Start Scattered End ✓
WIND SPEED	**WIND DIRECTION** FROM
Start 10-12mph End ✓	Start SW End ✓

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 80 End 84	NA	NA

Stack with Plume ⊂ Sun ✦ Wind ←



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	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	DATE
George Hensley	5/12/00

ORGANIZATION: Environmental Quality Management

CERTIFIED BY	DATE
ETA	3/29/00

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No. 9 of 9

COMPANY NAME: Kentucky Electric Steel, Inc.

STREET ADDRESS: U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT: Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS: Start None End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start None End ✓	Attached ☐ NA Detached ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: Start 5' to 10' Above Monitor End

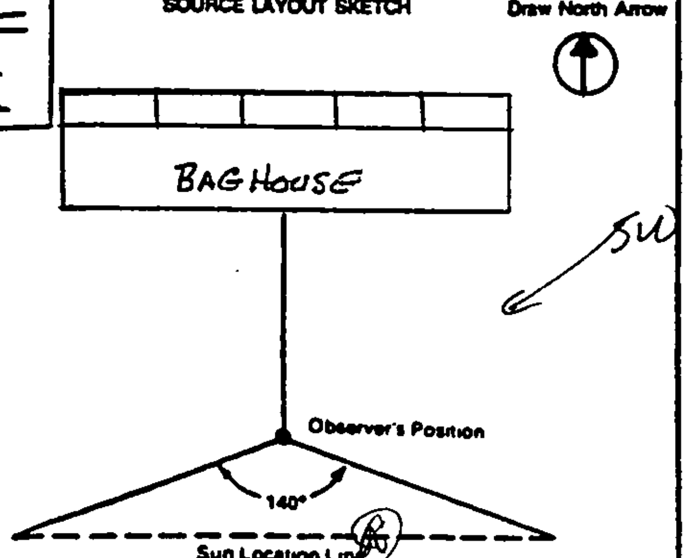
DESCRIBE PLUME BACKGROUND: Start TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Green End ✓	Start Scattered End ✓
WIND SPEED	**WIND DIRECTION**
Start 10-12 mph End ✓	FROM Start SW End ✓

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 84 End	NA	NA

SOURCE LAYOUT SKETCH — Draw North Arrow

Stack with Plume; Sun; Wind



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					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

VISIBLE EMISSION OBSERVATION FOR

No. 1 OF 1

COMPANY NAME
Kentucky Electric Steel, Inc.

STREET ADDRESS
U.S. 60 West - Coalton

CITY	STATE	ZIP
Ashland	KY	41102

PHONE (KEY CONTACT)	SOURCE ID NUMBER
(606) 929-1320 Plant Guard	103-0340-0020

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

DESCRIBE EMISSION POINT
Baghouse Exhaust

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
75'	Start 25' End 25'
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End 700'	Start North End North

DESCRIBE EMISSIONS
Start LOFTING End ✓

EMISSION COLOR	IF WATER DROPLET PLUME
Start Clear End ✓	Attached ☐ NA Detached ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start 5' to 10' Above Monitor End

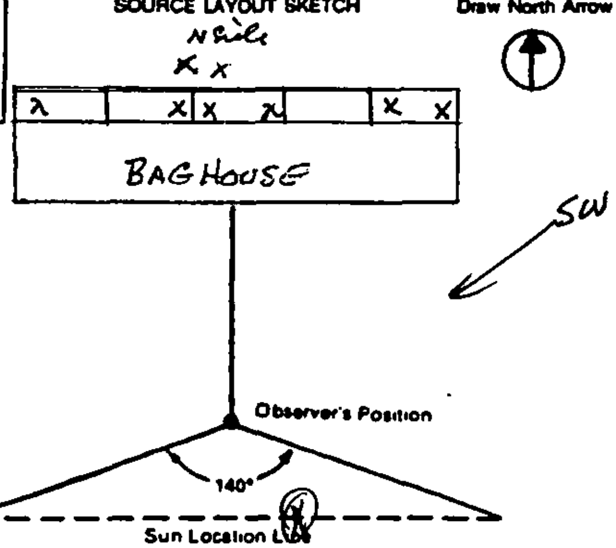
DESCRIBE PLUME BACKGROUND
Start TREES End ✓

BACKGROUND COLOR	SKY CONDITIONS
Start Green End ✓	Start Scattered End ✓
WIND SPEED	**WIND DIRECTION**
Start 8-10 mph End ✓	FROM Start SW End ✓

AMBIENT TEMP	WET BULB TEMP	RH, percent
Start 85 End ✓	NA	NA

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH Draw North Arrow



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

OBSERVATION DATE	START TIME	END TIME
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	DATE
George Hensley	5/12/00

ORGANIZATION
Environmental Quality Management

CERTIFIED BY	DATE
ETA	3/29/00

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FC 1

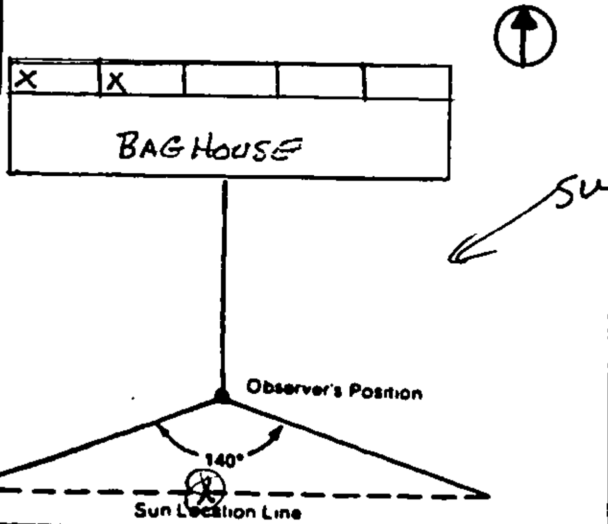
No. 2 OF 1

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 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 Grey End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	Start 10-12 mph End ✓
WIND DIRECTION	FROM Start SW End ✓
AMBIENT TEMP	Start 85 End ✓
WET BULB TEMP	NA
RH, percent	NA

SOURCE LAYOUT SKETCH

Draw North Arrow

Stack with Plume / Sun / Wind



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	

ADDITIONAL INFORMATION

1st HELPER Jim Hall Woody Hill

MELTER Bruce Moore

VISIBLE EMISSION OBSERVATION FO

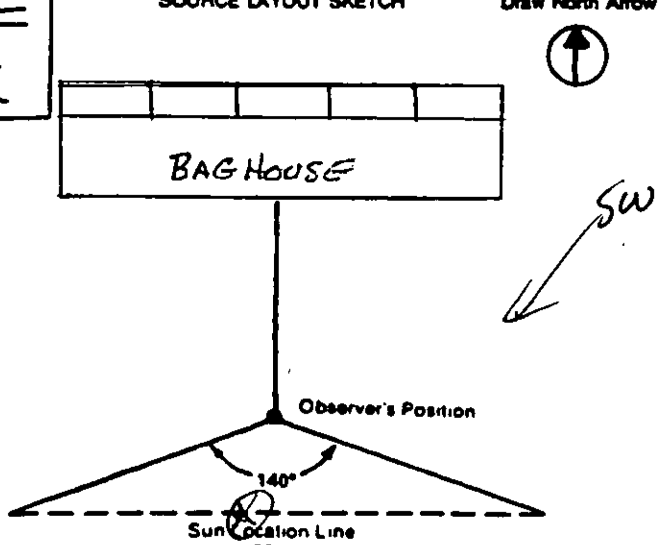
No. 3 OF 1

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 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	FROM 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



ADDITIONAL INFORMATION
1st HELPER Jim Hall Woody Hill
MELTER Bill Moore

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%

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

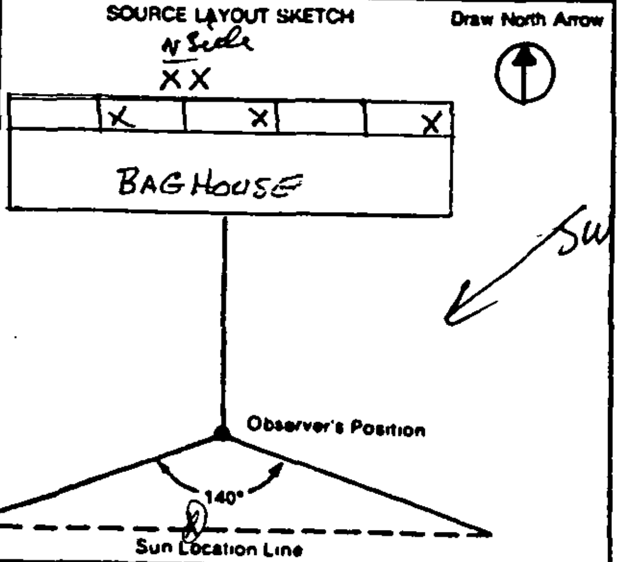
No. 4 OF 1

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	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	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	5/12/00
START TIME	1218
END TIME	

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	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

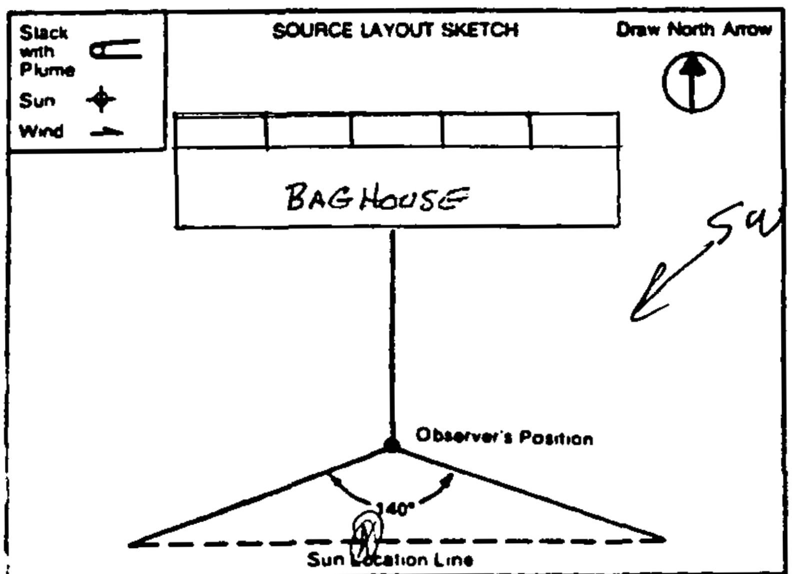
1st HELPER Jim Hall Woody Hill

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: FROM Start SW End		
AMBIENT TEMP: Start 88 End ✓	WET BULB TEMP: NA	RH, percent: NA	



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

OBSERVATION DATE: 5/12/00 | START TIME: | END TIME:

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

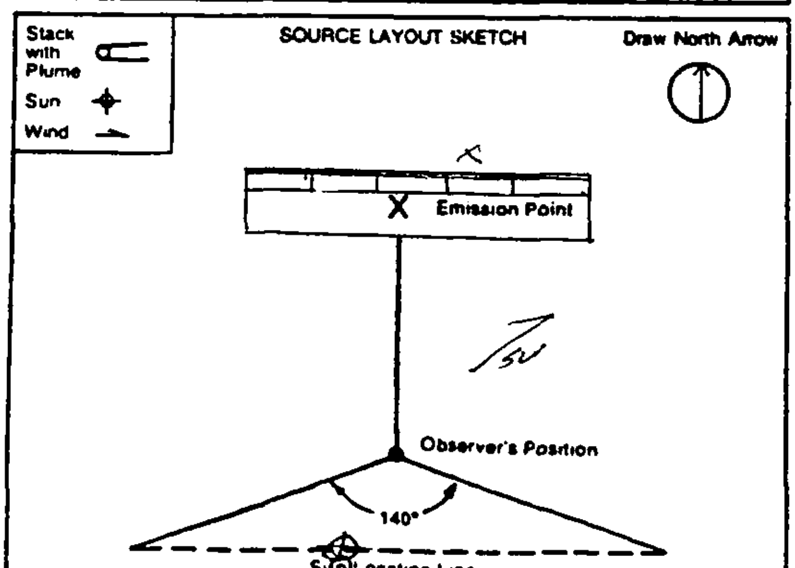
CONTINUED ON VEO FORM NUMBER

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 Lofrry 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

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION

1st Helper -

Melter -

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

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	**STATE**	**ZIP**
Ashland	KY	41102
PHONE (KEY CONTACT)	**SOURCE ID NUMBER**	
(606) 929-1320 Plant Guard	103-0340-0020	

PROCESS EQUIPMENT	OPERATING MODE
Melt Shop	On Line
CONTROL EQUIPMENT	**OPERATING MODE**
Harsell Baghouse	On Line

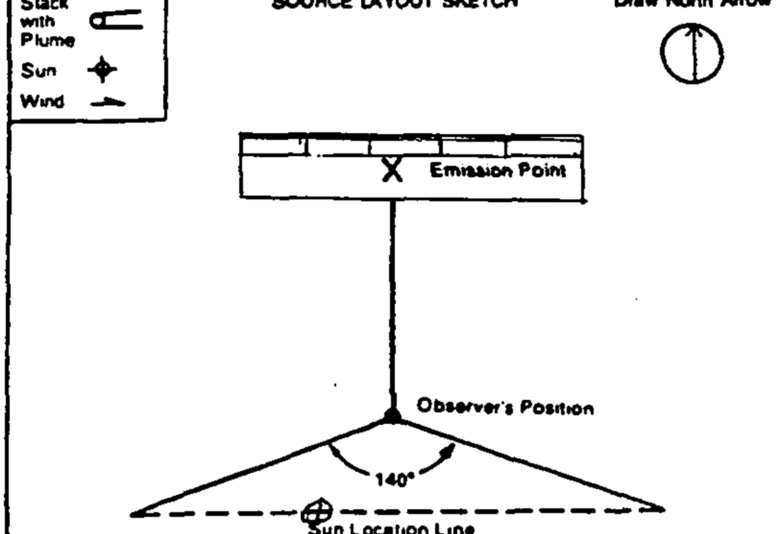
DESCRIBE EMISSION POINT	
Baghouse Exhaust	
HEIGHT ABOVE GROUND LEVEL	**HEIGHT RELATIVE TO OBSERVER**
75'	Start 25' End ✓
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
Start 700' End ✓	Start North End ✓

DESCRIBE EMISSIONS	
Start None	End ✓
EMISSION COLOR	**IF WATER DROPLET PLUME**
Start N/A End ✓	Attached ☐ N/A Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	
Start Same	End ✓

DESCRIBE PLUME BACKGROUND		
Start Same	End ✓	
BACKGROUND COLOR	**SKY CONDITIONS**	
Start Same End ✓	Start Scattered End ✓	
WIND SPEED	**WIND DIRECTION**	
Start 7-15 End ✓	Start SW End ✓	
AMBIENT TEMP	**WET BULB TEMP**	**RH, percent**
Start 85-90 End ✓	N/A	N/A

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
1 (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	**DATE**
[signature]	5-12-00
ORGANIZATION	
Environmental Quality Management	
CERTIFIED BY	**DATE**
ETA	3-22-00
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

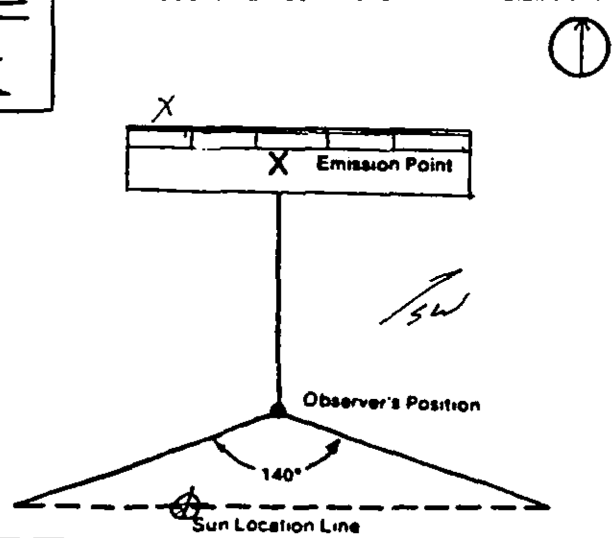
No. 8 of 9

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 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 Sky End ✓
BACKGROUND COLOR	Start Same End ✓
SKY CONDITIONS	Start Scattered End ✓
WIND SPEED	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

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-12-90	1520	1550

MIN \ SEC	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 (1525)	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	[signature]
DATE	5-12-90
ORGANIZATION	Environmental Quality Management
CERTIFIED BY	ETA
DATE	3-22-90
CONTINUED ON VEO FORM NUMBER	

VISIBLE EMISSION OBSERVATION FORM

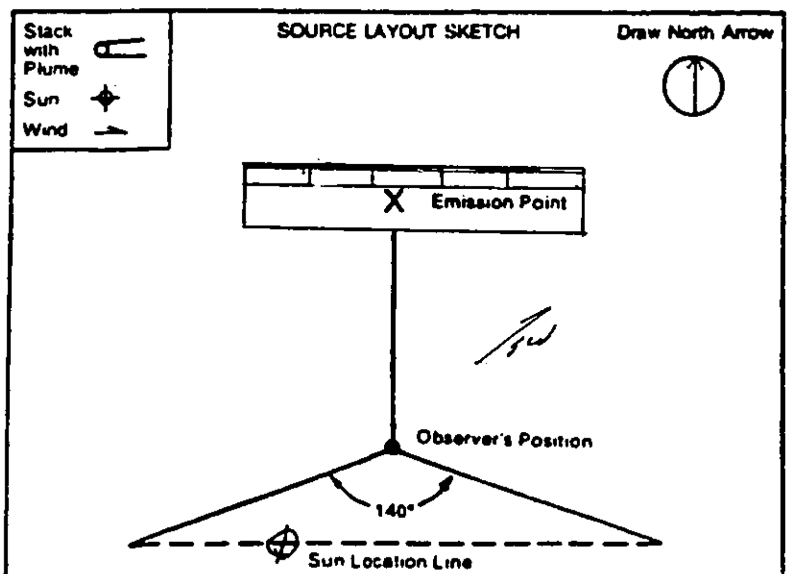
No. 9 of 9

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	



ADDITIONAL INFORMATION

1st Helper -

Melter -

OBSERVATION DATE	START TIME	END TIME
5-12-00	1550	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 1556	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	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

Appendix B

Production/Process Field Data

G-Large-VE.

#2

343

KENTUCKY ELECTRIC STEEL
BAGHOUSE TEST PROCESS MONITORING FORM

Date 5/12/06 START - 07:15

Time	Baghouse Fan Amperage A	Baghouse Fan Amperage B	Baghouse Fan Amperage 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 A Tap 7:31 - 7:35
8:05	176	186	103	107	5.5		A Charge 7:37 - 7:56
8:20	176	184	100	101	5.5	W1364	B Charge 7:45 - 7:47
8:35	179	188	101	112	5.3		A Charge 8:31 - 8:33
8:50	175	184	109	110	5.3	X-1279	B Tap 8:47 - 8:50 B Charge 8:51 - 9:01
9:10	174	181	81	104	5.5		A Charge 8:54 - 8:55
9:25	171	179	77	78	5.6		B Charge 9:43 - 9:45
9:45	173	174	89	111	5.7		A Tap 9:57 - 10:02 a
10:05	171	179	101	110	5.7		A Charge 10:05 - 10:13
10:20	169	173	94	110	5.7	W1365	B Tap 10:32 - 10:36
10:40	177	185	117	110	5.6	X-1280	B Charge 10:38 - 11:04
11:00	172	186	95	111	5.0		A Charge 10:54 - 10:56
11:20	173	181	87	115	5.4		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 5/12/00 Test #3 START ~~12:15~~ 12:19

Time	Baghouse Fan Amperage A	Baghouse Fan Amperage B	Baghouse Fan Amperage 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 W-1366
12:35	175	184	97	103	5.7		A Charge 12:31 - 12:33
12:52	169	177	105	109	5.5		B Tap 12:46 - 12:51
1:18	176	182	104	108	5.5	X-1281	Charging B 12:52 - 12:55
1:25	179	186	103	110	5.7		Tapping A 1:27 - 1:32
1:45	173	181	121	107	5.7		Charging A 1:33 - 2:15
2:00	173	179	102	109	5.8		1:41 slip on B, clouds of dust
2:15	173	182	97	108	5.8	~~W-16~~ 20H	Charging B 1:46 - 1:53
2:30	166	176	111	107	5.8	W-1367	Tapping B 2:39 - 2:43
2:50	172	181	107	106	5.4	X-1282	Charging B 2:45 - 3:01
3:10	176	184	102	106	5.4		Charging A 2:47 - 2:49
3:25	172	182	86	108	5.5		
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~~ 20H 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				$\boxed{\text{38.8 tons/hr}}$	
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				$\boxed{\text{48.0 tons/hr}}$	

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	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	~~Do~~ Melting Both
2:10	174	177	102	126	5.6	Fresh air damper 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 Heat X1270
2:57	174	182	100	116	5.6	During Charging	
3:13	179	187	100	117	5.0	Damper on	Tap A 3:15-3:19
3:29	174	183	122	111	5.2	furnace charging	Charg A 3:21-3:40 Heat W1356
3:44	177	181	112	117	5.3	closed.	Charge B 3:29-3:35
4:00	169	180	110	113	5.5	others-open	Adjusting Oxyfuel burner (a)
4:15	179	188	102	115	5.8		~4:00 pm (High VE's)
4:30	181	190	104	117	6.1		
4:45	175	184	101	112	5.9		Charging A 4:22-4:24
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
6:50	172	180	94	115	5.1		w/heat from LMF
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	CARROLL

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	920	17.5	5		120.0	0:22	59.8	43.7	8	3	55.0			19.0	KW 32970 13603 35201
2	X-1274	930	19.2	2		123.5	0:57	36.0	54.3	10	3	41.0		[illegible]	13.8	KW 19910 13427 40265
3	W-1360	110	12.8	5		120.3	2:00	54.5	53.0	2	3	55.2			16.3	KW 21480 15035 36370
4	X-1275	110	34.5	2		128.5	3:05	56.0	34.0	7	3	51.1		[illegible]	19.0	KW 221[illegible] 10[illegible]7 31593
5	W-1361	110	4.5	15		123.0	4:02	56.8	41.9	8	3	54.1		[illegible]	11.5	KW 21560 13152 34620
6	X-1276	110	19.0	2		116.3	5:06	52.5	44.8	10	4	46.7		[illegible]	25.5	KW 23830 15532 40047
7	W-1362	110	11.8	5		108.9	5:51	52.0	44.0	2	4	50.0			22.5	KW 30670 12302 35295
8	X-1277	110		2						7	4	43.2				KW 19820 13271 47462
9																
10																
11																

MELTER'S LOG

DATE	5 12 00
SHIFT	7-3
SUPERVISOR	H.W. Salyers

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	
															23.8	KW 20700 G 13819 D 34991
1	W-136[illegible]	110	18	2		101.0	07:34	53.3	36.2	#8	3	49.3	T/A		18.3	K 24830 G 16550 D 51670
2	X-12[illegible]	110	19	2		131.5	8:46	18.0	46.8	#10	3	49.9			27.0	K 22620 G 19724 D 61077
3	W-1364	110	21	4	2	147.3	9:59	59.8	65.5	#7	3/4	52.2			19.5	K 19630 G 13145 D 34562
4	X-1279	110	6	2		105.0	10:31	30.7	42.5	#2	4	50.6			0.5	K 21820 G 17203 D 51543
5	W-1365	110	12			102.8	11:41	57.8	34.9	#8	4	52.1		GUN B-4 HEAT SET #2 ELECT	18.8	K 23680 G D
6	X-1280	110	29	2	-	135.5	12:47	13.8	41.2	#10	4	51.9			23.3	K 20910 G D
7	W-1366	110	13	2	-	104.8	13:28	54.0	37.5	#7	4/3	55.6		Set 1-3 elect		K 21460 G D
8	X-1281	110	7	9	2	113	14:40	12.5	42.3	#2	-0-	-		NO CAST		
9	W-1367	110														
10	X-1282	110														
11																

Document No MS-015 Revision Date: 02-15-99 Revision Level: D 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 CASTER DELAYS
1	W-1367	110	45.5	2	-	140.5	15:46	58.5	82.0	8 452	4	46.7	T/A		K 21,900 PO 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 PO 19.8
3	W-1368	110 1018SQ	39.5	Return Heat		93.0	17:18	14.8	68.5	2 451	4	50.2		Return X-1281, came through plates.	K 5,010 PO 1.3
4	X-1283	"	9.5	2	-	140.8	19:00	63.0	77.8	8 459	4	61.1		1st heat straight to caster.	K 22,400 PO 1.5
5	W-1369	"	9.0	2	2	157.0	19:55	63.8	93.2	10 461	No cast	?		slide gate won't shut off hole over fce.	K 22,740 PO 10.0
6	X-1284	"		2	-										K PO
7	W-1370														K PO
8															
9															
10															
11															

Document No. MS-015 Revision Date: 02-15-99 Revision Level: D

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

MELTER'S LOG

DATE	5-11-00
SHIFT	11-7
SUPERVISOR	

Additional Comments: 2 [illegible] 23:10 - 23:25 Adj Burbs
Bttm 10" low W-Furn

	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 Furnace	PD 13.5	KW 22360 G 14473 O 48862
2	W-1350	921		2		144.0	0:51	57.8	73.5	#10	3	48.6		Set #1 Fix 2 Electrode #4 Carbon Bttm 10" LOW	 14.8	KW 22310 G 11899 O 49678
3	X-1265	921	8	2		117.8	1:17	56.5	41.9	#8	3	47.4			 20.5	KW 21170 G 13770 O 40859
4	W-1351	120	10	2		92.3	2:23	57.5	37.3	#6	3	51.7			 4.5	KW 22350 G 12887 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 Furn	 23	KW 21600 G 17151 O 47644
6	W1352	413	25	3		114.5	4:16	55.0	52.0	#8	3	49.7		Repaired Bottom B-4 this heat	 8.8	KW 21610 G 13790 O 38751
7	X-1267	413	15	2		115.0	5:08	53.5	47.5	#2	3	46.3			 20.5	KW 20910 G 15713 O 41824
8	W1353	147	8	5		110.8	6:06	56.0	46.8	#6	3	41.2			 21.0	KW 21320 G 13338 O 34298
9	X-1268	147		2		107.8	6:55	52.5	47.8	#10	3	44.4			 26	KW 19490 G 16567 O 41846
10																
11																

Document No MS-015 Revision Date: 02-15-99 Revision Level: D

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

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 CASTER DELAYS	
1	W-1354	147	7.9	7	-	120.0	8:06	58.3	54.3	# 8	3/2	38.0			14.3	E 22090 6 13245 O 53667
2	X-1269	147	25	2	-	47.3	14:40	67.8	46.5	2	3	51.1	T/A	Sec 1-2	7.0	K 25836 G 27371 O 63014 K G O K G O
3	W-1355	147														
4																
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	3742	8 459	No Cast	0		wouldn't open, return to fce.	K 21,230 G 27,371 O 63,014 PD 17.8
2	X-1270	756 6150 H	6.3	9	–	125.3	16:45	62.8	52.5	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	69.3	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. 9500 lbs. in slag pot after this heat.	K 23,090 G 13,961 O 33,255 PD 2.5
5	W-1357	147 1095 Mod	300	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	66.9	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	–	92.3	22:53	53.0	41.3	7 461					K 19,560 G 15,03[illegible] O [illegible] PD 17.0
9															
10															
11															

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

Kentucky Electric St[illegible], Inc.

EAF / LMF Co[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	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 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

Power & Supply Consumption

	Amount Used	
	At Furnace	At LMF
Power Meter	23650	3075
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	18	
Wall Heat	18	
Thermocouples		
Samplers		
Oxygen Probes		

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

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

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	1	200			
Cal Sil					

Alloys Added (lbs.) 22:20

Time	Furnace	Ladle	LMF	LMF
Carbon	415		40	
75% FeSi		150	25	25
SiMn		1400		
HC FeMn			125	
MC FeMn				100
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	25.1B
FeS	

Argon Log

Argon Flow	[illegible]	[illegible]									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	2912						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	V ~~Al~~
Spec.	14	110	20	25	22	35	30	20	06		
Prelim.	7	11	4	55	-	27	10	10	02		
Prelim	9	[illegible]	7	35	22	23	27	13	2	13	063
Prelim	14	103	7	[illegible]	22	28	27	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:	412 555
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  R.O. 1  Billet Size  Length  Count  Tons  Stack  1Scrap  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
412	235	451	10		6	6	5-11-2000	3-11	X-1272

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

Remarks:

[illegible]

Kentucky Electric St[illegible], Inc.

EAF / LMF Co[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		18:35	
1st Chg.	18:50		
2nd Chg.			
3rd Chg.			
Tapping	20:20	20:25	
Tap Temp.	2387	Totals:	
Total Time of Heat:			

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	2040
Current Heat - Treatment Start	2042
Preparation Time	
Current Heat - Treatment Stop	21:21
Total Time of Heat	39:06

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	4160	21:25
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta		17
Wall Heat		17
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
50 tons	

Couldn't get open

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-C		
Lime			700		
DoloLime					
Ni					
Cal Sil		4-13			

Alloys Added (lbs.) 21:25

Time	Furnace	Ladle	LMF	LMF
Carbon			300	20
75% FeSi			50	
SiMn				
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

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

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	20:15	20:52	21:06	21:19
Temp. (°F)	2880	2796	2825	2875
Oxygen (ppm)				

Final N_2 (ppm):

Final Temp (°F):

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~~ N/A
Spec.	95	57	20	25	17	35	20	15	06		
Prelim	84	58	11	2	12	21		15	06		
Prelim	74	55	14	19	12	21	8	12	02		
Prelim	87	55	15	17	16	21	8	13		9	026
Prelim					16	21	8	13	2	10	026
Prelim											
Prelim											
Final	.96	.55	.014	.017	.16	.21	.08	.13	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI
Final	.004	.006	.026	.000	.000	.0000	.0006	.0013	

Grade Code: 147

Sample Type: 555

GRADE 1095 MOD

```
Heat No. U1357        Product Code 21H
Split  B.O. #  Billet Size  Length Count Tons Stack #Scrap Tons
  A    5972    5.00X7.00     202     51  50.0  T1-3    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
                               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	461	8		35	10	5-11-2000	3-11	U.1357

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

Remarks:

Kentucky Electric S[illegible], Inc.

EAF / LMF Co[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	16:56	—
1st Chg.	17:20	17:53	75,000
2nd Chg.	17:55		40,000
3rd Chg.			
Tapping	19:30	19:35	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	1955
Current Heat - Treatment Start	20:02
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	242[illegible]
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	17	
Wall Heat	17	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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		300		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.) 20:40

Time	Furnace	Ladle	LMF	LMF
Carbon			140	40
75% FeSi		100		85
SiMn		1600		
HC FeMn			200	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	10 LBS
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow | Rinse Flow:

Temperatures and Times

Time	1817	1931	20:14	20:17
Temp. (°F)	2815	2966	2830	2855
Oxygen (ppm)				

Final N_2 (ppm):
Final Temp (°F):
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	6	47	–	19	8	13	62		
Prelim	14	107	12	36	24	19	8	14	2	10	
Prelim	36	131	13	39	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: 278	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  BB3      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.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
912	735	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

[illegible]

Kentucky Electric S' 'l, 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	62,000
2nd Chg.	16:23		53,000
3rd Chg.			
Tapping	18:30	18:35	
Tap Temp.	3040	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	19:04
Current Heat - Treatment Start	19:07
Preparation Time	
Current Heat - Treatment Stop	19:55
Total Time of Heat	48:25

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	21,800	2785
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	16	
Wall Heat	16	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1100			
Cal Al					
Spar			3-B		
Cal C			4-C		
Lime	4000		700		
DoloLime					
Ni					
Cal Sil					

2010 **Alloys Added (lbs.)**

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B	4-B	20	
75% FeSi		200		25
SiMn		900		
HC FeMn				
MC FeMn				
FeCr		1000	75	
Moly Oxide		9-C		
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	3-15
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	17:05	18:17	18:19	19:18	19:26	19:36	19:44	19:52	19:55	
Temp. (°F)	2863	2815	2899	2789	2849	2906	2891	2874	2882	
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	36	20	95	20		
Prelim	38	20	18	55	1	18	6	14	02		
Prelim	43	90	23	36	25	19	9	86	20	10	028
Prelim	30	20	24	17	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	DI		
Final	.004	+.007	.029	.000	.000	.0000	.0007	+.0029		Grade Code: 521	Sample Type: 555

GRADE 4150

```
Heat No. W1356       Product Code 281
Split  R.O. #   Billet Size Length Count Tons Stack #Scrap Tons
A      5974     5.00X7.00    197    42  40.1 DD3     8   7.0
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	233	452			12	12	5-11-2000	3-11	W1356

Remarks:

Kentucky Electric Ste[illegible] Inc.

EAF / LMF Co[illegible]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 Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	17:22
Current Heat - Treatment Start	17:25
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.

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	2640	6475
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	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			3-75		
Cal C			4-2		
Lime	4000		900		
DoloLime					
Ni	1				
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		4-B	100	30
75% FeSi		200		
SiMn		1000		
HC FeMn			100	
MC FeMn				
FeCr		1000	300	150
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	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	—	18	7	11	02		
Prelim	38	74	10	15	25	18	9	72	2	8	181
Prelim	48	82	11	12	25	16	9	84	2	9	142
Prelim											
Prelim											
Prelim											
Final	.52	.83	.012	.010	.27	.18	.09	.95	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI	Grade Code: 756
Final	.004	.185	.001	.000	.000	.0000	.0010	+.0015	4.29	Sample Type: 555

GRADE 6150H no message defined

```
Heat No. X-1270     Product Code 20W
Split  B.O. #   Billet Size  Length Count Tons Stack #Scrap Tons
  A     5973     5.00X7.00    174    53  44.7  113      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	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 Co[illegible]bined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	———	0805	———
1st Chg.	11:38	1432	80000
2nd Chg.	1434		35
3rd Chg.			
Tapping	1510	15:25	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

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

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	20950	4475
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	15	
Wall Heat	15	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-B		
Cal C			4-Q		
Lime	4000		900		
DoloLime					
Ni					
Cal Sil		4-B			

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		4-B	300	450 / 456
75% FeSi			1:15	50
SiMn		500		
HC FeMn			100	100
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

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

Argon Log

Argon Flow										

Rinse Flow:

Temperatures and Times

Time	15:07	16:30	16:53	17:53	18:02	18:04				
Temp. (°F)	2961	2754	2818	2844	28[illegible]	2845				
Oxygen (ppm)				1						

Final N_2 (ppm):
Final Temp (°F):
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	44	[illegible]	4	19	11	22	7	10	2		
Prelim	70	56	7	16	18	23	5	11	2	9	223
Prelim	88	55	5	13	20	21	7	10	2	14	027
Prelim	88	54	5	11	20	21	7	10	2	9	224
Prelim										9	223
Final	-.00	-.00	.000	.000	-.00	.00	.00	.00	.00	.000	

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

GRADE 1095 MOD NO 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: 01-19-1999 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 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	25220	2100
Electrode #1	1	
Electrode #2	1	
Electrode #3		
Lance Sections		
Roof Delta	15	
Wall Heat	15	
Thermocouples	3	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-B		
Cal C			2-[illegible]		
Lime	4000		700		
DoloLime					
Ni	1				
Cal Sil		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				

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	1430	1436	1439	15:05	15:24	1544	1555	16:01	16:08
Temp. (°F)	2949	2964	3071	2833	2[illegible]	2837	2837	2840	2839
Oxygen (ppm)									

Final N_2 (ppm):

Final Temp (°F):

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	20	25	12	35	20	15	06		
Prelim	4	7	5	40	0	24	8	6	2	10	
Prelim	83	30	5	10	21	2[illegible]	6	7	2	10	025
Prelim	54	31	5	21	20	23	8	7	2	10	025
Prelim	80	42	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	DI
Final	.004	.004	.026	.000	.000	.0000	.0003	.0016	

Grade Code. 147
Sample Type. 555

GRADE 1095 MOD

```
Heat No. X-1269      Product Code 215
Split  B.O. #   Billet Size Length Count Tons Stack #Scrap Tons
  A     5971     5.00X7.00    213    50  51.7  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
                                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: [illegible] 1st 2 elect. Delay 0758-13:40 scrap crane down & [illegible] on bay [illegible]

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (ti[me])

	Start	Stop	Scrap Wt.
Last Tap		0608	
1st Chg.	0615	0700	61400
2nd Chg.	0707		54
3rd Chg.			
Tapping	0800	0805	
Tap Temp.	3066	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	835
Last Heat - Treatment Stop	834
Current Heat - Treatment Start	
Preparation Time	503
Current Heat - Treatment Stop	932
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

[P]ower & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	22090	2819
Electrode #1		
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	014	
Wall Heat	014	
Thermocouples	3	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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		4-B			

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 Sil	
FeCb	3-B
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0730	0746	0756								
Temp. (°F)	2848	2998	3066								Final N_2 (ppm):
Oxygen (ppm)											Final Temp (°F):
											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.	46	62	20	25	17	35	20	15	06		
Prelim	19	15	6	54	1	26	8	12	2	10	
Prelim	34	38		33	6						
Prelim	79	54		22	14						
Prelim											
Prelim											
Prelim											
Final	-.90	.55	.008	.015	.23	.25	.07	.14	.02	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI		
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	R.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5969	4.75X0.00	400	36	38.0	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
919		185	8		52	8	5-11-00	7/3	W-1354

Document No: MS-013 Revision Date: 01-19-1999 Revision Level: F

Remarks: Add 3 elect.

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	0510	
1st Chg.	0520	0603	64700
2nd Chg.	0605		46
3rd Chg.			
Tapping	06:[illegible]	0657	
Tap Temp.	2924	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	07:16
Current Heat - Treatment Start	07:19
Preparation Time	6301
Current Heat - Treatment Stop	0725
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	19430	1925
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	14	
Wall Heat	14	
Thermocouples	2	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

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	30
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	0638	0645
Temp. (°F)	2941	3024
Oxygen (ppm)		

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 147 Roll No: 044 Chemistry: 1

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	10	4	49	0	23	7	9	1	9	
Prelim	61	23		36	4						
Prelim	88	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	DI	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
Split  W.O. #  Billet Size Length Count Tons Stack #Scrap Tons
  6     3969    4.75X8.00    200     42 44.4 11-3       0   0.0
  1:      0                    0      0   0.0           0   0.0
  (       0                    0      0   0.0           0   0.0
  1:      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
913		232	10		4	4	5-11-02	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
3rd Chg.			
Tapping	06:03	06:08	
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	06:14
Current Heat - Treatment Start	06:16
Preparation Time	00:31
Current Heat - Treatment Stop	714
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	013	
Wall Heat	013	
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			9-C		
Cal C					
Lime	4000		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	DI	Grade Code:	147
Final	.004	.003	.029	.000	.000	.0000	.0005	.0013		Sample Type:	555

GRADE 1095 MOD

Heat No. W-1353 Product Code 1F

Split	R.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	10		31	31	5-11-00	11-7	W-1353

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

Remarks:

ntucky 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	05:22
Current Heat - Treatment Start	05:24
Preparation Time	50:1
Current Heat - Treatment Stop	06:14
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	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			8-B		
Spar			2-C		
Cal C					
Lime	4000		300		
DoloLime					
Ni		220			
Cal Sil					

17 after

Alloys Added (lbs.)

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 Sil	300
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	3-B
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	05:38	05:58								
Temp. (°F)	2871	2915								
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	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	Grade Code:	413
Final	+.006	.050	.000	.000	.001	.0000	.0013	+.0017		Sample Type:	555

GRADE A572-GR/60 CV

Heat No. X-1267 Product Code 22K

Split	O.D. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5982	4.75X8.00	209	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	Ladlemen	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
913	215	419	2		15	15	5-11-00	11-7	X-1267

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

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	
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	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.		1,000	60/40		
Cal Al			3 - B		
Spar			3 - C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni		220		100	
Cal Sil					

250 after Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			90	
75% FeSi		125		
SiMn		1300		
HC FeMn			100	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

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

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

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

Final N_2 (ppm):

Final Temp (°F):

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	40	—	28	8	8	2	12	—
Prelim	10	96		23	24		18	V 54			
Prelim	14	1.02		14	22		27	V 53			
Prelim											
Prelim											
Prelim											
Final	.15	1.05	.007	.010	.22	.28	.27	.10	.02	.014	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI	Grade Code:	413
Final	+.004	.054	.000	.000	.000	.0000	.0010	+.0016		Sample Type:	555

GRADE A572-GR/60-CV

Heat No. W-1352 Product Code 22K

S-Lit	B.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
A	5902	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
			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

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

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 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	03:18
Current Heat - Treatment Start	03:20
Preparation Time	00:02
Current Heat - Treatment Stop	04:31
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	At Furnace	At LMF
Power Meter	2442	3773
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 Sil					

Alloys Added (lbs.)

25 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 Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	313
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	V 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	Grade Code: 41
Final .004	+.075	.000	.000	.000	.0000	.0010	+.0014			Sample Type: 555

GRADE A572-GR/60 CV

```
Heat No. X-1266      Product Code 22K
Split  R.O. #   Billet Size Length Count Tons Stack  Scrap Tons
  A     5782     4.75X8.00     209    45 42.7 II-3        3  3.3
  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		3	3	5-11-00	11-7	X-1266

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		00:55	
1st Chg.	01:05	01:25	71200
2nd Chg.	01:30		45
3rd Chg.			
Tapping	02:20	02:25	
Tap Temp.	3055	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	02:35
Current Heat - Treatment Start	02:38
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

	At Furnace	At LMF
Power Meter	22390	2002
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	611	
Wall Heat	611	
Thermocouples		3
Samplers		2
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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		
Dolol.ime					
Ni					
Cal Sil					

Alloys Added (lbs.)

23 aflw

Time	Furnace	Ladle	LMF	LMF
Carbon			110	30
75% FeSi		250		
SiMn		700		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	350
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

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

Final N_2 (ppm):
Final Temp (°F):
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	.20	026	025	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	Bi
Final	.005	.003	.000	.000	.000	.0000	.0021	.0013	

Grade Code: 120
Sample Type: 555

GRADE 1035 SQ

```
Heat No. W-1351     Product Code 220
Split  R.O. #  Billet Size Length Count Tons Stack #Scrap Tons
  A     5976    4.75X8.00    238    34  40.9 11-3      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   0.0
```

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	W-1351

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

Remarks:

Chaparral 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	01:23
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	3123
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	611	
Wall Heat	011	
Thermocouples		4
Samplers		4
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 Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			100	30
75% FeSi		250	40	35
SiMn		700		
HC FeMn			220	
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	01:35	01:47	02:11	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	0.30	22	35	20	20	06	20	—
Prelim.	6	8	5	37	—	20	6	7	1	8	—
Prelim	7	52		28	19						
Prelim	16	67		31	20						
Prelim											
Prelim											
Prelim											
Final	.20	.68	.007	.013	.22	.20	.06	.10	.01	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	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     219    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
```

Melter	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:

ntucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
ast Tap		2225	
st Chg.	22:42	2328	83,000
nd Chg.	23:35		32,
rd Chg.			
apping	00:58	00:55	
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	00:21
Current Heat - Treatment Start	00:55
Preparation Time	34'15
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	1720
Electrode #1	1	
Electrode #2	1	✓
Electrode #3		✓
Lance Sections		
Roof Delta	010	
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.		1,000	60/40		
Cal Al			3-B		
Spar			3-C		
Cal C					
Lime	4,000		300		
DoloLime					
Ni	1				
Cal Sil					

Alloys Added (lbs.)

25 after

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		250	25	
SiMn		650		
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	01:05	01:19									Final N_2 (ppm):
Temp. (°F)	2913	2909									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	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	Ci	Grade Code:	921
Final	.004	.003	.000	.000	.000	.0000	.0015	.0012		Sample Type:	555

GRADE A36

```
Heat No. W-1350      Product Code 200
Split  B.O. #   Billet Size  Length Count  Tons  Stack  #Scrap  Tons
  A    5977     4.75X8.00     219    42   18.3  PO-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 elbot / LMF set #1-3 ele Tak

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
1st Tap	———	21:35	
1st Chg.	21:37	22:33	75,000
2nd Chg.	22:35		35,000
3rd Chg.			
Tapping	23:15	2320	
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	1
Last Heat - Treatment Stop	23:22
Current Heat - Treatment Start	23:36
Preparation Time	55113
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	Amount Used At LMF
Power Meter	18830	3775
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			300		
Spar			300		
Cal C					
Lime	7000		300		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

20 after

Time	Furnace	Ladle	LMF	LMF
Carbon	H-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 Sil	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	2850								Final Temp (°F):
Oxygen (ppm)										Final O_2 (ppm):

Chemistry and Billet Information

Practice: 112 Roll No: 644 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	.11	.01	.007	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI	Grade Code:	112
Final	.003	.000	.000	.000	.000	.0000	.0010	.0010		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     32  44.5 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	419	6		30	30	5-11-00	11-7	X-1264

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

Remarks:

entucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	——	20100	
1st Chg.	21:10	21:47	78000
2nd Chg.	21:49		39000
3rd Chg.			
Tapping	22:20	22:25	
Tap Temp.	3120	Totals:	
Total Time of Heat:			

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	22:24
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		

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

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1006			
Cal Al					
Spar			2-13		
Cal C			4-2		
Lime	4000		320		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.) 23:25

Time	Furnace	Ladle	LMF	LMF
Carbon	40		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 Log

Argon Flow | Rinse Flow:

Temperatures and Times

Time	22:15	22:46	22:57	23:06	
Temp. (°F)	2822	2879	2927	2905	
Oxygen (ppm)					

Final N_2 (ppm):
Final Temp (°F):
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	06		
Prelim.	9	13	2	28	-	19	7	10	02		
Prelim	12	80		18	25						
Prelim											
Prelim											
Prelim											
Prelim.											
Final	.13	.91	.006	.012	.26	.20	.07	.13	.02	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Bi	Grade Code:	490
Final	.004	.002	.000	.000	.000	.0000	.0010	.001		Sample Type:	555

GRADE SAE 945 GRA

```
Heat No. W-1349     Product Code 993
Split  B.O. #   Billet Size  Length Count  Tons  Stack  #Scrap  Tons
  A    5960     4.75X8.00       177    54  50.5  III-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
212	235	461	2		14	14	5-10-00	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		
Tapping	14:36	14:41	19
Tap Temp.	2945	Totals:	
Total Time of Heat:			

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	14:45
Current Heat - Treatment Start	14:[illegible]
Preparation Time	
Current Heat - Treatment Stop	15:34
Total Time of Heat	48:45

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	21800	2975
Electrode #1	1	
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	27	
Wall Heat	27	
Thermocouples	2	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1610			
Cal Al					
Spar			9-B		
Cal C			4-C		
Lime	4000		700		
DoloLime					
Ni					
Cal Si					

Alloys Added (lbs.)

15:40

Time	Furnace	Ladle	LMF	LMF
Carbon			60	10
75% FeSi		250	75	50
SiMn		600		
HC FeMn			150	20
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	1431	1436	14:48	15:05	1532				
Temp. (°F)	2880	2945	2861	2914	2915				
Oxygen (ppm)									

Final N_2 (ppm):

Final Temp (°F):

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	35	20	15	06		
Prelim	8	8	12	49	0	27	7	10	1	11	
Prelim	8	44	10	40							
Prelim	15	53	10	40	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		Sample Type:	898

GRADE 1018 SQ

(NO CAST)

```
Heat No. X12B1        Product Code 30X
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
99	235	114	2		22	22	5-12-00	7/3	X-1281

Remarks: S[illegible] 175 short

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	19:65	20:00	
Tap Temp.	3040	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

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

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	22140	
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections	29	
Roof Delta	21	
Wall Heat		
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

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		2-13		
75% FeSi		250		
SiMn		900		
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	19:10	19:37								
Temp. (°F)	2904	2863								
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 644 Chemistry:

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
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	Grade Code: 110
Final	.000	.000	.000	.000	.000	.0000	.0000	.0000		Sample Type: 898

GRADE 1018 SQ NO CAST

Heat No. W1369

Product Code 32W

Split	R.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
							0	0.0

Would not shut off!

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats On Plug	Date	Shift	Heat No.
912		461	10		12	12	5-12-2000	3-11	W-1369

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

Remarks: Delay Electrode won't slip 17:45

Kentucky Electric Stee., Inc.

EAF / LMF Con.Jined 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 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	16360	
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	219	
Wall Heat	229	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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	1				
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-13			
75% FeSi		250		
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								
Temp. (°F)	2921	2920								
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	35	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	DI
Final	.003	.000	.000	.000	.000	.0000	.0000	.0012	

GRADE 1018 SQ

Grade Code: 110

Sample Type: 555

```
Heat No. X1283      Product Code 32W
Split  H.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 St[illegible], Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	1515D	—
1st Chg.	1644		
2nd Chg.			—
3rd Chg.			
Tapping	17:15	17:20	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	17:37
Current Heat - Treatment Start	17:51
Preparation Time	
Current Heat - Treatment Stop	18:[illegible]
Total Time of Heat	23:31

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	5616	177
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	28	
Wall Heat	28	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
1 Heat	

Slid gate

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			100		
DoloLime					
Ni	1				
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-13			
75% FeSi		366	50	
SiMn		200		
HC FeMn				
MC FeMn			820	
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	551
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	16:38	18:02	18:15
Temp. (°F)	1946	2275	2920
Oxygen (ppm)			

Final H_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 116 Roll No: 644 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	15	06		
Prelim	16	49	15	39	19	26	7	13	01		
Prelim	17	65	14	25	20	26	7	14	1		
Prelim											
Prelim											
Prelim											
Final	.17	.65	.014	.017	.20	.25	.07	.14	.01	.010	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI
Final	.004	.001	.000	.000	.000	.0000	.0011	.0012	

Grade Code: 110

Sample Type: 555

GRADE 1018 SQ

```
Heat No. W1368        Product Code 230
Split  R.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 Number
912	331	451	2		23	23	5-12-2003	3-11	W-1368

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		1441	
1st Chg.	14:58	15:38	72,000
2nd Chg.	15:40		48,000
3rd Chg.			
Tapping	16:40	16:43	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	7
Last Heat - Treatment Stop	16:50
Current Heat - Treatment Start	16:5[illegible]
Preparation Time	
Current Heat - Treatment Stop	17:39
Total Time of Heat	47:[illegible]

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	21530	2775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	28	
Wall Heat	38	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-1/3		
Cal C			1/2		
Lime	4000		300		
DoloLime					
Ni	1				
Cal Sil					

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 (ft)

Sulfur	
Carbon	
Cal Sil	150
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	16:25	16:32	1708	1718	1724	1731	17:38			
Temp. (°F)	2800	3005	2920	2908	2920	2901	2920			
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	35	20	15	6		
Prelim	7	8	22	40	-	21	2	10	6		
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
Final	.004	.004	.000	.000	.000	.0000	.0009	.0012	

Grade Code: 110

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	461	10		11	11	5-12-2000	3-11	X-1282

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

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	1445	80370
2nd Chg.	1447		35
3rd Chg.			
Tapping	15:45	15:50	
Tap Temp.	3020	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

Car Number	7
Last Heat - Treatment Stop	[illegible]
Current Heat - Treatment Start	15:[illegible]
Preparation Time	
Current Heat - Treatment Stop	[illegible]:50
Total Time of Heat	56:37

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		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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]00		
DoloLime					
Ni	1				
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			60	20
75% FeSi		250	50	25
SiMn		700		
HC FeMn			125	
MC FeMn				30
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	15:22	15:29	15:42	16:07	16:2[illegible]	16:30					Final N_2 (ppm):
Temp. (°F)	2847	2941	2956	2959	2909	2824					Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 024 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	20	15	06		
Prelim	9	57	9	30	–	28	7	12	01		
Prelim	14	66	8	30	19	28					
Prelim					19	28	7	14	1	14	
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 1018 SQ

Heat No. W1367 Product Code 230

Split	H.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	3135	452	8		40	15	5-12-00	3/A	W-1367

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

Remarks: No bucket 13:28-1445 [illegible]

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	——	11:43	——
1st Chg	11:56	12:32	66300
2nd Chg	1224		49
3rd Chg			
Tapping	13:23	1328	
Tap Temp.	3148	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	13:45
Current Heat - Treatment Start	1348
Preparation Time	20:31
Current Heat - Treatment Stop	1403
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	20910	1725
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	26	
Wall Heat	24	
Thermocouples	1	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			— or		
Cal C					
Lime	4000		350		
DoloLime					
Ni	1				
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	1321
Temp. (F)	3148
Oxygen (ppm)	

Final N_2 (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	60	5	31	0	27	9	13	2	9	
Prelim	0	64		10	21						
Prelim											
Prelim											
Prelim											
Prelim											
Final	.16	.67	.009	.013	.22	.27	.10	.17	.02	.010	

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

Grade Code: 110

Sample Type: 555

GRADE 1018 SQ

Heat No. W1366 Product Code 30X

Slit	H.O. #	Billet Size	Length	Count	Tons	Stack	#Scrap	Tons
0	5988	5 00X7.00	170	19	15.7	EE1	0	0.0
0	5989	5 00X7.00	175	47	39.9	EE1	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
91		185	7		38	4	5-12-00	7/3	W-1366

Remarks:

Kentucky Electric ·eel, Inc.

EAF / LMF C-mbined 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 Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1255
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	1475
Electrode #1		
Electrode #2	1	
Electrode #3		
Lance Sections		
Roof Delta	26.	
Wall Heat	26	
Thermocouples	3	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			20		
Cal C					
Lime	4000		350		
Dolo Lime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			30	
75% FeSi		250	100	
SiMn		600		
HC FeMn			350	
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	1228	1240	1243
Temp. (°F)	2758	2933	3023
Oxygen (ppm)			

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 1018

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	41		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
Final	.004	.002	.000	.000	.000	.0000	.0013	.0013	

Grade Code 110

Sample Type 555

GRADE 1018 SQ

```
Heat No. X-1280     Product Code 30X
Split  B.O. #  Billet Size  Length Count  Tons  Stack  Scrap  Tons
 0     5988    5.00X7.00     170     63  51.9  EF-1     0    0.0
 1      0      5.00X7.00      0       0   0.0           0    0.0
 2      0                     0       0   0.0           0    0.0
 3      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		452	10		10	10	5-12-00	7/3	X-1280

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

Remarks: Jim Jun. Set no 2 electrode

Kentucky Electric Ste[illegible] Inc. **EAF / LMF Cor[illegible]bined Heat Sheet**

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		0959	
1st Chg.	1011	1030	60000
2nd Chg.	1055		55
3rd Chg.			
Tapping	1138	1143	
Tap Temp.	3021	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1116
Current Heat - Treatment Start	1311
Preparation Time	4428
Current Heat - Treatment Stop	1255
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	21820	2200
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	25	
Wall Heat	25	
Thermocouples	3	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			1-13		
Cal C					
Lime	4000		3.0		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		250	100	50
SiMn		600	300	
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	1127	1134	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: 0124 Chemistry: 1200

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	15	06		
Prelim	12	17	18	48	C	29	9	20	2	5	
Prelim	10	52		28	24						
Prelim	14	70		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
  A    5787     5.00X7.00     177    20  19.1  EE-1     0    0.0
  B    5788     5.00X7.00     170    40  33.0  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	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919		114	8		39	13	5-12-00	7/3	W-1365

Remarks:

Kentucky Electric S[illegible]l, Inc.

EAF / LMF C[illegible]nbined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		0849	
1st Chg.	0905	0931	63[illegible]
2nd Chg.	0933		52
3rd Chg.			
Tapping	10:29	1039	
Tap Temp.	3093	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	
Current Heat - Treatment Start	
Preparation Time	45 52
Current Heat - Treatment Stop	1210
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	19630	2225
Electrode #1		
Electrode #2		
Electrode #3		✓
Lance Sections		
Roof Delta	25	
Wall Heat	25	
Thermocouples	2	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
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								
Temp. (°F)	3151	3093								
Oxygen (ppm)										

Final N_2 (ppm):
Final Temp (°F):
Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 10 HT [illegible]

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	22	35	20	20	06		
Prelim	4	6	5	28	0	23	9	5	2	9	
Prelim	5	40		43	18						
Prelim	16	68		30	20						
Prelim											
Prelim											
Prelim											
Final	.16	.69	.008	.026	.24	.23	.09	.07	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI
Final	.004	.002	.000	.000	.000	.0000	.0013	.0014	

Grade Code: 110
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     197     53  50.6 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
                               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		1185	2		21	21	5-12-00	7/3	X-1279

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

Remarks: 1st Phase electrode @ 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	48400
3rd Chg.	0868		22
Tapping	0954	0959	
Tap Temp.	3002	Totals:	

Total Time of Heat:

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	1000
Current Heat - Treatment Start	1005
Preparation Time	00.05
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	Amount Used At LMF
Power Meter	2260	2625
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	24	
Wall Heat	24	
Thermocouples	4	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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 Sil					

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	0957	10:41	10:55				
Temp. (°F)	2865	3023	3016	3002	2873	2901				
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 10 AF?

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	76	20	25	22	35	20	15	06		
Prelim	14	16	5	46	0	21	6	12	1	8	
Prelim	7	43		44	M						
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
Final	.004	.002	.000	.000	.000	.0000	.0005	.0012	

Grade Code: 110

Sample Type: 555

GRADE 1018 SQ

Heat No. W-1364 Product Code 32W

Split	B.O. #	Billet Size	Length	Count	Tons Steel		Scrap	Tons
A	5986	5.00X7.00	189	57	50.2	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
			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	2/3	W-1364

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.	3028	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	900
Current Heat - Treatment Start	904
Preparation Time	55, 13
Current Heat - Treatment Stop	1000
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	24820	2575
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	24	
Wall Heat	24	
Thermocouples	4	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

Additions To The Furnace and Ladle

Fluxes Added (lbs)

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

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon		10		
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						
Temp. (°F)	2801	2835	2899	3008						
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 2 After

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	20	25	27	35	20	15	2		
Prelim	7	7	6	75	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	DI
Final	.004	.002	.000	.000	.000	.0000	.0015	.0014	

GRADE 1018 SQ

Grade Code: 110
Sample Type: 555

```
Heat No. X-1278      Product Code 341
Split  P.O. #  Billet Size Length Count  Tons Steel  1Scrap  Tons
  A    5905    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.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
919		114	10		9	9	6-12-00	7/3	X-1278

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

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	0644	86,400
2nd Chg.	0648		29
3rd Chg.			
Tapping	0729	07:39	
Tap Temp.	3017	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	725
Current Heat - Treatment Start	735
Preparation Time	77.31
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	2775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	23	
Wall Heat	23	
Thermocouples	2	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			625		
Cal C					
Lime	4000		1900		
DoloLime					
Ni					
Cal Sil					

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 Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	0723	0727			
Temp. (°F)	2922	3017			
Oxygen (ppm)					

Final N_2 (ppm):

Final Temp (°F):

Final O_2 (ppm):

Chemistry and Billet Information

Practice: 110 Roll No: 044 Chemistry: 1S AFTER

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	70	020	035	22	35	20	15	06		
Prelim	6	7	3	81	2	19	11	9	3	9	
Prelim	5	39		64	13						
Prelim	13	70		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  H.N. #  Billet Size Length Count Tons Stack #Scrap Tons
  A     5785     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	5-13-02	1/3	W-1363

Document No: MS-013 Revision Date: 04-19-1999 Revision Level: 1

Remarks:

Kentucky Electric Steel, Inc. **EAF / LMF Combined Heat Sheet**

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		05:00	
1st Chg.	0512	05:53	66
2nd Chg.	05:55		49
3rd Chg.			
Tapping	06:34	06:39	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	
Last Heat - Treatment Stop	650
Current Heat - Treatment Start	655
Preparation Time	59
Current Heat - Treatment Stop	731
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	1970	2031
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	23	
Wall Heat	23	
Thermocouples	1	
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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	1				
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon				
75% FeSi		250		
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	0630									
Temp. (°F)	2984									
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	15			31							
Prelim											
Prelim											
Prelim											
Final	-.15	+.86	.010	.029	+.31	.18	.13	.09	.03	.008	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI
Final	.004	.003	.000	.000	.000	.0000	.0019	.0014	

Grade Code: 110
Sample Type: 555

GRADE 1018 SQ

```
Heat No. X-1277        Product Code 341
Split  R.O. #   Billet Size  Length Count  Tons Start  #Scrap  Tons
A      5984     5.00X7.00    151      31   28.7 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	Ladleman	Ladle No	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
977		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.	3155	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	1
Last Heat - Treatment Stop	0557
Current Heat - Treatment Start	0557
Preparation Time	53.00
Current Heat - Treatment Stop	650
Total Time of Heat	

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		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

10 - TIL

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			575		
Cal C			8-2		
Lime	4000		450		
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			80	50
75% FeSi		250	60	50
SiMn		600		
HC FeMn			300	
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	0605	0627	0644								Final N_2 (ppm):
Temp. (°F)	2873	2899	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	Sn	DI	Grade Code:	110
Final	.004	.003	.000	.000	.000	.0000	.0023	.0015		Sample Type:	555

GRADE 1018 SQ

```
Heat No. W-1362     Product Code 341
Split  R.O. #   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 Number
917	367	470	2		21	21	5-12-00	11-7	201362

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

Remarks:

Kentucky Electric Steel, ' c.

EAF / LMF Coml ied Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap		03:05	
1st Chg	03:23	04:07	79400
2nd Chg.	04:19		39
3rd Chg.			
Tapping	04:55	05:00	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	0510
Current Heat - Treatment Start	0512
Preparation Time	4/46
Current Heat - Treatment Stop	0554
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	21240	2525
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	22	
Wall Heat	22	
Thermocouples		
Samplers		
Oxygen Probes		

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

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.
6 Ton	

from PB

3-3/2

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			3-6		
Cal C			6-C		
Lime	4000		300		
DoloLime					
Ni					
Cal Sil					

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 Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	0521	0546								
Temp. (°F)	2871	2893								
Oxygen (ppm)										

Final N_2 (ppm):

Final Temp (°F):

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	2	22	11	6	3	9	
Prelim	5	44	6	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	DI	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
Strit  H.O. #  Billet Size Length Count Tons Stack #Scrap Tons
  6    5983    5.00X7.00    169   57 46.7 EE-1     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   0.0
```

Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
917	361	453	10		8	8	5-12-00	11-7	X-1276

Remarks:

Kentucky Electric Steel, Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap 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	5932
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	1	
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		
Lime	4,000		300		
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	0441	0459								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	15	06	20	—
Prelim.	6	7	10	30	—	20	10	7	2	7	
Prelim	10	49	6	36	25						
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	DI	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	307	323	8		37	12	5-12-00	11-7	W-1361

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

Remarks: Set A-B-C elect

Kentucky Electric St..., Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	—	01:00	—
1st Chg.	01:33	02:18	83400
2nd Chg.	02:20		32,
3rd Chg.			
Tapping	03:00	03:05	
Tap Temp.	3055	Totals:	
	Total Time of Heat:		

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 - AFTER

Power & Supply Consumption

	Amount Used: At Furnace	At LMF
Power Meter	22140	6775
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	21	
Wall Heat	21	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1000			
Cal Al					
Spar			2-B		
Cal C			6-C	2-C	
Lime	4000		500	150	
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon			80	40
75% FeSi		250	100	50
SiMn		600		
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	0341	0402	0416	0422
Temp. (°F)	2844	2871	2926	2926
Oxygen (ppm)				

Final N_2 (ppm):

Final Temp (°F):

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	30	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	Grade Code:	110
Final	.004	.003	.000	.000	.000	.0000	.0018	.0016		Sample Type:	555

GRADE 1018 SQ

```
Heat No. X-1275       Product Code 21H
Split  R.O. 4  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	367	470	7		35	3	5-12-00	11-7	X-1275

Remarks:

Kentucky Electric Ste.., 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		42.4
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	0226
Preparation Time	5825
Current Heat - Treatment Stop	0325
Total Time of Heat	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

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	2.0	
Wall Heat	2.0	
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			2-6		
Cal C			4-e		
Lime	4000		500		
DoloLime					
Ni					
Cal Sil					

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 Sil	
FeCb	
FeB	
FeTi	
FeV	
Nitrovan	
FeS	

Argon Log

Argon Flow											Rinse Flow:

Temperatures and Times

Time	0234	0245	0302	323							
Temp. (°F)	2818	2853	2890	2927							Final N_2 (ppm):
Oxygen (ppm)											Final Temp (°F):
											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	20	020	025	22	35	20	15	06	20	
Prelim	10	10	4	53	-	35	20	15	06	20	
Prelim	10	47	5	30	24	22	70	9	2	10	
Prelim	17	68	6	17	23						
Prelim											
Prelim											
Prelim											
Final	.17	.72	.008	.010	.25	.22	.10	.11	.03	.012	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI
Final	.005	.003	.001	.000	.001	.0000	.0014	.0014	

GRADE 1018 SQ

Grade Code: 110
Sample Type: 555

```
Heat No. W-1360      Product Code 21H
Split  R.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
                              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	2		19	19	5-12-00	11-7	W-1360

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	—	22:55	—
1st Chg.	23:15	00:05	73200
2nd Chg.	00107		27,
3rd Chg.			
Tapping	0055	01100	
Tap Temp.	30:55	Totals:	
Total Time of Heat:			

LMF Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	0121
Current Heat - Treatment Start	0123
Preparation Time	6103
Current Heat - Treatment Stop	0224
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	At LMF
Power Meter	19910	2575
Electrode #1		
Electrode #2		
Electrode #3	1	
Lance Sections		
Roof Delta	20	
Wall Heat	20	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

25-AFEC

Additions To The Furnace and Ladle

Fluxes Added (lbs)

Time	Furnace	Ladle	LMF	LMF	LMF
Slag Cond.		1,000			
Cal Al					
Spar			1-B		
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	0157	0207
Temp. (°F)	2884	2936	2914
Oxygen (ppm)			

Final N_2 (ppm):

Final Temp (°F):

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	5	7	6	55	—	21	8	7	2	11	—
Prelim	5	79	11	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

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

Remarks: Set C - elect

Kentucky Electric Steel, 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 Treatment Log (time)

Car Number	7
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	Amount Used At LMF
Power Meter	52820	2025
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	19	
Wall Heat	19	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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	4000				
DoloLime					
Ni					
Cal Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-15		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	0030	0055	0101							
Temp. (°F)	2826	2922	2919							
Oxygen (ppm)										

Final N_2 (ppm):
Final Temp (°F):
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	24						
Prelim	21	105	12	22	27						
Prelim											
Prelim											
Prelim	.21	1.02	.010	.018	.27	.23	.10	.16	.03	.011	
Final											

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	DI	Grade Code:	930 555
Final	.004 GRADE	.005	.000 A529 GR	.000 50	.000	.0000	.0011	.0012		Sample Type:	

```
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	9		56	36	5-12-00	11-7	W-1359

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

Remarks:

Kentucky Electric S[illegible], Inc.

EAF / LMF Combined Heat Sheet

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	——	21:16	
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 Treatment Log (time)

Car Number	2
Last Heat - Treatment Stop	2320
Current Heat - Treatment Start	2335
Preparation Time	4337
Current Heat - Treatment Stop	0019
Total Time of Heat	

Power & Supply Consumption

	Amount Used At Furnace	Amount Used At LMF
Power Meter	11420	5375
Electrode #1		
Electrode #2		
Electrode #3		
Lance Sections		
Roof Delta	19	
Wall Heat	19	
Thermocouples		
Samplers		
Oxygen Probes		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

Reason for Return to LMF / Furnace

Est. Return Wgt.	Added Scrap Wgt.

20-ASTEC

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		
Dolot.Lime					
Ni					
Cal Si					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B		60	
75% FeSi		180	100	
SiMn		1300		
HC FeMn			200	
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Si	
FeCb	
FeB	
FeTi	
FeV	4-R
Nitrovan	
FeS	

Argon Log

Argon Flow

Rinse Flow:

Temperatures and Times

Time	22:31	22:40	2346	2353	0008
Temp. (°F)	2819	3008	2808	2846	2883
Oxygen (ppm)					

Final N_2 (ppm):

Final Temp (°F):

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	6	62		
Prelim	8	82	7	38	14						
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  R.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 Stee., Inc. **EAF / LMF Combined Heat Sheet**

EAF Melting Log (time)

	Start	Stop	Scrap Wt.
Last Tap	——	18:35	——
1st Chg.	2030	2113	72,000
2nd Chg.	2115		38
3rd Chg.			
Tapping	2135	2200	
Tap Temp.	3020	Totals:	
	Total Time of Heat:		

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	2319
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		

LMF Steel Weight

Ladle Weight	
Tare Weight	49,000 #
Steel Weight	

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 Sil					

Alloys Added (lbs.)

Time	Furnace	Ladle	LMF	LMF
Carbon	4-B			
75% FeSi		200		
SiMn		1200		
HC FeMn				
MC FeMn				
FeCr				
Moly Oxide				
Copper				

Wire Added (ft)

Sulfur	
Carbon	
Cal Sil	
FeCb	
FeB	
FeTi	
FeV	4-12
Nitrovan	
FeS	

Argon Log

Argon Flow										Rinse Flow:

Temperatures and Times

Time	21:51	22:29	22:47	2251	2314						Final N_2 (ppm):
Temp. (°F)	2929	2832	2466	2924	2919						Final Temp (°F):
Oxygen (ppm)											Final O_2 (ppm):

Chemistry and Billet Information

Practice: 408 **Roll No:** 044 **Chemistry:**

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al
Spec.	16	100	20	25	22	35	20	20	06		
Prelim	28	21	7	40	-	20	8	16	02		
Prelim											
Prelim											
Prelim											
Prelim											
Prelim											
Final	.18	.98	.011	.009	.20	.20	.10	.19	.02	.009	

Element	Al	V	Nb	Ti	Zr	B	Ca	Zn	Di	Grade Code:	408 555
Final	+.004	+.051	.000	.000	.000	.0000	.0011	.0013		Sample Type:	

GRADE A572-GR/50

```
Heat No. W-1358    Product Code 21H
Split  R.O. #  Billet Size  Length  Count  Tons  Stack  #Scrap  Tons
  A    5979    5.00X7.00      172     56   46.7  HN-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
```

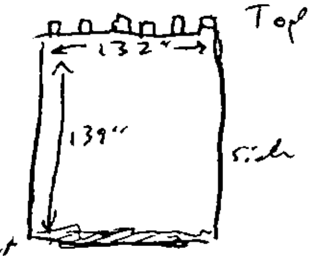
Melter	LMF Operator	Ladleman	Ladle No.	Gate No.	Heats on Ladle	Heats on Plug	Date	Shift	Heat Number
712	735	459	2		18	18	5-11-2000	3-11	W-1358

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

Remarks:

Appendix D

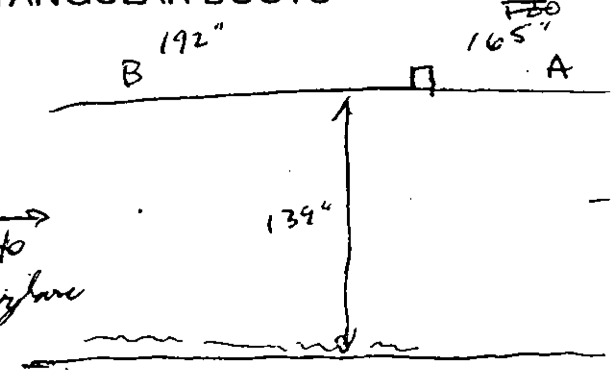
Emission Testing Field Data



Severe buildup in bottom of duct

TRAVERSE POINT LOCATION FOR RECTANGULAR DUCTS

Plant: Kentucky Electric Steel
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" baghouse
Duct Length, inches: 139"
Equivalent Diameter = 2 x L x W / (L + W) = 135.4"
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: RC / 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 1/8")

* 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

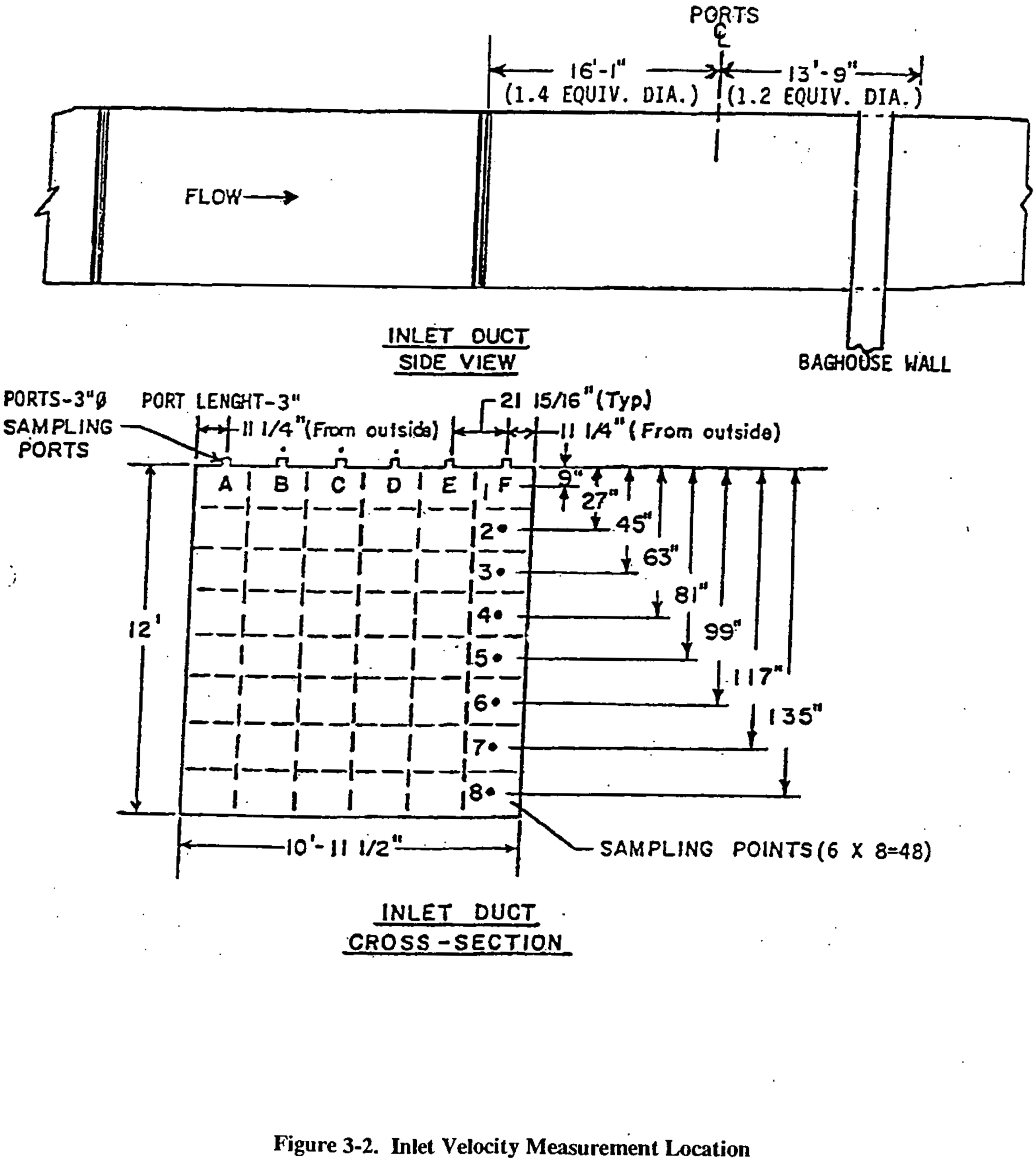


Figure 3-2. Inlet Velocity Measurement Location

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 ~~2.2~~ TW	148.4
	8	2.1	131.7
		$\sqrt{\overline{\Delta P}}$ =	$\overline{Ts}$ = 158

186²

Md = (0.44 x %CO_2) + (0.32 x %O_2) + (0.28 x %N_2)

Md = (0.44 x) + (0.32 x) + (0.28 x)

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

$\sqrt{\overline{\Delta P}}$ =

$$Vs = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{\frac{Ts\ (^\circ R)}{Ps \times Ms}}$$

$$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$$

Vs = ft/s

As = ft^2

Qs = Vs x As x 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

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	126.2
	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	1.4	118.4
	4	1.7	119.2
	5	1.8	119.8
	6	2.2	119.9
	~~7~~ 8	~~2.0~~ 1.9	~~119.5~~ 118.5
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

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

Ms = 28.73

$\overline{Ts}$ = 158 °F = 618 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

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 = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 612821 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} = 516355 dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Kentucky Electric Steel Date: 5/10/00
Sampling Location: Baghouse Inlet Clock Time: 15:15
Run #: Prelim = 2/3 Fans* Operators: RK/TC/TW
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H_2O: +2.3
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	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	156.3
	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

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ 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: BAGHOUSE INLET Clock Time: 15:15
Run #: PRELIM w/ 2/2. Operators: RK/TG/TW
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H_2O: +2.3
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
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
		$\sqrt{\Delta P}$ = 0.8112	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

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

Ms = 28.73

Ts = 156 °F = 616 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

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 = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 378,835 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

Qs_{std} = 318,343 dscfm

WB

GAS VELOCITY AND VOLUMETRIC FLOW RATE

5/12/00

Plant: KES Date: 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	169.4
	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
		$\sqrt{\Delta P}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md = 28.84$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} = \quad °F = \quad °R\ (°F + 460)$

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps = \quad$ 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

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} = \quad$ dscfm

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00
Sampling Location: BAGHOUSE INLET Clock Time: 1730
Run #: 500HP FAN OFF Operators: GG/TG/TW
Barometric Pressure, in. Hg: ____ Static Pressure, in. H_2O: +4.1
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 Temp. °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
		$\sqrt{\Delta P}$ = 1.1153	Ts = 170

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$$

$$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$$

$$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

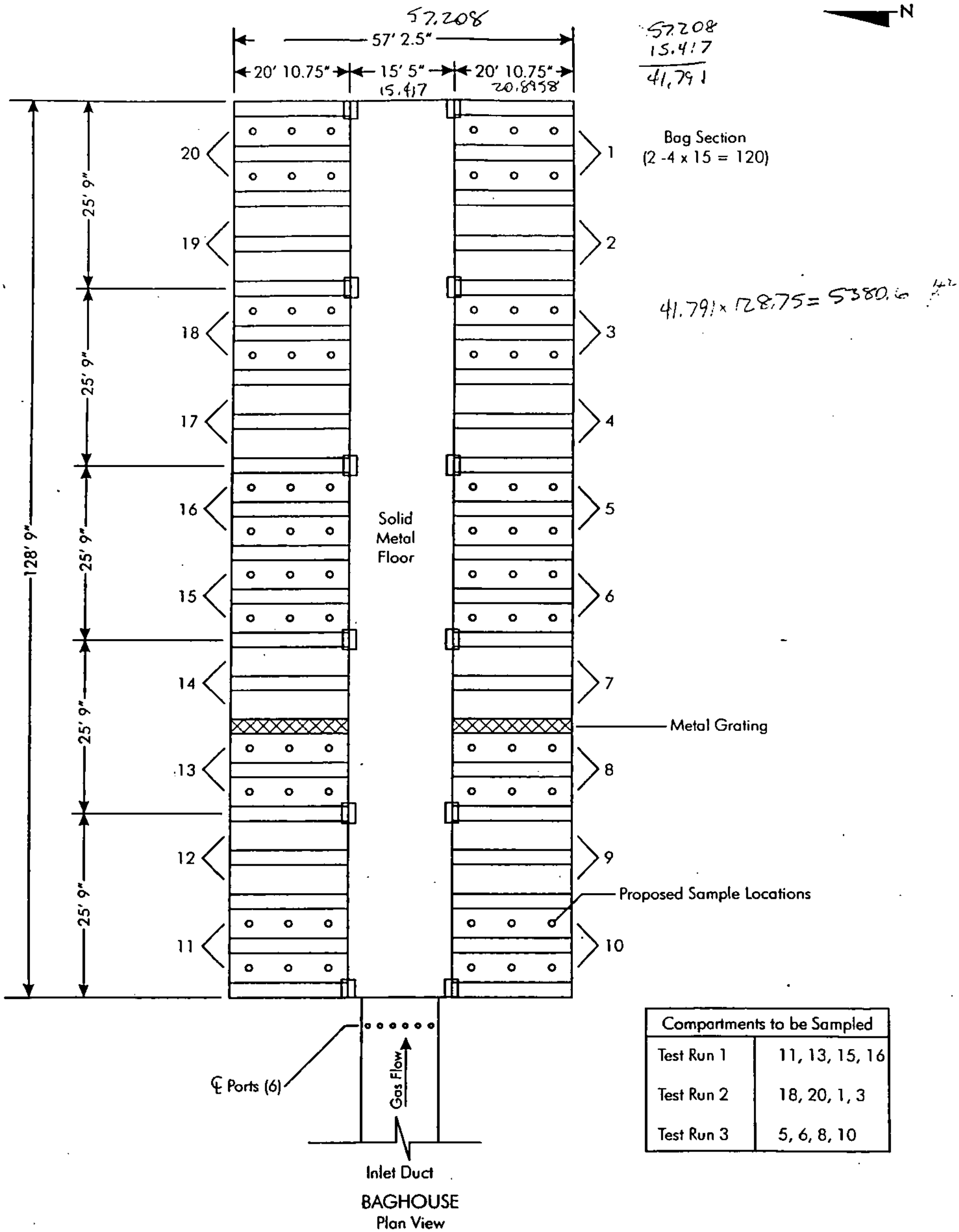
$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$$

$$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$$

$Qs_{std} =$ 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

125' + 23' + 23'
23' + 23' +
23'

20 compartments total

10 compartments per side

TRAVERSE POINT LOCATION FOR RECTANGULAR DUCTS

Plant: KES

Date: 5/10/00

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) = ______

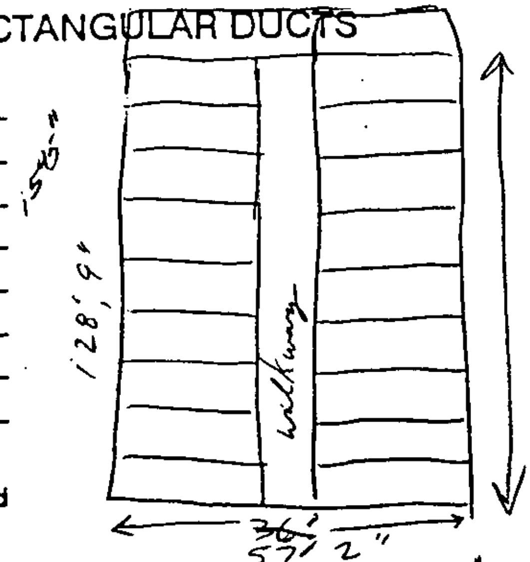
Distance Downstream from Flow Disturbance (Distance B):

______ inches / Equivalent Diameter = ______ dd

Distance Upstream from Flow Disturbance (Distance A):

______ inches / Equivalent Diameter = ______ dd

Calculated By: TW/RK



Schematic of Sampling Location

~~736.050 ft~~
~~1160.2 ft²~~
5381 ft²

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)

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 1/8")

* 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

S T A C K   T E S T   R E V I E W

NAME Ky Electric Steel TEST NO.

SOURCE TYPE Howell Pa... Baghouse RUN NO. 2-4

MODEL OR NAME DATE OF TEST 5-12, 2000 09:30

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS
T_s, Stack temperature	168	°F	V_{H2O}, Volume of water ____ cf
P_s, Stack pressure	[illegible]	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 82.20 fps
			Qsd 32,293,420 DSCF/hr

CO_2	0.0	%	Isokinetic Ratio
O_2	21.0	%	gr/scf @ 12% CO_2
CO_2	0.0	%	
N_2	79.0	%	

ΔP, Velocity head 1.78817 (1.33723) in.H_2O (traverse points) 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 RECOMMENDATION

D= ft $\frac{D2}{4}$ π 131.50 ft^2

10'11.5" x 12'

132 x 139 127 42

Boiler Heat Capacity mmBTU/Hr.

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Ky Electric Steel — TEST NO. ____

SOURCE TYPE Howell Furnace Baghouse — RUN NO. BT 2C-3A

MODEL OR NAME ____ — DATE OF TEST 5-12, 2000 10:50

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS		
T_s, Stack temperature	146	°F	V_{H2O}, Volume of water		cf
P_s, Stack pressure	29.78	in.Hg	B_{wo}, Moisture of content	[illegible]	
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		
V_{DGM}, Volume of sample (meter conditions)		cf	Velocity 81.92		fps
			Qsd 33,296,079 DSCF/hr		

Pb 29.78

CO_2 ____ %
O_2 ____ %
CO_2 ____ %
N_2 ____ %

Isokinetic Ratio ____

gr/scf @ 12% CO_2

ΔP, 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 pollutant ____ gm

CO_2, Waste only ____ %

REQUESTED BY ____

REVIEWED BY ____

DATE ____

RECOMMENDATION ____

A_s, Area of stack
D= ft $\frac{D2}{4}$ π 131.50 ft^2
111 x 112 ″
132 x 139 127.42

Boiler Heat Capacity mmBTU/Hr.

REMARKS

STACK TEST REVIEW

NAME Ky Electric Steel TEST NO. ______

SOURCE TYPE Hauell [illegible] Carbon RUN NO. 1A

MODEL OR NAME ______ DATE OF TEST 5-11, 2000 07 30

TEST PERFORMED BY EQ/PES

DATA REQUIRED		RESULTS
P_b 29.60		
T_s, Stack temperature 142 °F		V_{H2O}, Volume of water ______ cf
P_s, Stack pressure 29.38 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 81.62 fps
		Q_{SD} 33,615,682 DSCF/hr
CO_2 0.0 %		Isokinetic Ratio ______
O_2 21.0 %		gr/scf @ 12% CO_2 ______
CO_2 0.0 %		
N_2 79.0 %		
1.35945		
ΔP, Velocity head 1.3[illegible] in.H_2O (traverse points)		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 $\frac{D2}{4}$ π 131.50 ft^2		RECOMMENDATION ______
10'11.5" x 12'		
132 x 139 127.42		
Boiler Heat Capacity mmBTU/Hr.		

REMARKS

STACK TEST REVIEW

NAME Ky Electric Steel　　TEST NO. ______

SOURCE TYPE Howell Producer Pressure Chamber　　RUN NO. 1B

MODEL OR NAME ______　　DATE OF TEST 5-11, 2000　0705

TEST PERFORMED BY EQ/PES

DATA REQUIRED			RESULTS
	P_b 29.41		
T_s, Stack temperature	130	°F	V_{H2O}, Volume of water ______ cf
P_s, Stack pressure	29.43	in.Hg.	B_{wo}, Moisture of content 1% assumed
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		cf	M_{wet}, Molecular wt wet 28.73
(meter conditions)	8		Velocity 79.12 fps
			Q_{SD} 33,496,528 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 %			
ΔP, Velocity head 1.2693 (1.33007) in.H_2O			Lb/Hr
(traverse points)			
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 $\frac{D2}{4}\pi$ 131.5 ft^2			RECOMMENDATION ______
10'11½" x 12'			
132　139　127.42			
Boiler Heat Capacity mmBTU/Hr.			

REMARKS

DEP 4033

STACK TEST REVIEW

NAME Kentucky Electric Steel　　TEST NO.

SOURCE TYPE [illegible]　　RUN NO. BE 5B

MODEL OR NAME　　DATE OF TEST 5-12-05 [illegible]

TEST PERFORMED BY [illegible]/PES

DATA REQUIRED		RESULTS
T_s, Stack temperature 191 °F		V_{H2O}, Volume of water ______ cf
P_s, Stack pressure 29.79 in.Hg.		B_{wo}, Moisture of content 1% [illegible]
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 29.[illegible]
M_w, Condensed water ______ gm		M_{wet}, Molecular wt wet ______
V_{DGM}, Volume of sample (meter conditions) ______ cf		Velocity 80.39 fps [illegible] 30,612,842
CO_2 ______ % O_2 ______ % CO_2 ______ % N_2 ______ %		Isokinetic Ratio gr/scf @ 12% CO_2
ΔP, Velocity head 1.66800 (1.29151) in.H_2O (traverse points) C_p, Pitot tube coeff. ______		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 pollutant ______ gm CO_2, Waste only ______ %		REQUESTED BY ______ REVIEWED BY ______ DATE ______
A_s, Area of stack D= ft $\frac{D2}{4}$ π 131.50 ft^2 10'11.5"x12'		RECOMMENDATION ______
132"x 139" 127.42 Boiler Heat Capacity mmBTU/Hr.		

REMARKS

DEP 4033

PES

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
		$\sqrt{\Delta P}$ = 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)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

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 82.5

As = ft^2

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = acfm

631,123

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

PES

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTUCKY ELECTRIC STEEL Date: 5/11/00
Sampling Location: BAGHOUSE INLET Clock Time: 0720
Run #: ~~PRE~~ RUN 1A Operators: GG/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 Number	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	~~2.~~ 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	96.0
	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
		$\sqrt{\Delta P}$ = 1.3594	Ts = 142

Avg ΔP = 1.8604

Md = (0.44 x $\%CO_2$) + (0.32 x $\%O_2$) + (0.28 x $\%N_2$)

Md = (0.44 x   ) + (0.32 x   ) + (0.28 x   )

Md = 28.84

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

Ms = (   ) x (1 - $\frac{}{100}$) + 18 ($\frac{}{100}$)

Ms = ~~28.75~~ 28.71 TK

$\overline{Ts}$ = °F = 602 °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6}$ = (   ) + $\frac{}{13.6}$

Ps = 29.97 in. Hg

$\sqrt{\Delta P}$ = 1.3594

$Vs = 85.49 \times Cp \times \sqrt{\Delta P} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

Vs = 85.49 x (   ) x (   ) x $\sqrt{\quad}$

Vs = 81.62 ft/s

As = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 623962 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

Qs_{std} = x 17.647 x ____ x (1 - $\frac{}{100}$)

Qs_{std} = 543784 dscfm

PES

page 1 of 2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Kentucky Electric Steel   Date: 5/11/00

Sampling Location: Baghouse inlet   Clock Time: 1900

Run #: 1B   Operators: RK/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
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} = \quad °F = \quad °R\ (°F + 460)$

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps = \quad$ 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

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} = \quad$ 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/GG
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 Number	Velocity Head In. H_2O	Stack Temp. °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
		$\sqrt{\Delta P}$ = 1.3305	$\overline{Ts}$ = 120

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

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~~ 28.71 RK

$\overline{Ts}$ = °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{\quad}{13.6}$

Ps = 29.78 in. Hg

$\sqrt{\Delta P}$ = 1.3305

$Vs = 85.49 \times Cp \times \sqrt{\Delta P} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

Vs = 79.339 ft/s

As = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 604,547 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} = 534,879 dscfm

1-2

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: 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	1.6	254.8
	2	1.1	254.4
	3	1.7	260.1
	4	1.9	258.6
	5	2.0	246.5
	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
		$\sqrt{\Delta P}$ = 1.3372	Ts = 168

√ΔP

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\,(°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} =$ dscfm

2-2

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 in. H_2O	Stack Temp. °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 = /

$\overline{Ts}$ = °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

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 = ft/s

As = ft^2

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

Qs_{std} = dscfm

1-2

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES Date: 5/12/00
Sampling Location: ~~BF-3~~ BAGHOUSE INLET Clock Time: 1050
Run #: BI-3B/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 Head 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	~~147~~ 2.3	147.3
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} = \quad °F = \quad °R\ (°F + 460)$

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps = \quad$ 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

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} = \quad$ 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 Number	Velocity Head in. H_2O	Stack Temp. °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
		$\sqrt{\Delta P}$ = 1.3556	Ts = 146

1/2

Md = (0.44 x %CO_2) + (0.32 x %O_2) + (0.28 x %N_2) 0.0276

Md = (0.44 x) + (0.32 x) + (0.28 x) 0.02762

Md =

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$ 1.6655

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

Ms = 0.8396

$\overline{Ts}$ = °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

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 x ( ) x ( ) x $\sqrt{\quad}$

Vs = 81.92 ft/s

As = ft²

Qs = Vs x As x 60 s/m

Qs = x x 60

Qs = 626312 acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

Qs_{std} = x 17.647 x ―― x (1 - $\frac{}{100}$)

Qs_{std} = 537,728 dscfm

1-7

PES

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/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
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	235.4
	3	1.5	240.3
	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
		$\sqrt{\Delta P}$ = 1.2915	Ts = 191

108

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} =$ 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: GG/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
		$\overline{\sqrt{\Delta P}}$ =	$\overline{Ts}$ =

$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$

$Md = (0.44 \times \quad) + (0.32 \times \quad) + (0.28 \times \quad)$

$Md =$

$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$

$Ms = (\quad) \times (1 - \frac{}{100}) + 18 (\frac{}{100})$

$Ms =$

$\overline{Ts} =$ °F = °R (°F + 460)

$Ps = Pb + \frac{S.P.}{13.6} = (\quad) + \frac{}{13.6}$

$Ps =$ in. Hg

$\overline{\sqrt{\Delta P}} =$

$Vs = 85.49 \times Cp \times \overline{\sqrt{\Delta P}} \times \sqrt{\frac{Ts\ (°R)}{Ps \times Ms}}$

$Vs = 85.49 \times (\quad) \times (\quad) \times \sqrt{\quad}$

$Vs =$ ft/s

$As =$ ft^2

$Qs = Vs \times As \times 60$ s/m

$Qs = \quad \times \quad \times 60$

$Qs =$ acfm

$Qs_{std} = Qs \times 17.647 \times \frac{Ps}{Ts} \times (1 - \frac{\% H_2O}{100})$

$Qs_{std} = \quad \times 17.647 \times \frac{}{} \times (1 - \frac{}{100})$

$Qs_{std} =$ dscfm

PACIFIC ENVIRONMENTAL SERVICES, INC.

Project No.	Page of
5700.000	
Client: KES / EQui	
Location: Ashland, Kentucky	

Prepared By	Date	Checked By	Date	Sheet Title
RWLd	5/10/00	HA		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. 5700,000				Page of
Client				
Location				
Prepared By nlw	Date 5/12	Checked By [illegible]	Date	Sheet Title

Baghouse Inlet acfm = 606,547

$$\frac{606547}{5381 \times 60} = 1.879 \text{ fps}$$

$$1.879 = 85.49 \times .84 \times \sqrt{\Delta P}\sqrt{\frac{590}{28.73 \times 29.78}}$$

$$\downarrow$$

$$0.8304$$

$$\left(\frac{1.879}{85.49 \times .84 \times .8304}\right)^2 = (0.0315097)^2 = 0.000993\ \Delta P$$

Fan down at 0010 – ... writing on replacement!

FIELD DATA SHEET

$K = \frac{.01...}{~~1231.7~~}$

Plant: KES	Sample Type: Part.	Operator: TW/AE	Nozzle ID: 1.000 Thermocouple #:
Sampling Location: Baghouse Outlet	Pbar: 29.60	Ps: -.10	Assumed Bws: 1 Filter #: 300304
Run Number: BO-1 Date: 5/11/00	CO2: 0	O2: 21	Meter Box #: 2 Y: 0.988 ΔH@: 1.724
Pretest Leak Rate: 0.002 cfm @ 12 in. Hg.	Probe Length/Type: 2' Glass	Pitot #:	Post-Test Leak 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)
20-0	0	1355	~~117.628~~										
1	7.5	1402		~~0.000968~~	~~1.00~~ .98	1.00	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
6-3	22.5	~~1452~~ 1452	133.5[illegible]	0.001036	0.98	1.00	127	256	230	73	90	87	1
4	30.0	1507	137.688	0.001036	0.97	0.97	137	258	252	73	91	88	1
5	37.5	1515	142.264	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	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	190.25	0.001036	0.98	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
3-1	307.5	1745	229.44	0.001036	0.99	1.00	127	258	252	72	97	93	1

ΔVm= $\overline{\sqrt{\Delta p}}$= .03219 $\overline{\Delta H}$= $\overline{Ts}$= $\overline{Tm}$=

Bws = 1.2

avg Δp = 0.001036

Compart #20

Fan stopped - shortened unofficial cond. restart at 0 126.98 ~~069~~

Stop @ 1443 126.565 Start @ 1452

3.09 ~~130.8~~ @ Compartment 6

−3.744 ft³

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)
2	315	1752											
1	↓	↓	233.69	0.001036	0.99	0.99	127	257	253	72	98	94	1
3	322.5	1800	238.15	0.001036	0.98	0.98	133	258	252	74	98	94	1
4	330	1807	242.63	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	352.5	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
1	407.5	1845	265.28	0.001036	0.96	0.96	151	256	253	80	99	94	1
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	1937	291.39	0.001036	0.96	0.96	147	258	253	75	95	93	1
8	500.0	1945	295.810	0.001036	0.96	0.96	140	259	253	78	94	93	1

Comp 3
Comp 2

Vol = 10.99

2583

177.063
3.744

ΔVm= 173.319 $\sqrt{\Delta p}$= 0.03219 $\overline{\Delta H}$= ~~0.6~~ 0.9602 $\overline{Ts}$= 146 $\overline{Tm}$= 94

1

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 Glenn

COMMENTS Very light loading

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	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	786.4	33.7
5					
6					
TOTAL			2779.8	2823.3	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 #: 2 M
Stack Diameter: 12 As:

Nozzle ID: 0.240 Thermocouple #: 2 M
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	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 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	~~86~~	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
REG STOP - ~~377.394~~	3	1:22:30	0837	364.53	0.000992	2.1	2.1	157	256	251	80	90	85	3
umbilical kinked.	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
* XCESSIVE	3	2:22:30	0942	413.32	0.000993	2.1	2.1	183	256	251	87	92	87	3
STACK	4	2:30:00	0950	418.10	0.000992	2.0	2.0	190	256	252	90	93	89	3
TEMP. →	5	2:37:30	0958	424.65	0.000993	2.0	2.0	193	257	252	95	93	88	3
CAN'T ENTER	6	2:45:00	1005	430.02	0.000993	2.1	2.1	180	257	252	100	93	88	3
BAGHOUSE	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	254	251	88	95	90	3

ΔVm= $\overline{\sqrt{\Delta p}}$= $\overline{\Delta H}$= $\overline{Ts}$= $\overline{Tm}$=

FIELD DATA SHEET

comp 14

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: NA Orsat: NA

Sample Type: PART. Operator: RK/RD
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 #: 500382
Meter Box #: 2 Y: .987 ΔH@: 1.721
Post-Test Leak Rate: .001 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	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	251	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	0.000992	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 √Δp= .03151 ΔH= 2.11 Ts= 162 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. 300.387

TRAIN PREPARER AH

SAMPLE RECOVERY PERSON G Cay

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	693.4	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	2667.5	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/RE
Pbar: 29.45 Ps: -0.1
CO2: 0 O2: 21
Probe Length/Type: 2' glass Pitot #: —
Stack Diameter: ______ As: ______

Nozzle ID: .240 Thermocouple #: 2 m1
Assumed Bws: 1 Filter #: 300 251
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: W1

	Traverse Point Number	Sampling Time (min)	Clock Time (24-hour clock)	Gas Meter Reading (Vm) ft^3	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)
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	505.51	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	258	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 $\overline{Ts}$= 168 $\overline{Tm}$= 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: .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: —

Cmp. 20

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)
			627.92										
1	3:07:30	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	0.000762	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	0.000768	1.67	1.6	175	258	254	72	103	99	2
7	3:52:30	1610	666.7	0.000762	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

ΔVm= 178.352 $\overline{\sqrt{\Delta p}}$= 0.02762 $\overline{\Delta H}$= 1.62 $\overline{Ts}$= 168 $\overline{Tm}$= 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 drain

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.: 00-513

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.: B0 2

FILTER NO.: 300382 I.D. NO.: 00-514

FINAL MASS: TARE MASS: 351.45

DATE/TIME	NAME	MASS
#1 5/23 0726	AH	362.2
#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

DATE/TIME	NAME	MASS
#1 5/24/00 1620	DA	105960.4
#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.: 00-518

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.

$$Vwstd = 17.647 * Vm * \gamma * \frac{Pbar + \frac{\Delta H}{13.6}}{Tm,\ {}^{\circ}R}$$

2. **Volume of water vapor at standard conditions, ft^3.**

$$Vmstd = 0.04707 * Vlc + 0.04715 * Vsg$$

3. **Moisture content in stack gas, dimension less.**

$$Bws = \frac{Vwstd}{Vwstd + Vmstd}$$

4. **Dry molecular weight of stack gas, lb/lb -mole.**

$$Md = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * (\%N_2 + \%CO)$$

5. **Molecular weight of stack gas, lb/lb-mole.**

$$Ms = Md\,(1\text{-}Bws) + 18 * Bws$$

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 ug/dscm.

$$ug/dscm = Target\ Catch,\ micrograms\ /\ Vmstd\ (m^3)$$

19. Concentration corrected to 7% oxygen.

$$ug/dscm\ @\ 7\%\ O_2 = ug/dscm * (20.9-7)\ /\ (20.9-measured\ O_2)$$

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.

$$PMR,\ lb/hr = \frac{ppm,\ dry * Compound\ Molecular\ Weight}{(385.3\ x\ 10^6)} * dscfm * 60$$

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.

$$RE = (Inlet\ lb/hr - Outlet\ lb/hr\ /\ Inlet\ lb/hr) * 100$$

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
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

139" x 132"

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 RUN DATE RUN TIME	BO-1 5/11/00 1355-1945	BO-2 5/12/00 0715-1120	BO-3 5/12/00 1218-1618	Average
	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	14,094
I	Isokinetic Sampling Ratio, %	99.2	97.0	99.0	98.4

DA

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, gr/dscf**	**2.07E-03**	**2.16E-03**	**1.41E-03**	**1.88E-03**
C_{PM}	**Concentration, lb/dscf**	**2.96E-07**	**3.09E-07**	**2.01E-07**	**2.69E-07**
E_{PM}	**Emission Rate, lb/hr**	**9.54**	**9.48**	**5.37**	**8.13**

DA

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

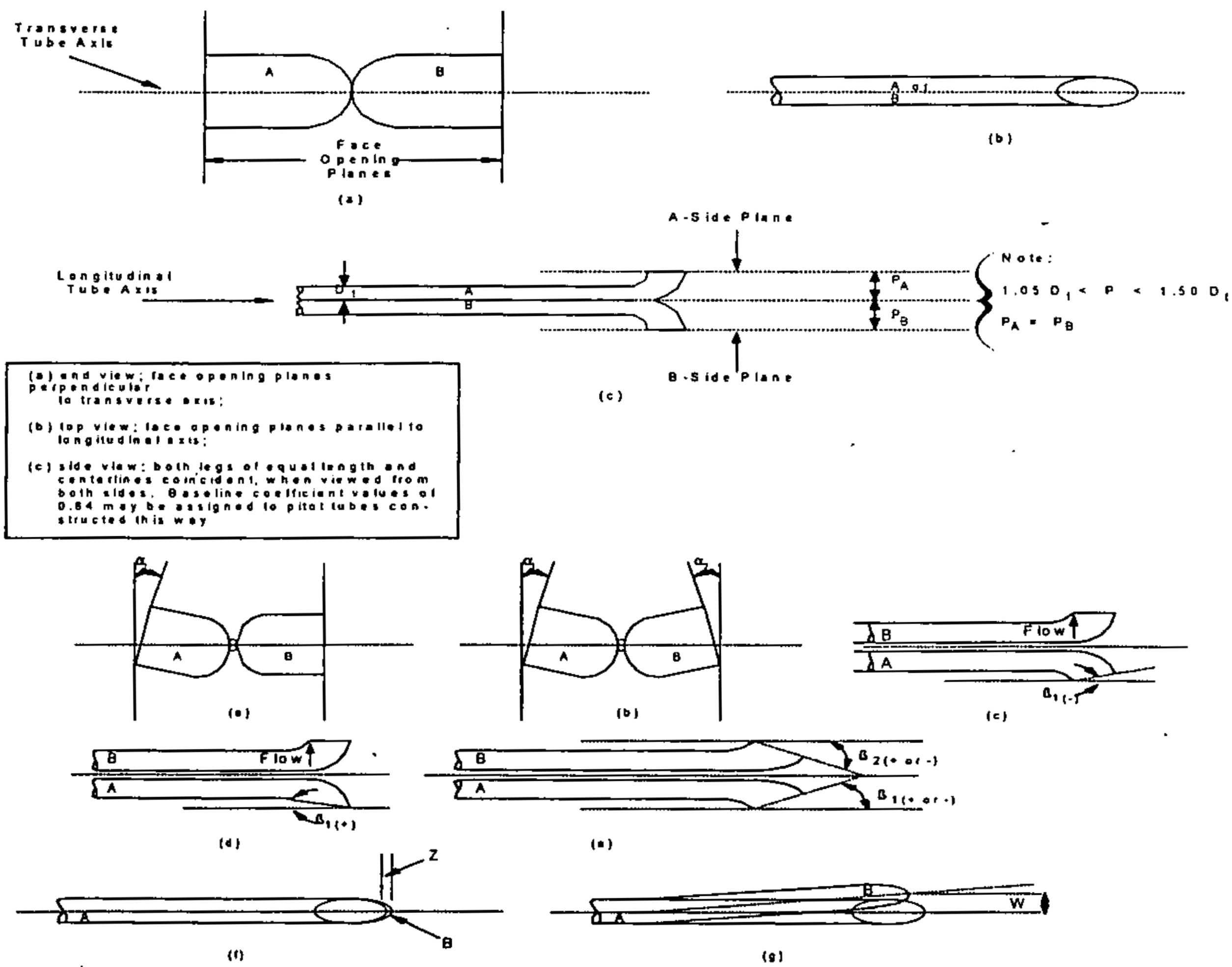
Nozzle Diameter

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).

PACIFIC ENVIRONMENTAL SERVICES, INC.

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.**



The types of face-opening misalignment shown above will not affect the baseline value of Cp(s) so long as α_1 and α_2 is less than or equal to 10°, β_1 and β_2 is less than or equal to 5°, z is less than or equal to 0.32 cm (1/8 in.), and w is less than or equal to 0.08 cm (1/32 in.) (reference 11.0 in Section 16.0).

**40 CFR 60, Appendix A, July 1995

PACIFIC ENVIRONMENTAL SERVICES

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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	1/13/00	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 - 1 = Full Probe Assembly   # - I - 1 = Inkonel   # - T - 1 = Thermo. Alone

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.

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Cincinnati, Ohio 45249
Phone: 513.489.6611
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Meter Box No.: 2

Dry Gas Orifice Meter

Pb, in. Hg	29.36	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
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
t	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

AVERAGE Y **0.988** (Reference meter correction factor of 0.988)

Average Y Range = 0.968 TO 1.008 **ACCEPT**

AVERAGE 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	-0.692	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 to 0.5 %

% difference: $\frac{(\text{Equivalent Temp., °R} - \text{Digital Indicator Temp., °R}) * (100\%)}{(\text{Equivalent Temp., °R})}$

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 Bath	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 calibration used.

[b]Allowable tolerance ±5°F

ACCEPT

Calibrated By : da

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PACIFIC ENVIRONMENTAL SERVICES, INC.

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			

[redacted]		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
t	Time (min.)	15.0	15.0	15.0
[redacted]				
$Vw_2 - Vw_1$	Net Volume RTM	12.103	12.115	12.112
$Vd_2 - Vd_1$	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)) / (Vd * (Pb + (dHd / 13.6)) * (Tw +460))

dH@ = 0.0317 * dHd / (Pb (Td + 460)) * (((Tw +460) * time) / Vw)^2

Posttest Dry Gas Meter Calibration Form (English Units)

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

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STACK THERMOCOUPLES

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	423	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	10/29/99	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		

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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).

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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	

[a]Type of calibration used.

Calibrated By: ah

[b]Allowable tolerance $\pm 2°F$

SECTION B - EMISSION POINTS, EMISS ABLE REGULATIONS, AND OPERATING CONDI

02 (01) - Electric arc furnaces(EAFs), Ladle metallur ociated Dust handling equipment

Description:
The two Lectromelt electric arc furnaces A and B have maximum capacities of 34 tons/hr, each. The emissions 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)]

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, Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.